

Chapter 5

Sustainability in Nursing Education

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5.1 Introduction

In this chapter the concept of sustainability in nursing as a health care service, and in nursing education, is described. First sustainability as a concept and phenomenon is defined, before a discussion of the relationship to nursing is provided. Then sustainability, and its possible consequences for nursing education, is discussed, including the need for an emphasis on responsibility in both nursing education and nursing practice. The chapter highlights the close interactions between higher education and the provision of care by nurses in hospitals and elsewhere. A key point in the chapter is the notion that because the environmental footprint of nursing practices is considerable, it is particularly important that the education sector is able to identify new best practices and convey these to new generations of nurses.

Sustainability is a concept related to nursing and nursing education in several ways, including sustainability regarding climate change, and nurses' responsibility to take environmental issues in consideration when planning nursing (AACN 2011). Others discuss sustainability as a phenomenon which should be emphasised when planning nursing education in a changing world of health care systems (Mannix et al. 2006). To have an educational system which takes into considerations how to develop clinical nursing education requiring practice in different clinical areas when the health care system changes to outpatient clinics, and not have patients staying in the hospital for several days. Mannix et al. (2006) then discuss how to have sustainability in nursing education fulfilling government requirements. Goodman (2011) discusses sustainability in nursing education as environmental responsibilities in the nursing curriculum. His thoughts are

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elaborated in the next part of this chapter on sustainability and consequences for nursing education.

In the introduction to this book a range of approaches to sustainability was outlined. In the context of nursing, it may be useful to highlight some additional basic definitions here at the outset of the chapter. In the Oxford Dictionary of English (2003) 'sustainable' is defined as coming from the Latin word 'sustinere' consisting of sub- meaning "from below" and tenere meaning "hold". Sustainable has two explanations of meaning: "able to be maintained at a certain rate or level" and the second explanation where sustainable means "to be able to upheld or defended". An example of the first meaning is to have a "sustainable economic growth" and for the second meaning could be to have "sustainable definitions of good educational practice" (Soanes and Stevenson 2003, p. 1779). Moreover, sustainability may be defined generally as the ability "to bear something, to keep from failing, to strengthen, to encourage, to keep up, to prolong or to maintain" (Keating et al. 2010, p. 150). This definition is in line with the dictionary definitions. The World Commission on Environment and Development also holds considerable relevance in the context of nursing: "sustainability is a development that meets the needs of the present without compromising the ability of future generations to meet their own need" (World Commission on Environment and Development 1987, p. 43).

The central common theme in these different definitions on sustainability is the duration of the possible task. It should be implemented in such a way that it has the possibility to last for a long period of time and not consuming resources in such a way that it will end quickly. The World Commission on Environment and Development focuses on development of societies in general, including environmental, social and economic aspects. Nursing forms a central part of social and economic activities in any society, and it has considerable environmental impact. As such the key concerns expressed in the World Commission on Environment and Development (1987) report is as central to nursing as to any other sector.

5.2 Description

In nursing, one suggested definition is as Anåker and Elf (2014) elaborated through a concept analysis:

The concept of sustainability in nursing can be defined from a core of knowledge in which ecology, global and holistic comprise the foundation. The use of the concept of sustainability includes environmental considerations at all levels. The implementation of sustainability will contribute to a development that maintains an environment that does not harm current and future generation's opportunities for good health (Anåker and Elf 2014, p. 7)

They discuss six different defining attributes of sustainability in nursing: Ecology, Environment, Future, Globalism, Holism and Maintenance (ibid.). With Ecology the focus is on preserving an ecological balance in a manner which avoids

depletion of natural resources. It is closely linked to Environment which in many ways is part of the sustainability concept. International Council of Nurses (ICN) has in their Code of Ethics for Nurses (2006) a point emphasising the environment: “The nurse also shares responsibility to sustain and protect the natural environment from depletion, pollution, degradation and destruction” (p. 37). This point in the ethical code for nurses shows the responsibility the nursing profession claim for themselves what nurses should be aware of and respect when they plan nursing intervention and nursing systems in the health care sector. Nurses have a role in taking care of the environment all over the world.

The World Health Organisation (2013) uses sustainability in close connection to an understanding of environment as essential part of future possibilities also in health care services. As already explained, the focus of the World Commission on Environment and Development (1987) is a perspective on the future as a central element in the definition of sustainability. It is important that nurses are aware of their responsibility for future generations, as well as their own generation when planning nursing and health care. Nurses often focus on the particular patient and his or her needs here and now. However, they have also a responsibility to take future generations and also a global perspective into consideration when they perform and plan nursing care activities.

In the definition from Anåker and Elf (2014) globalism is another defining attribute of sustainability. To see nursing as responsible at a global level, and not only local, is essential for understanding nurses’ responsibilities as professional health care workers. ICN (2007) wrote a Fact Sheet regarding Nursing Self Sufficiency on the global responsibility and sustainability of global nursing shortage. Here they discuss the fact that sustainability in nursing implies a global focus on migration and shortages of nurses. Health care planners should plan for education of necessary health care workers as nurses in each country, and not plan for recruiting nurses from developing countries. This is because of the importance of avoiding a brain drain from developing countries which need the nurses they manage to educate themselves. This is another aspect of sustainability and globalisation. To work sustainably is to have a global focus on different aspects of nursing professional’s responsibilities.

Included in the definition is holism as a central key attribute in sustainability in nursing. Holism is recognised as a key element in nursing by for example McEvoy and Duffy (2008). They find that holistic nursing care requires sensitivity and knowledge of mind, body and spirit for the patient, that means understanding the “whole” surrounding the patients conditions and to harmonise his or her condition. They conclude their concept analysis with the definition of “holistic nursing practice” as:

Holistic nursing care embraces the mind, body and spirit of the patient, in a culture that supports a therapeutic nurse/patient relationship, resulting in wholeness, harmony and healing. Holistic care is patient led and patient focused in order to provide individualised care, thereby, caring for the patient as a whole person rather than in fragmented parts (ibid. p. 418)

McEvoy and Duffy (2008) have a focus on nursing practice and as such define holism regarding the individual patient. To be critical to an individualised holistic understanding in nursing, this understanding of holism does not include a global or environmental view on nursing responsibilities.

In a sustainability view, holism includes having the “whole” picture clear in mind, not only the particular patient but also the environment locally and globally around the patient, his or hers relatives and the health care system as such. Holism in general is defined by Oxford Dictionary of English (2003) as

the theory that parts of a whole are in intimate interconnection, such that they cannot exist independently of the whole, or cannot be understood without reference to the whole, which is thus regarded as greater than the sum of its parts (Soanes and Stevenson 2003, p. 828)

Holism in this understanding includes environmental aspects affecting nursing practice. Nursing is not an isolated profession excluded from rest of the world or health care systems, and as such they should include environmental as well as global issues in planning nursing professions responsibility to the society.

The last defining attribute that Anåker and Elf (2014) found was Maintenance. This is closely linked to the attribute Future. Sustainability includes that the development or task lasts for a long period of time. It should be maintained to continue for a long time (Keating et al. 2010). For nursing to be sustainable it must be planned so that the work force of nurses, the distribution of nursing personnel and the content of nursing care are organised to last for the future. This includes a perspective on ecological and environmental factors in the surroundings of nursing and nursing education.

A focus on environmental factors is an element that occurs prior to sustainability, and is defined as an antecedent of the concept of sustainability. Most people today accept that we see climate change due to greenhouse gases in the atmosphere. Climate changes include among others frequency of extreme weather events, lack of ground water and polluted rivers, limited food availability, rising sea levels and melting of ice at both the Northern and the South poles (Anåker and Elf 2014; Solomon et al. 2007). To be aware of these changes and on the environment is required in order to handle sustainability. In the health care sector this means being aware of energy efficiency, green-building design, food, waste, toxins and transportation (Anåker and Elf 2014). As part of this, the other antecedents of sustainability is, when being aware of environmental challenges with climate changes, to have confidence in the future, an attitude of responsibility and willingness to change. Nurses, as a big group of health care workers, can make a difference when they take a global and holistic responsibility to impact health care services in acting for a sustainable service to the public.

A practical example of how nurses may have impact on environmental sustainability is handling of waste. Nurses handle pharmaceuticals during their everyday practice in the health care sector. To have a conscious and responsible way of treating waste after, for example, injections or of throwing away outdated medicine are important in order to fulfil a responsible and sustainable nursing practice. Nursing students should learn how to dispose of waste in a secure and safe manner.

It should be safe both for the persons involved, but as well for the environment. Other materials that nurses handle are biomaterials such as blood products, which also should be disposed in a secure manner for the patient, the nurse and the environment.

Another example of issues relating to nurses' responsibilities for environmental sustainable practice is use and not least reuse, of disposables that may be reused. To be aware of economic and ecological aspects of disposables used in nursing practice is an important aspect of sustainable nursing practice. It is not only within the health care system which nurses should act responsibly. It is vital to start in the educational system, in order to affect future nurses' attitudes toward a sustainable nursing and health care system.

5.3 Discussion

5.3.1 *Sustainability and Consequences for Nursing Education*

In an article on sustainability in nursing education, Goodman (2011) discusses the importance of the changing nursing curriculum, taking climate changes and sustainability into consideration. He states that changing the nursing education in order to address goals that prepare graduate nurses for understanding sustainable health care services is imperative. Transmission of skills and knowledge is not enough, developing attitudes towards understanding the impact climate changes have on health is necessary as well. Goodman (2011) claims the link between 'sustainability, climate change and health' and discusses with references to Sterling (2001) "Education for Sustainability", with a focus on education as transformative rather than being only transmissive, where knowledge only is transmitted to the students, and they learn how to do but not how to change.

Sterling (2001) claims that education has different roles in society, such as a socialisation function including replicating society, culture and citizenship; a vocational function preparing nurses for employment; a liberal humanist function where development of the individual and personal virtues and last a transformative function where the students are encouraged to develop a fairer society and a better world. It is this transformative function which is often lacking in today's educational systems. The students learn how to function within existing societies, but not how to transform and improve society in a sustainable way.

Learning may be seen at different levels. Goodman (2011) discusses first order learning, which implies transmission of knowledge where the students only learn to perform clinical skills, but not to link human health together with ecological health. In order to transform the student and his or her ability to affect society later on, it is necessary to have second or third order learning. These levels imply that the students learn to criticise and critically reflect upon basic values and assumptions

in the society in general, and in the nursing profession especially. They learn not to take the well-known for granted, but are able to judge the impact their actions have, not only on the healthcare system but on the planet and with a global perspective.

The Sustainable Development Education Panel (2003) identified seven key concepts for sustainable education: Citizenship and Stewardship, Sustainable Change, Needs and Rights of Future Generations, Interdependence, Diversity, Uncertainty and Precaution and Quality of Life, Equity and Justice. In nursing, Goodman (2011) suggests that Well-being is added to the list. Thompson and Aked (2011) challenges nurse educators and policymakers to apply the well-being concept, with some evidence-based elements which are defined as: Connecting, Giving, Activity, Taking Notice and Learning. In the report they discuss how well-being may be an important part of mental health, and how it may influence public health in a wider perspective.

Goodman (2011) has several recommendations for nursing curricula, in order to develop environmental sustainable nursing education. Among others he recommends that clarifying the role of both nursing education and educational ideology is mandatory to change the curriculum development. The nurse educators must identify the different levels of education: first order which is adaptive, second order which is critically reflective and third order which is transformative. Further one should agree upon whether implementation of sustainability issues should be within an infusion model where the issues are woven into all aspects of the curriculum, or a generic model where the issues are tailored into the disciplines. Students should be encouraged to visit green spaces, and be challenged to link these experiences to well-being and health promotion. In addition they should be encouraged to collaborate with multi-disciplinary groups, local authorities and third sector (voluntary workers) (Goodman 2011, p. 735).

The Curriculum should be designed to include artistic expression and experience. It should include different learning technologies, such as serious gaming, simulation training, as these may be models of sustainable practice. In order to develop critical reflection, the nursing students should be encouraged to discuss and develop a trans-disciplinary approach. Goodman (2011, p. 736) gives examples of relevant disciplines such as Economics, Politics, Design, Philosophy, Environmental Science literature and theory. Furthermore students may be encouraged to set their personal goals for a sustainable lifestyle, both as private persons and as professionals.

5.3.2 Recommendations for Environmental Sustainability

The American Association of Colleges of Nursing (AACN 2011) has developed recommendations for environmentally sustainable academic nursing education. They recommend that Schools of Nursing works to discover cost- effective solutions which reduce carbon that benefit consumers, and advance the health of the planet and its population. This includes addressing how to green nursing practice

laboratories by reducing, reusing and recycling. This may be done by using low-energy lighting, to unplug equipment not in use, and consider water conservation where possible. It may be by reusing by for example to reuse a catheter kit after use on a mannequin in the laboratory, and to recycle paper and bottles as well as other products eligible for recycling.

In addition AACN (2011) recommends that nurse students are taught to have a responsible and conscious use of health care resources as well as treat waste in a responsible manner. Their recommendations for educational competencies for undergraduate and graduate nursing students are that nursing students should:

- Use healthcare resources in a judicious and thoughtful way
- Dispose of health care associated waste, including pharmaceuticals and biomaterial, in a responsible manner
- Recognise the importance of minimising healthcare's biological, chemical, and physical waste stream
- Consider the adoption of policies aimed at promoting environmentally sustainable schools of nursing and/or clinical settings (AACN 2011, p. 18, Appendix F).

They especially recommend Deans for Nursing Education in the Universities to have a conscious focus on sustainability, and care about environmental issues in the educational system. Nursing students as well as nurses have also a right to work in an environment that is safe and healthy. So the focus on sustainable environment is thus both local and global at the same time. Nurses should have knowledge of environmental health concepts in their practice, and they should be guided by The Precautionary Principle in order not to harm human health or the environment.

In a recent article Butterfield et al. (2014) discuss how the principles of AACN's recommendations of Environmental Sustainability in Colleges of Nursing may be implemented. They report how one college in the United States of America (US) implemented the recommendations in their curriculum. In short they performed the following steps:

- (1) increasing student and faculty awareness; (2) greening business operations; (3) increased participation in media events; (4) leveraging the impact of national sustainability initiatives, and (5) enhancing curricula at the undergraduate and graduate levels (Butterfield et al. 2014)

Examples of how to enhance curricula were to include content of environmental issues at different levels to undergraduate and graduate students. The college worked through creating a culture for sustainability and contributions of health care to greenhouse gas production.

The college experienced some barriers, such as challenges with changing from giving lectures to performing more experiential and case-based learning activities. There was also discussion regarding content in nursing curricula. Focusing on environmental sustainability changed focus from former important individualised care to more global issues. Some experienced this as losing focus on issues more central to the profession (Butterfield et al. 2014). The implementation of curricula focusing on environmental sustainability had an economic cost, and several existing committees had to take action within their respective areas of jurisdiction

instead of creating a new committee especially working on this topic. This was experienced as positive, because the change in curriculum towards environmental sustainability was integrated in the whole college (Butterfield et al. 2014).

5.3.3 Competence for Acting Sustainably in Nursing Education

One may say responsibility is linked to competence, and the possibility to understand and foresee consequences of ones actions. White (1994) discusses competence to consent, and says in her book that competence has to be judged for each particular situation and not generally. A student may have the competence to understand problems with waste of pharmaceuticals in an improper way because she/he is told how to handle such waste. But she/he may not be qualified to make regulations for the hospital on handling pharmaceutical waste on a large scale. She/he may be responsible for how she/he handle waste in his/her daily practice in home health care or in hospitals, and be competent to take responsibility for his/her own actions regarding responsible disposable of waste material.

Competence is also a matter of degree. The nurse student may have competence to understand his/her role in the educational system for responsible handling of waste, but not for the responsibility for sustainability the educational system have as system. Here the nurse educators or the dean have greater responsibilities and competence at a higher degree for organising sustainable systems. At the same time the nurse educators may not have the competence or responsibility to evaluate how the educational system ought to be organised in order to have a sustainable educational system in the country in order not to require import of nurses from developing countries, and as such imply brain drain of qualified nurses from such areas.

White (1994) claims that consequences are irrelevant in considerations to competence. This may be contested and debated, as consequences are important to assess when judging responsibility and competence to take the responsibility one has for actions. However, she argues that a person may choose negative consequences and still be competent. Unfortunately, one may argue that this happens all too often regarding sustainable health care and education.

The actors in the educational area may see that the consequences of their actions are not sustainable, and still continue to act in the same way as earlier. The nurse educators and nurse students may still be judged as competent to understand the consequences, but may not take care or consider their responsibilities for future generations or for reducing carbon to the atmosphere through their actions. This may be understood as the nurse students and the nurse educators being competent but not responsible. The question is, are they competent when they do not act on what they know about negative consequences of climate change, and the need for everyone to act responsibly? One may argue that nurse students and nurse educators

as well, ought to have an attitude of responsibility, and to be transformative to the situation and the challenges climate change have on the environment. To act blindly with a short term perspective, and not take into considerations responsibility for future generations and for the “whole” world, is not to take one’s responsibility seriously.

However, to be competent to see and understand the consequences of one’s actions implies having cognitive and affective abilities to handle the information (White 1994). This may be challenging when one has to foresee what consequences ones action today may have in the future, and for a long period of time ahead. It is difficult when experts do not agree on what consequences different kinds of actions may have on the environment (see introduction to this book). However, today most experts agree on climate changes leading to increased frequency of extreme weather events, lack of ground water, limited food availability, rising sea levels and melting of ice at the poles (Anåker and Elf 2014; Solomon et al. 2007). As nurses, we also know that the climate change has consequences for the public health such as increased air pollution, more vector-borne diseases, spread of harmful wastes, reduced biodiversity, more malnutrition due to decreased food supplies, and increased pesticide use (Anåker and Elf 2014; Costello et al. 2009).

To have the ability to foresee consequences of one’s actions implies the ability to understand that what we do today affects the climate and environment, both today but also in the future. In order to change attitudes, the information should be understood not only intellectually but also emotionally. Our attitudes are affected both intellectually and emotionally and both aspects contribute to how we understand our surroundings and how we act upon different conditions. Indeed, Hans Herlof Grelland’s presentation of Heidegger’s *Dasein* seems highly pertinent in this context (see Chap. 2). If we do not understand that driving cars implies increased carbon into the air, and that this may have consequences for the climate on the long run, we do not change attitudes toward thinking alternative ways of transportation. The leaders of universities should encourage their students and employees to take climate changes into considerations when planning curricula. Moreover, the student experiment presented by Grelland in his chapter, concerning engineering students being exposed to the notion of breathing when studying air-quality, may serve as an inspiration for such efforts to renew curricula and teaching methods in nursing.

5.3.4 Responsibility for Sustainable Nursing Education

I now discuss Sustainable Nursing Education with an ethical angle regarding nurses’ responsibilities to act sustainably. To be responsible has different meanings. It origin comes from Latin ‘respon-’ meaning ‘answered, offered in return’. Responsibility has three different but associated meanings:

- (1) “the state or fact of having a duty to deal with something or of having control over someone”;
- (2) “the state or fact of being accountable or to blame for something” and
- (3) “the opportunity or ability to act independently and take decisions without

authorisation". To be responsible has likewise three different but associated meanings: (1) "having an obligation to do something, or having control over or care for someone, as part of one's job or role"; (2) "being the primary cause of something and so able to be blamed or credited for it, for example to be morally accountable for one's behaviour;" and (3) "(of a job or position) involving important duties, independent decision-making, or control over others" (Soanes and Stevenson 2003, p. 1501)

In this context it means that to have responsibility for sustainable nursing care and nursing education is to have the power, obligation and willingness to react to a challenging situation. A central question regarding responsibility is who is responsible, and for what? One can argue that nursing students and nurse educators are responsible for sustainable education conditions. Likewise nursing students and nurse educators are as responsible as all citizens for climate change, and its consequences on society and environment. The responsibility for future generations is also part of nurse students' and nurse educators' responsibilities.

If nurse students and nurse educators are responsible for sustainable education meeting the climate change and future generations' needs, one main discussion is on what they are responsible for, and how this responsibility may be taken care for in a responsible way. It is hard to claim that they are not responsible for sustainable education and practice. All human beings may be held responsible for their actions, and the consequences of these actions in some ways.

To be concrete, it is a question if it is sustainable for a University in Norway to have a centre in Greece where the employees have to travel by airplane for several hours in order to use the centre for courses or meetings. It may be nice and it may foster collaboration between the two countries, as well as supporting business in Greece. Maybe it is not the best way to meet climate changes and responsibilities for the environment. Also, is it wise to encourage to participation in congresses far away, or international collaboration based on visits where the transportation possibilities are by airplane. One solution may be that nurse educators could think alternatively, and have meetings using technological solutions rather than personal visits in countries far away. These questions are easy to ask intellectually, but maybe challenging emotionally, because globalisation is part of our everyday life, and it is nice to see other parts of the world, and nice to meet new colleagues from other countries and collaborate with them personally. One implication of the globalisation policy is whether the employees and the students are responsible for participating in activities like this, when it is maybe not sustainable but expected from the leaders of universities all over the world.

Another question is whether the nursing curriculum is sustainably organised? It is important that nurse students are educated to think sustainability, and to recognise the responsibility each one has for actions that support sustainable professional conduct. The content of the curriculum should include information about sustainable health care services. The curriculum should also be organised in such a way that the students are taught to be transformative and be able to critically reflect upon their role as nurses and responsible citizens of a united world. Nurse educators should encourage students to critically reflect upon their possibilities to change attitudes in the population towards sustainable health care, and upon their own

attitudes towards sustainable health care work. It should be possible to a greater extent to reuse equipment, and not have all for one time use and throw away, but rather sterilise equipment in order to reuse, rather than throw away plastic equipment every time nurses have to do different procedures.

5.4 Conclusion

Nurses are responsible, together with all health care professions as well as the public itself, to maintain and provide a healthy population. Nurses are key professionals in the health care system, and should be aware of their responsibilities for the public to reduce effects of climate change. Nurse educators are as well responsible to equip nursing students with knowledge, values and attitudes toward securing a sustainable health care system. Nurse educators are also responsible for providing a sustainable curriculum encouraging students to understand climate changes consequences for public health. They should also be trained and equipped to develop attitudes toward critical reflection and taking responsibilities for the environment. Nurses and nurse students should be aware of their special responsibilities, as health care professionals, to inform the public of the consequences and effects climate change have on public health, and inform the public of methods and attitudes safeguarding a sustainable educational system and health care system. We are all responsible for a sound environment, respecting future generation needs and as such for a sustainable policy, whether it is for the educational or the health care systems. Future generations are our responsibility, as well as respecting responsibility for today's vulnerable groups who suffer most by environmental and health issues related to climate change and lack of today's sustainable systems.