



Contemporary Issues

The use of evidence-informed sustainability scenarios in the nursing curriculum: Development and evaluation of teaching methods

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SUMMARY

Background: Climate change and resource scarcity pose challenges for healthcare in the future, yet there is little to raise awareness about these issues in the nursing curriculum and nurses are poorly equipped to practice in a changing climate. The aims of this paper are to describe how an evidence-informed 'sustainability and health' scenario based on two sustainability issues (resource depletion and waste management) was introduced into a nursing clinical skills session, and to report the evaluation of the session.

Methods: Based on evidence from our own research on waste management, sustainable procurement and resource scarcity, a practical hands-on skill session was delivered to 30 second year student nurses as part of a scheduled clinical skills day. The session was observed by one of the facilitators and interactions recorded and this was followed by a brief questionnaire completed by participants.

Findings: Observations of the group sessions and discussion found that students demonstrated limited knowledge about natural resources (such as oil) used in the production of items used in healthcare; they engaged in discussions following the use of Internet resources, and were able to segregate waste appropriately. Thirty (100%) students completed the evaluation questionnaire, found the resources used in the skill session helpful, and thought that the scenarios were realistic. Nineteen reported being more aware of peak oil; 30 were more aware of risks to patient experience and service delivery if resources become unavailable; 30 reported greater awareness of the management of waste in healthcare. Comments on the questionnaire indicated a high level of engagement and interest in the subject.

Conclusion: The problem of climate change and resource scarcity can too easily be seen as a distant or intractable problem. However one way to make this topic real for students is through the use of clinically relevant scenarios in skill sessions.

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Introduction

It has been suggested that climate change presents the biggest single threat to health in the 21st Century (HM Government). Healthcare services need to plan for the health consequences, and employ mitigation measures to ensure sustainability, service delivery and business continuity. The impacts of climate change on health and healthcare are well documented (Nichols et al., 2009), other challenges relate to the depletion of scarce or carbon intensive materials. We need to develop healthcare professionals who will be able to deal with the mitigation and adaptation challenges that climate change and the possible depletion of fossil fuel and scarce materials present. We take 'sustainability' to mean 'more than merely lasting or surviving; it means designing

and delivering health care that uses resources in ways that don't prejudice future health and wellbeing' (Naylor and Appleby, 2012).

There is limited literature on nursing and climate change (or sustainability); nursing students are poorly prepared to understand the connections between resources, climate change, sustainability and health (Goodman and East, 2014; Barna et al., 2012; Goodman, 2011; Goodman and Richardson, 2009). Sustainability can be embedded in the healthcare curriculum through a range of learning opportunities; for example in the context of public health and health inequalities, poverty, food security and infectious diseases (Richardson and Wade, 2010). It has been argued that each learning programme should have sustainability literacy for its nursing students nested within a broader context of links between health and the natural environment, including inequalities in health and opportunities for chronic disease prevention (Barna et al., 2012). Arguably, as climate change and fossil fuel dependency pose serious threats to future healthcare we have an obligation to prepare our students for the consequences, to ensure that they are able to deal with the associated healthcare planning and resource issues. Nurse educators have a responsibility to embed this learning using practical (vocational) examples; a nurse who cannot make the links

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between clinical waste, resource use, carbon reduction and health inequalities will not be able to devise solutions for future healthcare challenges.

One way to introduce sustainability to student nurses is through scenarios that have practical application to clinical practice. The use of scenarios is integral to Problem Based Learning in clinical education and promotes communication, team working and problem solving (Wood, 2003). In healthcare, contemporary education approaches emphasise the need for active learning (Endacott et al., 2003). Scenario based learning is founded on situated learning theory, encourages opportunities for active learning, is based on valuing contextual knowledge, and provides a strategy for bringing students closer to the realities of their profession (Errington, 2011). Nurses have impact on how resources in healthcare are used and disposed of; through scenarios in clinical skills sessions, practical connections can be made between the sustainable use and potential scarcity of resources, and climate change.

This paper describes the delivery and evaluation of a sustainability clinical skills session using an evidence-informed scenario. The scenario was based on healthcare waste management research (Nichols et al., 2013; Grose et al., 2012), and an evaluation designed to identify items used in healthcare that are important for patient care and are potentially at risk in terms of future supply (WRAP, 2013; Grose and Richardson, in press). Grose and Richardson highlighted the vulnerability of plastic items due to their reliance on crude oil supplies and potential for recycling.

Aim

The aims of this paper are to describe how an evidence-informed 'sustainability and health' scenario introducing two sustainability issues (resource depletion and waste management) was introduced into a nursing clinical skills day, and to report the evaluation of the session.

Methodology

A practical hands-on skill session was delivered as part of a scheduled clinical skills day. The session was observed by one of the facilitators and interactions recorded and this was followed by a brief questionnaire completed by participants.

Participants

Thirty nursing students studying the 'child field' of the undergraduate nursing programme at Plymouth University who were half-way through their second year of training. Students were participating in clinical skill days in January 2013. These students had not previously been involved in skill sessions that focused on sustainability.

Teaching Methods

The sustainability and health skill scenario session formed one of the four skill stations during a clinical skill day. Learning outcomes were specified and students engaged in discussion, fact-finding and practical work. The scenarios and supporting literature were made available prior to the session. See skills session content in Box 1.

Evaluation

Notes were taken by one of the skill facilitators during the session and a brief questionnaire designed to capture awareness and feedback was given to students at the end of the session.

Box 1

Description of skills session.

Learning outcomes

By the end of the session the student will be able to:

- Describe where plastic comes from
- Assess the impact of the loss of key items on patient experience and service delivery
- Allocate items to the appropriate waste streams.

Materials

Computer
Giving sets, IV sets, syringes
Yellow and black rubbish bags, sharps bin
Tape to make a line on the floor, high/low impact labels
File of background information
Box of waste materials

Methods

- 1) Scenario: students will be given the following scenario (20 min):

Aim

The aim of this scenario is to engage you in discussions about risk and sustainable procurement and for dealing with future limited availability of resources that are important for patient care.

Background

The un-interrupted supply of essential items for patient care is crucial for healthcare organisations. The majority of products central to healthcare are derived from natural resources such as oil and cotton, supplies of which are seeing increased global demand with some resources becoming depleted. Initially this will impact on the costs of acquiring them, adding a further burden to NHS expenditure. Also of concern is the possibility that some key resources may become unavailable. The following scenario has been prepared by identifying an item which might present a risk to the delivery of healthcare should its supply be restricted or removed. The scenario describes a situation where the global availability of raw materials, required for critical products consumed by the NHS has been affected. The scenario is based on factual information; however the situation described is fictional.

Participants are asked to consider how and what strategies could be put in place to mitigate the impact on healthcare provision of restricted or interrupted supply and associated price rises. Participants are encouraged to consider how service provision could be maintained, or even improved, in response to the challenges set out in the scenario. You will be asked to follow the questions and prompts following the scenarios and take notes so you can report back following your discussions.

Scenario

It is estimated that globally more than 100 million tonnes of plastic is manufactured each year. The use of plastics in healthcare is widespread. On a typical day in one hospital several hundred of patients are receiving pill bottles, intravenous lines (IVs) and undergoing surgical procedures which use plastic, single use products. Given the fact that many of these items have contact with bodily fluids, none of these components are usually recycled.

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