How can a nature-based app be used in nursing?

Spending time in outdoor environments either relaxing or taking part in gentle exercise has been proven to provide physical and mental wellbeing benefits. So why aren't more of us using greenspace to improve our wellbeing? How can technology play a role in changing our behaviour and reduce the unsustainable burden of ill health on the NHS?

Mental health problems are the largest single cause of illness in the UK, accounting for 23% of the total burden of disease, and have the most impact on people of working age.[1] 11.1% of the National Health Service budget (£11.9 billion) is spent on treating mental health problems.[2] Physical ill health is also an issue causing pressure on the NHS, with many of the conditions such as obesity, hypertension and diabetes leading to costly complications. NICE guidelines note that physical inactivity costs the NHS in the UK around £1 billion per year[3].

Greenspace can reduce stress levels whilst improving both self-esteem and mood. Studies into the impact of the natural environment, have reported benefits to symptoms of mental ill health[4] such as stress reduction[5] and recovery[6], increased self-esteem and improved mood[7]. There are also restorative and therapeutic benefits from simply being in green space, as well as the benefit of taking part in activities in the natural environment[8] .

There is a strong correlation between physical and mental health in green space - with a number of studies showing that people taking part in physical exercise in green space report mental health benefits such as a reduction in stress and elevation in mood[9]. Substantial evidence exists demonstrating that living near to good quality greenspace can have a positive impact on the amount of physical activity undertaken[10],[11] and this in term effects morbidity[12] including reducing the risk of

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heart disease[13]. Greenspace is also thought to provide more than just opportunities for exercise,[14] a government publication found that physical activity when carried out regularly could prevent over 20 health conditions[15] and in terms of the type of environment, both urban and countryside greenspaces are thought to improve physical and mental wellbeing.[16] So, with all these benefits we should be spending more time in greenspace to not only get better but to avoid getting ill in the first place!

The role of electronic apps in providing preventative healthcare and other medical purposes has increased over the years and its potential role in creating behaviour change has been identified[1718]. The NHS has recognised the value of apps in healthcare and has responded by developiong NHS Digital's app platform which promotes NHS approved apps[19]. So far, there has been very little research into the use of electronic apps to encourage people to interact with and benefit from nature The IWUN (Improved Wellbeing through Urban Nature) project run by the University of Sheffield has been looking into the value of urban nature and as part of this developed an app, in conjunction with Derby University, as a novel way of engaging with nature.

The app prompts users to notice nature when entering greenspace within the city of Sheffield. It allows users to record the 'good things in nature', rate their current location, and nature whilst noting perceived levels of biodiversity. It also recordsd users' journeys, locations and the duration of stay in urban greenspaces, thereby allowing exposure to different types of natural environments to be logged. An additional benefit of the app is that it encourages the user to take time to notice and enjoy local nature, following many of the principles recommended in mindfulness.

Results from the research project demonstrated that users of the app found a positive improvement to their mental wellbeing. Of the 582 adults who used the app in the IWUN study, 148 were classed as clinical cases (according to the ReQoL). Analysis found that there were sustained improvements to mental wellbeing a month after using the app - measured by both the Recovering Quality of life scale (ReQoL[20]). These statistically significant improvements were explained by improvements in nature connectedness and Positive Affect. The control group recorded their reactions to the surrounding environment in built spaces. The results from analysis of the app data demonstrate that noticing the good things in urban nature matters as it brings improvements to mental health, and that biodiversity is also important to users' sense of wellbeing. These results point towards the beneficial impact of urban greenspaces and indicate that the app is a useful way of measuring this. This is

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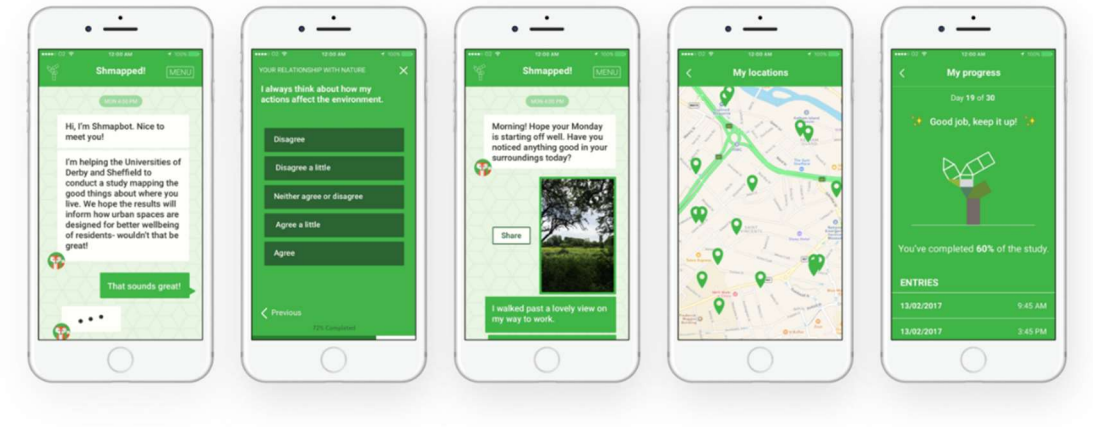
encouraging for health practitioners looking to recommend apps as ways to improve lifestyle behaviours.



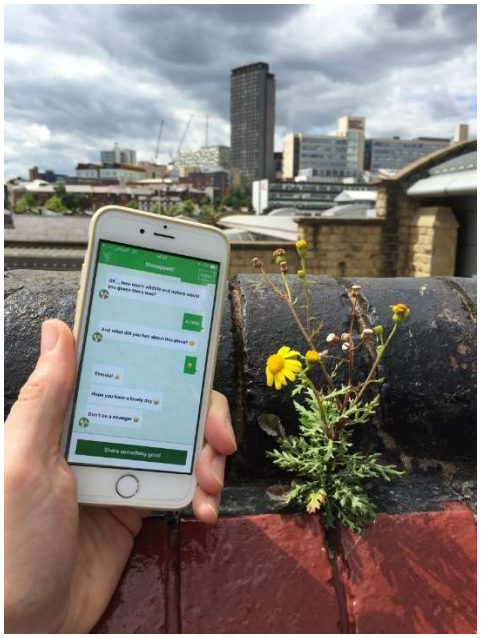


Figure 1: Some of the images presented to the user of the shmapped app.

So, what is its relevance to nursing and how can it best be used? There is plenty of evidence that greenspace improves both mental and physical wellbeing but not enough people are able to utilise this resource. The use of apps could play a role in changing behaviour and providing an incentive to take part in activities to improve wellbeing. It has the benefit of being free to use and is available at any time allowing the user to exercise or rest in green space independently and at a time that suits them. The app could also add value when it is used within specific health-based interventions such as health walks and gardening groups, providing a novel way in which to enjoy an activity.

The wider implications for nurses is that apps could be used more to promote independent care and better lifestyle behaviour. A nature-based app for dementia patients, for example, could potentially encourage and remind the patient to use greenspace as part of their programme of care with their carer.

There are huge pressures on our NHS as a result of poor physical and mental wellbeing. Strong evidence shows that greenspace can bring benefits to our health and wellbeing. There is a role that apps can play in encouraging individuals to get outside and enjoy nature, either independently or as part of a group, and notice biodiversity within their local greenspace .