

## Chapter 5

# Enter the Virtual Forest: Exploring the Benefits of Forest Therapy in a Digital World

**Ana Paula Soutelo**

*School of Health, Polytechnic of Porto, Portugal*


**Ana Rita Sousa**

*School of Health, Polytechnic of Porto, Portugal*


**Maria Luís Monteiro**

*School of Health, Polytechnic of Porto, Portugal*

**Raquel Simões de Almeida**

 <https://orcid.org/0000-0003-4703-1712>  
*CIR, ESS, Polytechnic of Porto, Portugal*

**Vitor Simões-Silva**

 <https://orcid.org/0000-0003-2831-9729>  
*CIR, School of Health, Polytechnic of Porto,  
Portugal*

**Paula Portugal**

*CIR, School of Health, Polytechnic of Porto, Portugal*

### ABSTRACT

*One of the many challenges of this urbanization is significantly reflected in the distribution of urban green spaces, which may still not meet the needs of all inhabitants and preclude the many benefits that urban green spaces bring to mental health. From this perspective, Shinrin-Yoku emerged a traditional Japanese practice known as forest therapy (FT) or forest bathing (FB), as a natural health treatment. Using virtual reality, in addition, makes it possible to reproduce scenarios or environments that, in certain contexts, it would be almost impossible to recreate in real life. Thus, VR can provide opportunities and allow many more people to benefit from the best therapies and positive outcomes. It's important to note that the research on this union is still in its early stages, however, exploring this field represents, in many ways, a unique opportunity for healthcare, and would reach a wider population, providing the best possible therapy for everyone who could benefit from it.*

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## INTRODUCTION

Depending on circumstances, preferences, or even needs, people may live alone or in groups throughout their lives. However, as social creatures, they usually have the predisposition to seek out social relationships, which leads to forming bonds, grouping partners, integrating into communities, or even developing them. This is how societies are created, whether rural or urban (Szabo, 2018).

As a result, urbanization has seen unprecedented growth, with an estimated 55% of the world's population now living in cities, and this is expected to rise to 68.6% by 2050 (Csomós et al., 2020; Lee & Maheswaran, 2011). According to this growing trend, it is expected that by 2030 there will be around 41 megacities, each with a population of around 10 million, as a result of the creation and development of cities (Okkels et al., 2018; Szabo, 2018).

As a result of this increase in population density, (over)urbanization poses major challenges in terms of exacerbating social inequalities, limiting access to public services and relatively neglecting environmental issues, which together threaten the quality of life in cities, including the risk factor of mental health (Csomós et al., 2020; Okkels et al., 2018). One of the many challenges of this (over)urbanization is significantly reflected in the distribution of urban green spaces, which may still not meet the needs of all inhabitants. Such would manifest itself in inequitable services to the population regardless of socio-economic status (Cheng et al., 2021).

Urban green spaces can provide multiple human health benefits by promoting increased physical activity (Bell et al., 2019; Chiabai et al., 2020), improving air quality (García de Jalón et al., 2019), reducing noise pollution (Vivanco-Hidalgo et al., 2019), and protecting against high temperatures and heavy rainfall (Li et al., 2019). In addition to physical health, urban green spaces contribute to the well-being and mental health of the population by increasing recreational activities (Foster et al., 2008), reducing stress and stimulating social contacts, and increasing social cohesion (García de Jalón et al., 2020b).

Recent studies suggest that urban green spaces provide significant improvements in residents' quality of life, including that residents of greener neighborhoods had significant improvements in mental health compared to residents of less green areas, such as a lower risk of depression symptoms, psychological distress, and sleep quality (Astell-Burt et al., 2013; Cheng et al., 2021; Gascon et al., 2015; Wood et al., 2017). According to current literature, proximity to green spaces not only has an effect on the above-mentioned factors, but also reduces the incidence of stroke, hypertension, dyslipidemia, asthma, and coronary heart disease (Barboza et al., 2021; Taylor et al., 2022; Twohig-Bennett & Jones, 2018).

Improving access to these spaces to promote healthy lifestyles also begins the search for physical and mental well-being associated with these spaces. Some studies on nature and mental health focus on woods, forests, scrubland, and gardens. However, in modern cities and towns, parks and open green spaces are among the most widely available forms of recreation. (Astell-Burt et al., 2013; García de Jalón et al., 2020a; Sugiyama et al., 2016; Wood et al., 2017).

Preference for each of the different environmental categories, such as vegetation and the size and connectivity of green spaces, is a topic that remains to be explored, but associations suggesting health benefits were more consistent in populations with more tree canopy as opposed to grassland (Nguyen et al., 2021). Even the inclusion of nature indoors has been shown to benefit health and well-being. For example, Ulrich's seminal study (Ulrich, 1984) demonstrated the benefits of views of nature on post-surgery recovery (Taylor et al., 2022).

In summary, the urbanization trend of the twenty-first century poses an increasing challenge to mental health. Epidemiological studies have shown that mental health problems often accumulate in urban

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