Mental Health and Access to Nature

A Global Action Plan Briefing Paper

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OVERVIEW

Introduction

Research has pointed to the idea that spending time in nature can have positive effects on mental health. The aim of this paper is to explore the benefits of spending time in nature[1] and how to best implement practices that promote benefits in modern-day urban life.

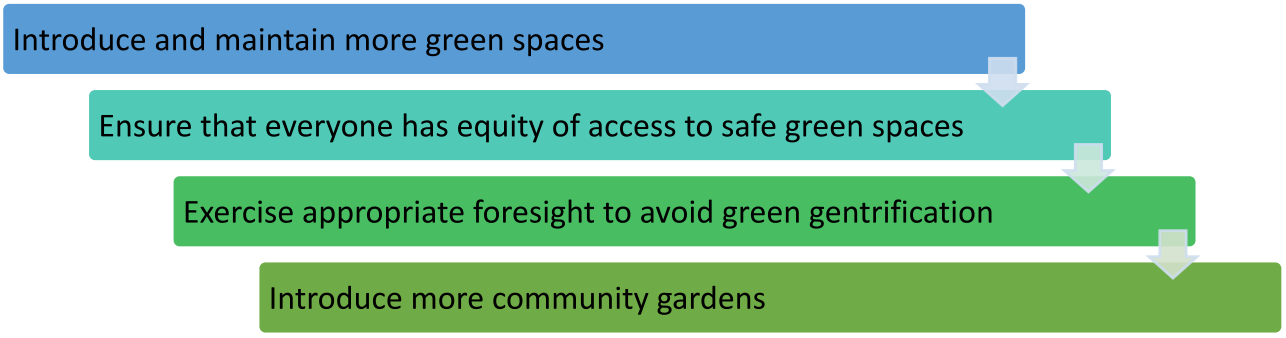
Experts across public health and health economics have found empirical evidence on the role of contact with nature and the environment as a general health promoter, including mental health (Bratman et al., 2019). With that said, there is a distinct lack of Irish data regarding the relationship between nature and mental health – and herein lies the knowledge gap. It is hoped that this paper can point to why we should consider the impacts of nature on mental health in an Irish context.

From research conducted elsewhere, we know that:

1. There is a clear positive relationship between access to nature and mental health.
2. The mental health of a population can be affected by people's proximity to green or blue space.
3. One of the largest contributors to the rise of mental health issues in recent decades has been urbanisation. Studies show that people who live in cities have a generally higher level of psychological stress compared to those living in rural areas.
4. Access to these green spaces is not equally distributed; access tends to be lower for minority or low-income populations.
5. One of the most frequently cited impacts of nature on mental health is stress reduction.
6. There is a positive correlation between better physical health and living proximity to green space. Living in an area with access to green space can help to prevent cardiovascular disease, obesity, asthma hospitalisation, mental stress, and overall mortality in adults.
7. There are many ways in which we can incorporate nature into our daily routines and activities. Community gardens have been cited as ideal spaces to facilitate social engagement, social and therapeutic horticulture, ecotherapy, and more.

[1] In line with the approach taken by the Mental Health Foundation in the UK, we define 'Nature' as green spaces such as parks, woodland, forests or community gardens, as well as blue spaces like rivers, wetlands, beaches, or canals. We also include trees on an urban street, private gardens, verges and even indoor plants or window boxes in our definition.

Summary of recommended actions



RESEARCH PROCESS

The aim of this paper is to address two central research questions. First, we consider the benefits associated with spending time in nature and its impact on mental health. Second, we look into what actions can be undertaken in order to reap these benefits.

While there is a large body of research relating to the link between nature and mental health, there are very few Irish studies conducted on the topic. The lack of studies in this context means that the data could not be directly used to make specific recommendations for Ireland. There are two recent studies, however, that speak to a relevant theme - the skewed relationship between socio-economic demographics and access to green spaces in Ireland. This small insight into the Irish context is addressed because it resonates with the broader findings discussed later in the next section, and informs the recommendations for further action.

The majority of studies discussed were conducted in western nations. This means that there is a clear western skew on the data, resulting in recommendations that are geared to a more westernised viewpoint.

The selection process for this literature review involved a number of factors. The studies were chosen on the basis of how recent they were published- the majority of research referenced was conducted within the last ten years. Material was selected on the basis of how relevant it was in relation to Ireland. Due to the lack of Irish-specific studies, it was important to select studies from countries that are geographically similar to Ireland.

LITERATURE REVIEW

The Irish context

In 2022, Dublin City University published a report on environmental justice in Ireland. The report investigated "the ways in which different groups and communities experience environmental burdens such as climate change, pollution, or energy poverty, or enjoy environmental benefits such as access to green space and fresh, affordable food" (O'Neill et al., 2022, 5). The report also cited the problematic gap in research in the Irish context, noting that there has been little empirical interest in the relationship between contact with nature and health and well-being (O'Neill et al., 2022, 38); and that there was no "national study that correlates data on environmental quality for a range of indicators with spatial representations of disadvantage or marginalisation" (O'Neill et al., 2022, 5).

However, the report referenced two local Irish studies that can speak to environmental (in)justice in Ireland. There was a tree-cover mapping exercise undertaken in Dublin between 2019 and 2020, which "showed that affluent areas of the city had significantly more tree cover, and that while places such as Ballsbridge, Dublin 4 had more trees than residents, the north inner city generally has more than 10 residents per tree" (O'Neill et al., 2022, 38, quoting Clavin et al., 2021)

The second study was undertaken shortly after, during the Covid-19 pandemic, and found that "those in the lowest income group spent the lowest average number of days in green/blue spaces" (O'Neill, 2022, 38). The study also revealed some notable nuances on the perception of access to green spaces: "Those living in isolated rural areas felt such spaces were not within an easy walking distance, while urban dwellers felt they were" (O'Neill, 2022, 38). Interestingly, a lack of access to green/blue spaces was not the predominant barrier to interaction - "local factors such as perceptions of safety, service provision and cleanliness" (O'Neill, 2022, 38) strongly influenced the "perceived adequacy and usability of such spaces" (O'Neill, 2022, 38 quoting Barlow et al., 2021)

Mental health

In order to address the scope of the research question, it is important that the key terms are identified clearly. Mental health can be identified as a "state of well-being in which an individual realises his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community" (World Health Organisation, 2018).[2]

In recent decades, there has been a clear increase in the global incidence of various mental health conditions such as depression increasing as much as 50% worldwide

[2] The Irish government in its policy framework for the continued development of mental health services in Ireland ('Sharing the Vision - A Mental Health Policy for Everyone', 2020) recognises the importance of a whole of government approach to addressing mental health. The framework acknowledges that mental health is not just a health issue but also a social, economic and environmental issue.

over the last three decades (Gallegos-Riofrío et al. 2022:1). According to Bratman et al. (2019), there are various contributing factors on an individual's mental health, including: the environment, the economy, genetics, epigenetics, as well as behavioural, psychological and physiological dispositions.

There has been a growing body of studies surrounding the link between mental health and connection to nature, which demonstrates a clear positive relationship between access to nature and mental health (Baur, 2022). Both longitudinal and cross-sectional research has concluded that the mental health of a population can be affected by one's proximity to green or blue space (Bratman et al., 2019).

Urbanisation

One of the largest contributors to the clear rise in mental health issues in recent decades has been urbanisation. Urban living is a relatively new phenomenon on the evolutionary timescale; humans as a species have existed for at least 300,000 years, but the oldest cities are some 6,000 years old (Dempsey et al., 2018). As noted by Karl Evans, an ecologist at the University of Sheffield, there is always going to be a trade-off, "because cities occupy land that could be wild" (Douglas and Douglas, 2021).

The more recent mass movement of people moving into cities and changes to our working patterns over recent decades have resulted in people gradually spending less time in nature, instead remaining inside "performing sedentary activities" (Bratman et al., 2019:3). These trends, combined with other urban stressors such as noise and air pollution, have led to a situation where people who live in cities have a generally higher level of psychological stress compared to those living in rural areas. This is concerning at present, but even more so when we consider that the portion of the population living in urban areas is expected to rise to 70% by 2050 (Cooley et al., 2020).

In the case of depression specifically, urban living has had a significant impact, according to Van Den Bosch and Meyer-Lindenberg (2019:248). The authors found that the incidence of depression was higher amongst city dwellers and those born in urban areas, in comparison to more rural areas. However, it is important to note that some of this disparity may be in connection to the lack of diagnoses in rural areas.

People living in urban areas with poor access to nature and green spaces may face unique challenges when it comes to their physical health, too (Fairbress and Washbourne, 2019). Reese et al. (2014:63) drew on a dynamic illustrated by numerous scholars - as the human race continues to pollute and industrialise the Earth, it will continue to harm the physical and mental health of its inhabitants. White et al. (2019) add to this by stating that reducing air and noise pollution would promote better health outcomes.

In addition to impacts on health and well-being, in communities where there is a lack of green spaces there is a risk that 'green gentrification' may occur. Green gentrification, as described by Grinspan et al. (2020), is the process by which "new environmental amenities fuel socio-economic exclusion and cultural alienation by transforming the neighbourhood without addressing the needs and preferences of current residents."

As these issues accumulate, there is considerable concern regarding the inequalities that surround accessing nature and green spaces in cities.

Access to green spaces and Demographics

Access to green spaces has been widely acknowledged as an important neighbourhood amenity. However, a disparity exists in who has ease of access to these green spaces, particularly for high minority or low-income populations (Wen et al., 2014).

Lower-income areas with less green space also tend to shoulder much of the burden of preventable diseases (Astell-Burt et al., 2019:9). In 2010, the Commission for Architecture and the Built Environment (CABE) (2010:4) noted that "the relationship between low income and poor health follows a social gradient." CABE proposed that providing good-quality green space would considerably help to alleviate these issues. Similarly, Astell-Burt et al. (2014:1) argue that the availability of green space could be seen as an important preventative health resource. White et al. (2016) studied the difference between residential proximity and exposure to green space. They found that spending less than 120 minutes in nature throughout the week is not sufficient for a significant increase in 'good' health and 'high' well being; however, spending over 120 minutes is. In other words, 120 minutes in nature per week represents a determining threshold for improving an individual's physical and mental health.

The access disparity can be seen in Europe on a large scale. Cities in the north and west of Europe have more total green space than in southern and eastern regions. With that said, accessing green spaces within individual spaces will differ, depending on an individual's socioeconomic status (European Environment Agency, 2022).

The influence of - and access to - nature can affect different demographics in a number of ways. It is said that men tend to benefit from nature the most in early adulthood, whereas for women it is seen to have the greatest benefit from their mid-40s onwards. Additionally, access to green spaces can have positive impacts on pregnancy. Pregnant people in the greener areas are 18-23% less likely to report depressive symptoms than those with less access to green space (McEachan et al., 2016:253).

Accessing green space during early development years has been linked to many health and mental health benefits such as improved memory, improved ability to

learn, stress reduction and enhanced attentiveness. There are many social aspects linked to green spaces for children through play and engaging in social cohesion. Spending time in nature also provides many learning opportunities for children by mentally and physically helping them with their motor skills. In contrast, children lacking access and exposure to green spaces tend to have poorer eyesight, more stress , and are more likely to experience issues with obesity (European Environment Agency 2022:7).

For the elderly population, connectedness with nature can help counteract physical deterioration by spending time in nature either relaxing, socialising, or engaging in physical activity (Cervinka et al., 2011:386).

While ensuring access and proximity to green spaces is important, the physical layout and infrastructure of a green space is also key. As noted by Grinspan et al (2020) 'the type, density and maintenance of vegetation affect how safe park users feel, which varies by gender, age, race and socioeconomic status'.

These barriers of access to green space exist for a variety of reasons, with the main one being safety. If green space is not seen as a safe place (e.g. an overgrown park or without adequate lighting), it may be seen as undesirable and attract people wishing to engage in anti-social behaviour. Thirty-seven per cent of people reported they would use urban green space more if safety measures were improved. So, improving existing green spaces and reducing the barriers of access to them for the whole community is incredibly important (CABE 2010:36). This highlights a major problem wherein some areas have adequate green spaces however they remain unused because of their upkeep or lack thereof.

Benefits

Research points to an array of positive effects that nature can have on mental health as well as overall health. Nature is said to have healing properties for well-being. Cervinka et al. (2011:381) note that people tend to be in better moods whilst spending time in nature in comparison to when they spend time indoors.

One of the most frequently cited impacts of nature on mental health is stress reduction. The psychoevolutionary theory (also referred to as the stress-reduction theory) finds a link between access to nature and a reduction in stress levels. This is such that “humans evolved in natural settings, they are genetically predisposed to respond favourably to green-space” (Mennis et al., 2018:2). A study which included 10,000 people in England found lower stress levels amongst those living in proximity to greenspace. Walking through nature has also been linked to having a better memory span (Mennis et al., 2018:3).

Time spent in nature can also have a positive impact on feelings of loneliness. A study assessed if the environment affects loneliness, by asking people to input their reflections into a designated app during time spent in nature. It found that feelings of overcrowding increased loneliness by an average of 39%. In contrast, when

people were able to see trees or the sky feelings of loneliness fell by 28% (Carrington, 2021). In addition, green spaces provide opportunities to engage in physical and social activities, allowing people to manage the pressures of modern life (Jiang et al., 2014:26).

As discussed, there is a positive correlation between better physical health and the proximity within which one lives to green space. Living in an area with access to green space can help to prevent cardiovascular disease, obesity, asthma hospitalisation, mental stress and overall mortality in adults. In children, it can help to prevent obesity and myopia (White et al., 2019).

Cooley et al. (2020:1) refer to the idea that spending time in nature enables people to engage in physical activity "to sense, think, feel and act as interdependent beings, interconnected within the whole of community life." Elsewhere, vegetation in urban areas can aid physical health by absorbing pollutants from vehicles, harmful airborne particulates, and other industries (Douglas and Douglas, 2021). This is noteworthy, since both chemical and noise pollution can have a neurobiological impact (Van Den Bosch and Meyer-Lindenberg 2019:240).

Activities and communities

There are many ways in which we can incorporate nature into our daily routines and activities. While we will not discuss an exhaustive list of examples, for illustrative purposes we outline some activities that can help make up the recommended 120 minutes per week- which is the indicative threshold to gain health and well-being benefits from time spent in nature (White et al., 2019:7).

- Mental health practitioners recognise the impact of nature, so much so, that many have started 'challenging convention' and deciding to relocate talking therapies to the outdoors. Therapy in an outdoor space may also be referred to as **ecotherapy**. Of course, the use of outdoor therapy will differ depending

on the individual and the type of therapy needed. Nature-based therapy is viewed as low cost and its subsequent implementation being of no extra cost to the medical field (Trøstrup et al., 2019:1695). Different therapies which can be conducted outdoors can range from simply being in nature while speaking to “behavioural analysis, relationship building, metaphor, narrative therapy, role play, modelling, and stabilisation” (Cooley et al., 2020:1). There are also other types of therapy which can be conducted in an outdoor setting, including horticulture therapy, wilderness-based counselling and nature therapy (Reese et al., 2014).

- **Gardening** is one of the more obvious examples of activity in nature. Gardening as an activity involves medium-intensity and repetitive hands-on activity whilst also allowing for mindfulness in nature. Compared with other activities such as reading, gardening has added benefits of stress reduction. This is due to the fact that it is a “combination of exercise and contact with nature”. It has also been reported that gardening and reading can lead to lower cortisol levels; decreases in these levels were found significantly greater amongst those who engaged in gardening (Van Den Berg and Custers, 2011:3-4).

- In a similar vein to gardening, **social and therapeutic horticulture** is another way of improving the effectiveness of nature. Social and therapeutic horticulture “is the process of using plants and gardens to improve physical and mental health, as well as communication and thinking skills” (Thrive, 2022). These benefits are further enhanced if the activity can be provided for in a shared green space or community garden.

- **Community gardens**: Cultivating plants and vegetables in cities has many benefits, both for the participants and the wider community. The European Environment Agency (2018) cited number of positive impacts of urban horticulture:

    - Climate change: includes carbon sequestration, plant adaptation and environment sustainability.
    - Food security: includes food safety, food justice.
    - Biodiversity: provides habitat to a range of flora and fauna species.
    - Agricultural intensification: provides sustainable and intensified agricultural approaches.
    - Resource efficiency: saves water, energy, soil and other natural resources.
    - Land management: requires less space, avoids soil erosion and soil degradation.
    - Public health: provides nutrition, organic, hygienic and sufficient food.
    - Social cohesion: promotes community involvement and participation.
    - Economic growth: provides jobs, opportunity, promotes urban family farming business.

- Urban renewal and regeneration: promotes edible urban landscape and green spaces.

Community gardens can be defined by their “shared nature; gardeners work collectively to manage a garden for a shared benefit” (Lovell et al., 2014:1). Community gardens can come in various forms; they can be one large community or a group of individual plots and they can grow a wide array of plant life or crops. A fundamental aspect to running and maintaining a community garden is that it is a shared endeavour. Frequent visitors to community gardens see them as a place for social interactions as well as private gardens and the ability to connect with nature at a much deeper level” (Baur, 2022).

Global Action Plan’s community gardens

Global Action Plan operates two community gardens in the Dublin region: the GLAS Ballymun garden, which is supported by Dublin City Council and St. Pappin’s parish, and the GLAS @ TU Dublin garden in Blanchardstown, which is supported by Fingal County Council and TU Dublin.

Both gardens are based on a model of social inclusion, community outreach and environmental education. The gardens are accessible to people of all ages, backgrounds and abilities, and activities are tailored to the needs of the individuals attending and informed by GAP’s experience of behaviour change programmes.

Global Action Plan’s community gardens are part of our programme of community activation and outdoor education, which also includes our ‘Park Stewardship’ and ‘Youth Gardening’ programmes for schools and our ‘Greening Neighbourhoods’ and ‘Nature Explorer’ activities with community groups.

CONCLUSIONS

This literature review provides an outline to the benefits of time spent in nature and its positive impact on mental health. It also highlights the inequity associated with accessing greenspaces, and how nature impacts different demographics. The review provides some insight to governments and NGOs on suitable ways to implement green spaces in urban areas.

The ideal city, as described by Douglas and Douglas (2021), is compact, walkable, and includes natural elements such as high-quality green spaces. It is clear that there are different levels of benefits of time spent in nature for different people at different stages of their lives. Therefore, it is paramount that access to green spaces is equal for everyone and is designed with the people that face the most barriers in mind. Introducing accessible and equitable opportunities to access green spaces into urban areas would be particularly beneficial for those who are most influenced by nature and who currently experience barriers to avail of these benefits.

Urbanisation has had a major impact on how individuals access green spaces. Planners and elected representatives should maximise green spaces in these parts, especially in socioeconomically disadvantaged areas. Priority needs to be given to these areas in light of the fact that residents are exposed to a greater risk of worse physical health and mental health issues. In this case, targeted action should be implemented to reduce these inequalities and maximise the benefits associated with spending time in nature.

Community gardens and urban agriculture projects can be extremely beneficial, both to the urban environment and to the health and wellbeing of community members. Community gardens can help increase the availability of nutritious foods, reduce food miles, enhance local biodiversity and promote sustainable agriculture techniques.

What's more, community gardens that combine their focus on food production with social inclusion objectives - e.g. through social horticulture and community outreach programmes - further accentuate their positive impact, by fostering or strengthening community ties, empowering residents, building skills and enhancing participants' pride of place.

RECOMMENDATIONS FOR FURTHER ACTION:

Introduce and maintain more green urban spaces

- It is proven that access to green spaces has a positive impact on mental health, physical health, and overall well being.

Ensure that everyone has equity of access to safe green spaces

- It is important to acknowledge that there are groups who face barriers accessing green spaces in their communities, and that there is a correlation between these groups' socio-economic status and their level of access.
- Planners and policy makers should collaborate and consult with groups who have the lived experience of these barriers in order to ensure green spaces can be accessed fairly and equitably by all.

Exercise appropriate foresight to avoid green gentrification

- It is of paramount importance for policymakers and planners to exercise appropriate foresight to avoid green gentrification. Failing to do so will drive up property values, which pushes residents with lower incomes out of the area.
- This is especially important due to the fact that nature has different impacts on different demographics of people.

Promote community gardens and social horticulture initiatives

- Community gardens can have many physical and practical benefits, such as providing healthy food options and medium-intensity exercise for the public.
- Individuals can benefit from time spent in nature privately on their own, or engage with group activities.
- Community gardens can facilitate social and therapeutic horticulture and other holistic activities such as ecotherapy.

Global Action Plan's Green Living and Sustainability Community Gardens (GLAS) in Dublin have been shown to have had many beneficial effects for individuals and groups visiting and working in the garden.

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