Sustainable development has been defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (United Nations, 1987). Sustainability has been one of the University of Plymouth’s core principles for many years in terms of maintaining a sustainable campus, enabling sustainability-focused learning and research, and motivating students to tackle the sustainability challenges they will find in their workplaces.

In the Faculty of Health, the Sustainability, Health and Wellbeing Interest Group (SHWIG) explores issues and seeks solutions to the challenges that sustainability presents to society and health. Key foci have been to embed sustainability in curricula and to motivate students and graduate nurses to address sustainability issues found in clinical practice, as recommended by the Royal College of Nursing (RCN, 2021). Goodman (2011) and Richardson et al (2017) have also made the case that sustainability should be integral to nurse education to enable sustainable clinical practice.

The curriculum
Work by academics and SHWIG members (Nichols and Richardson, 2011; Nichols et al, 2009; Richardson et al, 2009) supported the need to educate nursing and midwifery students about climate change, health and sustainability. An international collaboration to produce evidence-based teaching and learning material on this topic began in 2014 and led to the launch of the NurseSUSTOOLKIT in 2017. This free, online resource can be used for educational purposes in any healthcare context.

Sustainability education is included in all the nursing and midwifery programmes at the University of Plymouth and is delivered by lecturers with an interest in the area. For example, students have scenario-based learning sessions about procurement and waste management as part of...
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Wild swimming can be used as a way to help people explore the interplay between their own mental and physical health and the health of the planet.

their clinical skills modules and in management and leadership modules. In public health modules, students are introduced to the concept of planetary health and learn about the impacts of climate change on human health. Additionally, mental health students are offered experiential reflexive learning through coast path ecopsychology workshops, as advocated by Jordan (2015). All students are invited to take part in micro-restorative wild swimming sessions, to explore the relationship between physical, mental and planetary health.

SHWIG offers an annual sustainability prize to third-year student nurses; this not only provides motivation, but also makes clear links between sustainability theory and practice. Examples are now emerging of former students applying their sustainability knowledge both in the workplace and their own postgraduate research work.

Active learning

The Quality Assurance Agency for Higher Education (2014) emphasised the importance of students synthesising, evaluating and applying the information learned. In sustainability sessions at the University of Plymouth, undergraduate students are encouraged to lead their own practical sessions that promote active engagement in problem solving, debate and the application of research evidence in practice.

Creative thinking and problem solving are essential skills in higher education. A significant relationship has been shown to exist between creative cognitive processes and deep approaches to learning, suggesting that creativity is linked to other beneficial components of engagement (Miller and Dumford, 2016). The use of case studies and analogies is an effective way of making learning meaningful and ensuring that activities and learning are aligned (Kageyama et al, 2017).

Evaluating the impact

As part of the NurSus project, a Sustainability Attitudes in Nursing Survey was developed and used to evaluate the education sessions (Richardson et al, 2017).

Aronsson et al’s (2020) research showed a significantly greater awareness of the importance of sustainability following educational sessions, as well as an increased ability to act as change agents to enable sustainable practice when in clinical placements. We are currently carrying out further evaluations to explore the:

- Awareness and attitudes towards sustainability and climate change from the perspective of student nurses and academics;

Box 1. The potential of breastfeeding as a sustainable healthcare solution

Research suggests that up to 90% of women in the UK stop breastfeeding before they want to (Renfrew et al, 2012). There is also a lack of adequate support to overcome breastfeeding challenges that often present after hospital discharge, which leads to many women reporting feelings of guilt and failure (Brown et al, 2016). With the UK having one of the highest uses of formula per capita, and one of the lowest breastfeeding rates in the world (Joffe, 2019), I wanted to look at the impact this may be having on the environment.

Greenhouse-gas emissions in the manufacturing and transportation of infant formula in just six countries were found to be equivalent to over one million tons of waste being sent to landfill or two million acres of deforestation (Dadhich et al, 2015). Additionally, Joffe (2019) found that, in 2009, waste from formula sales accounted for 550 million cans, 86,000 tons of metal and 364,000kg of paper added to landfill. Karlsson et al (2019) concluded that breastfeeding for six months could save up to 153kg of carbon dioxide per baby.

In the UK, only 1% of babies are exclusively breastfed at six months of age yet it is also established that the benefits of breastfeeding include decreased risk of infections, obesity, asthma and diabetes (Ajetunmobi et al, 2015). It costs the NHS approximately £48m to treat only five illnesses that are related to not breastfeeding for one year, which includes breast cancer in the mother, and ear infections, necrotising enterocolitis, respiratory illnesses and gastroenteritis in the baby (Renfrew et al, 2012).

The embedding of sustainability into the curriculum led me to join the Sustainability, Health and Wellbeing Interest Group, where we can present our work and discuss sustainability in healthcare. Completing this work, feeling encouraged academically and thinking critically about change in healthcare practice was a significant contributing factor in my deciding to study for my Master’s degree.

Sarah Cottell, midwifery graduate, University of Plymouth
Clinical Practice Discussion

Box 2. The benefits of blue space for students, colleagues and people using mental health services

NHS England-commissioned analysis determined government departments spend £34bn nationally each year on dedicated mental health support and services, excluding dementia and substance use (NHS England, 2016). There is growing recognition of the importance of promoting and maintaining the mental health and wellbeing of individuals (Naci and Ioannidis, 2015) and the need for more creative, recovery-focused and sustainable approaches to mental healthcare delivery (World Health Organization, 2013).

Emerging research shows that time spent in natural blue-space environments can be of significant benefit for mental health and wellbeing (Massey et al, 2020). Blue-space environments could, therefore, be considered a creative and sustainable alternative (or adjunct) to medicalised approaches, while encouraging environmental awareness and a desire to care for the planet (Grellier et al, 2017).

For the past 17 years, I have swum in the sea on an almost daily basis and feel this has been fundamental in maintaining my wellbeing throughout significant personal challenges. During my training, I rushed down to the sea in my lunch break with a like-minded colleague. Our lecturer, Sarah Howes, began to join us and a large number of our cohort bravely leapt into the November waves or found other (warmer) ways to connect with nature during extended lunch breaks. This led to my not only becoming involved with the Sustainability, Health and Wellbeing Interest Group, but also returning to the university after graduation to inspire subsequent cohorts.

Since qualifying, I have shared my enthusiasm on an adult psychiatric acute ward, where my service improvement proposal involved engaging patients with onsite green space and, for some patients, joining a local wellbeing-in-nature group. Working in adult community mental health and now with the perinatal mental health team, I often conduct outdoor appointments, which offer unique therapeutic opportunities that clinical settings cannot. I have supported patients and colleagues as part of a clinical feasibility trial into the effects of cold-water immersion for the treatment of anxiety and depression. I have witnessed first-hand the sense of peace and connectedness that can be experienced by people in extreme distress by simply sharing an appreciation of, and for, nature.

Liz Byrt, mental health nursing graduate, University of Plymouth

● Impact of nature immersion as a reflective wellbeing strategy in nurse education.

One of the most powerful ways to appraise educational success at this stage is through student feedback and continued engagement beyond graduation. Once students have completed Master’s and research projects, we hope to have published evidence quantifying the impacts of their sustainability learning.

Fostering a humanistic approach that enables inclusive, collaborative and validated learning opportunities may increase learners’ knowledge and understanding of sustainable practice, environmental stewardship (Huss et al, 2020) and the therapeutic potential of nature (Jordan, 2015).

The opportunities provided at Plymouth have encouraged learners to take their first steps towards becoming change leaders and practice innovators (Huss et al, 2020). We have included three examples of our graduates’ work towards environmentally conscious and sustainable healthcare.

In the first (Box 1), Sarah Cottell, a midwifery graduate, discusses how the sustainability prize enabled her to explore the potential of breastfeeding as a sustainable healthcare solution. Sarah’s experience exemplifies how a supportive learning environment can encourage further study and promote learning for both professional colleagues and patients.

Similarly, Liz Byrt, a mental health nursing graduate, used academic learning and lived experience as a basis to explore the benefits of blue space for students, colleagues and people using mental health services (Box 2). Liz has subsequently brought her experience back to campus, providing the opportunity for academic staff and faculty to learn from her work.

Francesca Rees, a graduate midwife and sustainability prize winner, is also planning to use education and research in practice to support systemic change (Box 3).

Discussion

Despite better theoretical awareness, graduates can still find the inclusion of sustainability concepts into ‘real’ clinical practice a lonely transition. Not all clinical areas are receptive to change and they do not necessarily see the relevance to healthcare (Richardson et al, 2014). Health services and staff are under increasing strain and may struggle to justify what might be considered an additional time commitment.

Practice-based learning may provide useful upskilling for staff who have not benefited from meaningful sustainability education in their own training (Huss et al, 2020). Some staff may also be reticent to engage with the realities of climate change and the moral distress that can cause. However, NHS England and NHS Improvement’s (2021) guidance is clear that NHS organisations are required to develop Green Plans that involve all stakeholders such as clinicians, as well as estates, procurement and waste-management teams.

The examination of resources, procurement and nature-based wellbeing opportunities can be dismissed as labour intensive, but it has the potential to add value and provide financial savings as well as health benefits (Environment Agency, 2020). Greener care environments with access to nature may hasten patient recovery, support families (Ulrich et al, 2020) and improve staff wellbeing (Karanikola, 2020).

A continued failure to engage could be financially catastrophic and devastating for global communities, with an estimated 250,000 excess deaths per year between 2050 and 2060 (Royal College of Physicians, 2017). The examples from graduates included here provide hope that learning will be taken where it is needed, supporting the ambitions set out in the United Nations’ (2015) Sustainable Development Goals.

Conclusion

The inclusion of sustainability in the curriculum and the development of a community of practice via the SHWIG at the University of Plymouth has enabled an...
There is a growing argument for embedding sustainability education in clinical practice (Grose and Richardson, 2016). Worldwide material consumption has expanded rapidly, jeopardising the achievements of the United Nations’ (UN) Sustainable Development Goals (SDGs). The NHS is in a prime position, as the UK’s largest employer, to lead the way and act as a testbed for organisational change (Naylor and Appleby, 2013). I believe that education for health professionals, which is built with SDG 12 (sustainable consumption and production) in mind, could help foster innovative future practice. Richardson et al. (2014) found strong evidence that interactive workshops linking the use of plastics to the extraction of fossil fuels can change attitudes to waste management. I am doing a mixed-methods research project to bring sustainable consumption and production to the centre of discussion among communities of practice. Design solutions in the life-cycle management approach to plastics can encourage collection, reuse, recycling and end-of-life management, potentially reducing global marine pollution (UN, 2018).

The carbon footprint of the NHS is shaped as much by models of care and clinical behaviours as it is by the buildings and technologies used (Naylor and Appleby, 2012). Staff engagement is crucial, alongside understanding how to update existing practices and awareness of the visible environmental costs (Naylor and Appleby, 2013). Change processes can be successful when champions in the workforce help to implement everyday process-based change (Naylor and Appleby, 2013) and education interventions can encourage an interest in new ways of working (Richardson et al., 2017; 2014).

The NHS carbon footprint targets are to achieve carbon net zero by 2040, with an interim 80% reduction in carbon emissions by 2028-32 (NHS England and NHS Improvement, 2020). We can devise a way forward for sustainability education in clinical practice that develops the attitudes and beliefs for the nursing and midwifery workforce – professionally and personally – to bring ideas of how to adapt, as necessary, the delivery of clinical services as resources dwindle. This could contribute to reductions in clinical waste and NHS carbon emissions, and increase the awareness of the environmental implications of personal choices.

Francesca Rees, midwifery graduate, University of Plymouth

Box 3. Linking sustainable production and consumption with clinical practice

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Francesca Rees, midwifery graduate, University of Plymouth

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