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RECETAS

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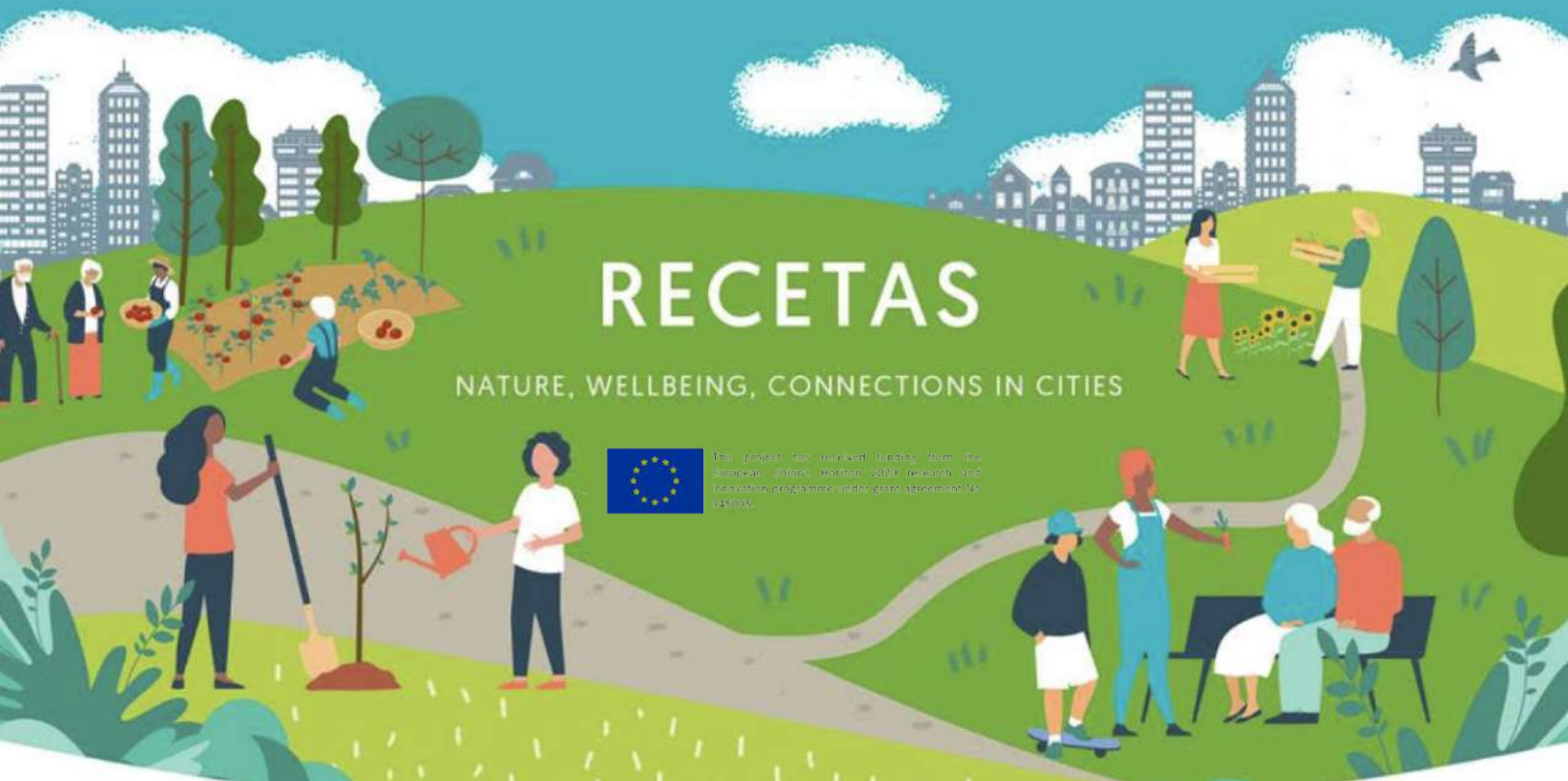
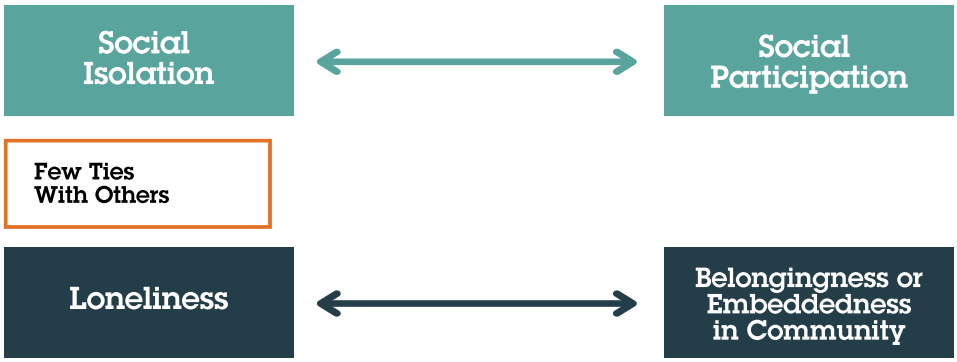
Literature Scan and Network Understanding of NBSP Practices, NBS, and Related Policy

Prepared August, 2021



Introduction

There are three dimensions of loneliness: social (relational), emotional loneliness (intimacy), and collective ("active networks"). While loneliness and social isolation are different concepts, they are often correlated with each other and those experiencing loneliness may also experience worse health, serious health conditions, and higher levels of depression and anxiety. Studies have demonstrated that those reporting worse health are more likely to be lonely, with one study finding that 43% reporting bad or very bad health were also often or always lonely (Pyle and Evans, 2018). Serious health conditions reported include mortality, dementia, heart disease, stroke, and increased health care use (Qian, et al. 2020).



Overall, there is robust evidence that social ties are vital to human health and wellbeing (Kuo, 2015) and that loneliness can compromise physical and psychological health (Holt-Lunstad, 2017). Creating strong partnerships to connect people with the appropriate resources will encourage upstream solutions and offer avenues to promote social connectedness.

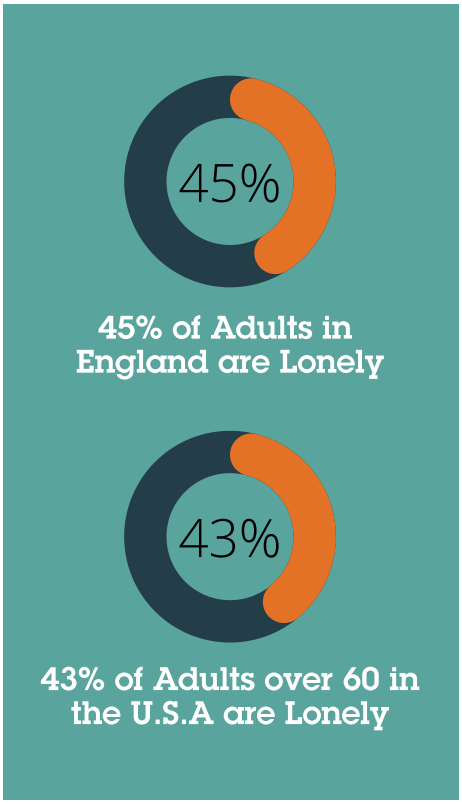
One solution is access to nature and social participation, which requires partnerships among diverse actors (e.g., care professionals, urban planners, non-profit organizations, and policy makers). Numerous studies have cited the benefits of nature and outdoor activities on well-being.

Nature's restorative properties have stress-reducing effects and improve mental and physical health (Frumkin et al., 2017). Loneliness is a modifiable health condition and the more we understand about the related, but distinct concepts, of social isolation and loneliness the better prepared we will be to solve this complex, multi-faceted problem.

Global perspectives on loneliness

We are beginning to recognize the extent of loneliness and social isolation across the world. Around 45% of adults in England indicated that they were occasionally, sometimes, or often lonely (Loneliness Research, 2021). In the United States, a significant portion of adults, more than a third over age 45 and 43% of those 60 and older, consider themselves lonely (Wilson, et al., 2010).

A large online survey of U.S. adults found that three in five Americans reported feeling lonely in 2019 compared to over half of the respondents in 2018 (Cigna, 2020). Recent British statistics note that 200,000 citizens do not communicate with friends or relatives even once per month, while the country became one of the first in the UK and Europe to name a "Minister of Loneliness" (Noack, 2018).



Loneliness in the public health context

People need relationships to provide warmth, intimacy, and acknowledgement of themselves. However, reports of a loneliness epidemic in the US are growing (Cigna, 2020). Since the 1980s, the percentage of Americans who claim to be lonely has risen from 20 to 40% (Khullar, 2016). Loneliness is connected to low self-worth, self-esteem, and judgement of self and others. Also, loneliness is a known risk factor for substance abuse, depression, cardiovascular disease and premature mortality (Holt-Lunstad, 2017). Exact prevalence data for loneliness can be challenging to collect due to the multi-factorial nature of social connection. Researchers use proxy measures of living alone, divorce rates, discordant marriage rates, community engagement and volunteerism rates, sizes of social networks for example, to shape our understanding of loneliness.

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Studies have demonstrated the association with chronic diseases such as cardiovascular disease, diabetes, cerebrovascular disease, and as well as anxiety, depression, cognitive decline (Hawkley and Cacioppo, 2010; Luanaigh and Lawlor, 2008) and mental well-being (Holt-Lunstad, at al., 2017).

Studies show that social isolation among adults ranges from 10% to 43% while being particularly common among older adults (Nicholson, at al., 2010; Nicholson, 2012; Social isolation in older adults, 2020). Social isolation has been defined in various ways in the literature. There is some agreement that social isolation refers to a lack of social integration (Cattan et al., 2005). This however implies that all forms of social contact hold the same value (Dickens et al., 2011).

Social support instead can include both structural and functional support. Structural social support is an objective valuation of the quantity and frequency of social contacts. Functional social support is a subjective assessment of the quality of the emotional, instrumental, or informational support provided. Socially isolated people lack both types (Broadhead et al., 1989). Loneliness relates to the feelings that a person has about this disparity in desired and actual social support (Dickens et al., 2011). It is possible for an individual to not feel lonely despite low levels of social contact (Tanskanen & Anttila, 2016).

As we recognize it as an issue across general populations, there are several groups at higher risk for loneliness and social isolation. These include older adults, young adults, those identifying as LGBTQIA, those in rural communities, and veterans (Social isolation in older adults, 2020; Cuesta-Lozano, et al., 2020; Beam, et al, 2020; Leavell, et al., 2019; Teo et al., 2018; Mereish, et al., 2015; Rainer and Martin, 2015). While there is nothing inherent about these populations that put them at higher risk, they often share common factors that are associated with loneliness and social isolation. For instance, older adults are more likely to live alone, have experienced the loss of friends and family, or live with chronic illnesses and sensory impairments (Social isolation in older adults, 2020). Other factors that can impact mental health, loneliness, and social isolation include discrimination and barriers to health care (Liu et al., 2014; Wong, et al., 2003).

Loneliness and COVID-19

In light of the COVID pandemic, now more than ever we must confront the fact that our health systems are beyond capacity and for many health concerns, such as loneliness, depression, anxiety, and post-traumatic stress disorder, the solutions can grow from our communities with a salutogenic approach rather than from the health care institutions that follow a pathogenesis perspective. Moreover, COVID-19 and related confinement and isolation measures have placed the issues of loneliness and social isolation at the forefront of communities all over the world. For many people, mandated confinement and the policy response requiring social distancing have meant deep loneliness.

The global response to COVID 19 shows concretely how important social contacts are for all of us and how deeply they are intertwined with mental health. In addition, as people have been confined to their homes, the stay-at-home mandate has revealed the importance of being outdoors and access to nature. People are appreciating and seeking out nature in new ways. Access to local nature in socially supported ways is crucial and access should not be precluded because of one's gender, race, ethnicity, age, culture, geography or other factors (A union of equality, 2020).

In addition, the COVID-19 pandemic and the prevention behaviors associated with it, i.e. social distancing, quarantining, and stay-at-home mandates, mean that more people are at risk for loneliness and social isolation. Communities are recognizing the impact of this type of isolation on our mental health and looking for ways to address these risks. During this time, research has been conducted to understand the impact of these confinement and isolation measures have impacted loneliness and mental health.

In China, the rates of anxiety have ranged from 20% to 32%.15 Odriozola-González and colleagues have reported high rates of anxiety and depression in Spain during the COVID-19 pandemic lockdown (Odriozola-Gonzalez, et al., 2020). Young women, lower income groups, and those living alone have been observed to have higher rates of depression and anxiety during the pandemic (McQuaid, et al., 2021).

What can we do about it?

In light of this growing public health concern, there are studies and scientific reviews recognizing that psychological wellbeing is derived from contact with nature and outdoor activity. The primary avenues in the literature connecting nature to improved mental and physical health is through nature's restorative and stress-reducing qualities, its capacity to focus our attention, and our biological tendency to prefer natural settings (Frumkin et al., 2017). However, developing research suggests that stress reduction experienced outdoors may be linked to the strengthening of social bonds and relationship cultivation taking place during outdoor activities (Maas et al., 2009). Outdoor experiences may reduce feelings of loneliness by motivating social involvement and shared learning with others (Izenstark & Ebata, 2017; Leavell et al., 2019). For solo nature experiences, one study with socially isolated individuals found that having access to nature nearby within the past seven days buffered individuals from the negative effects of loneliness, perhaps by providing isolated people a way to feel more connected (Cartwright et al., 2018). Furthermore, studies have shown how the availability of green space contributes to neighborhood social cohesion and social ties between neighbors (Maas et al., 2009a).

A review of health promotion interventions for loneliness among older people found that 1:1 interventions such as home visiting and telephone counseling were mostly unable to show a reduction in loneliness (Cattan et al., 2005; Nicholson, 2012). Looking to the natural world for innovative solutions, social connectedness experienced while spending time outdoors with others is a potential pathway to reduce stress (Razani et al., 2018). Several pioneering studies in the 1990s in an underprivileged area in Chicago found that residents with nature such as trees and lawns near their high-rise apartments were supportive than residents without adjacent green space (Kuo et al., 1998; Kweon et al., 1998)

Getting to action: RECETAS (Re-imagining Environments for Connection and Engagement: Testing Actions for Social Prescribing in Natural Spaces)

The RECETAS project aims is to devise, validate, and exploit solutions that address loneliness through Nature-Base Social Prescribing (NBSP) and engagement with nature-based solutions (NBS) and green infrastructure (GI). Nature-based social prescribing (NBSP) offers a novel socio-environmental innovation to reduce loneliness by creating the social and technological infrastructure needed to foster social and community cohesion and support. NBS can be referred to in a variety of ways, including: nature-based social prescribing, green infrastructure, nature-based solutions, community referral programs, community interventions, nature-based interventions, outdoor interventions, blue spaces, green interventions, green gyms, and outdoor-based interventions.

The overarching concept of RECETAS is that loneliness is permeating throughout society and is not sufficiently addressed by traditional health care systems (Hari, 2019). Alternatives are needed to capture people where they are at and engage them in activities that are socially organized and are connected to the natural environment. RECETAS will strengthen the much needed evidence base to develop and test interventions (Leavell, et al., 2019) that reach and engage diverse populations at risk for loneliness and who face obstacles to accessing and enjoying public space and group-based outdoor activities.

RECETAS will test NBSP in six urban areas (Barcelona, Cuenca, Helsinki, Marseille, Melbourne, and Prague) in Europe, Latin America, and Australia. NBSP will bridge the people, places, and institutions that make up strong social networks and connections to existing investments in nature-based solutions (NBS) and green infrastructure (GI) --green (e.g., parks, rooftops and gardens, wetlands) and blue (e.g., lakes, rivers, coastal habitats) spaces, which aim to attenuate the effects of pollution, extreme weather (e.g., heat), and other environmental stressors such as community violence. Including loneliness as a benefit of NBS and GI is a novel extension.

The geographic, economic, social and cultural diversity of the six different sites allow us to evaluate the challenges and strengths of the interventions and understand which elements can be replicated and in which contexts.

The six study sites include:

1. Marseille, France: Marseille residents who live in northern districts that are strongly marked by indicators of social disadvantage. This includes: people 18-25 years of age, settled immigrants and recent migrants.
2. Prague, Czech Republic: Older adults (60+) with risk of social isolation and loneliness targeted by primary health care and outpatient care; family caregivers of home dwelling vulnerable older adults and people with dementia
3. Helsinki, Finland: Older people in assisted living facilities. This population is known to suffer from loneliness even more often than those living in their own homes.
4. Cuenca, Ecuador: Older people (60+), orphans, nearby neighborhood residents who are unemployed
5. Barcelona, Spain: Adults aged 18 or older living in socio-economic deprived areas
6. Melbourne, Australia: Refugees, asylum seekers and LGBTQ+ communities

This project builds on the evidence of how nature-based interventions impact population health by exploring the role of social connection in the outdoors, specifically through the practice of nature-based social prescribing (NBSP). Social prescribing (SP) offers health care providers and social workers non-medical referral options (e.g., housing subsidies, community arts activities, walking clubs, communal gardening) that work in concert with existing treatments to support connectedness and by extension, mental wellbeing, health behaviors, and physical health (Bickerdike et al., 2017). Additional examples of NBSPs include outdoor "green gyms," (Pretty et al., 2007) "park prescriptions," (Razani et al., 2016) "Walk with a Doc," (Walk with a Doc, n.d.) wilderness adventures (Anderson et al., 2018) and farmers market referrals (Trapl et al., 2017).

These social prescriptions with green emphasis connect nature-based solutions to positive psychosocial health outcomes. Evidence supporting a positive relationship between exposure to natural environments and prosocial behavior suggests that NBSPs may help cultivate social connectedness (Weinstein et al., 2009). NBSPs motivate contact with nature and others, therefore mediating the relationship between human health and the natural world. Such connections between healthcare providers and outdoor social programs represent a holistic strategy for confronting persistent health inequities, addressing unmet psychosocial needs, and reducing health care office visits (Chatterjee et al., 2018).

Understanding patterns and trends

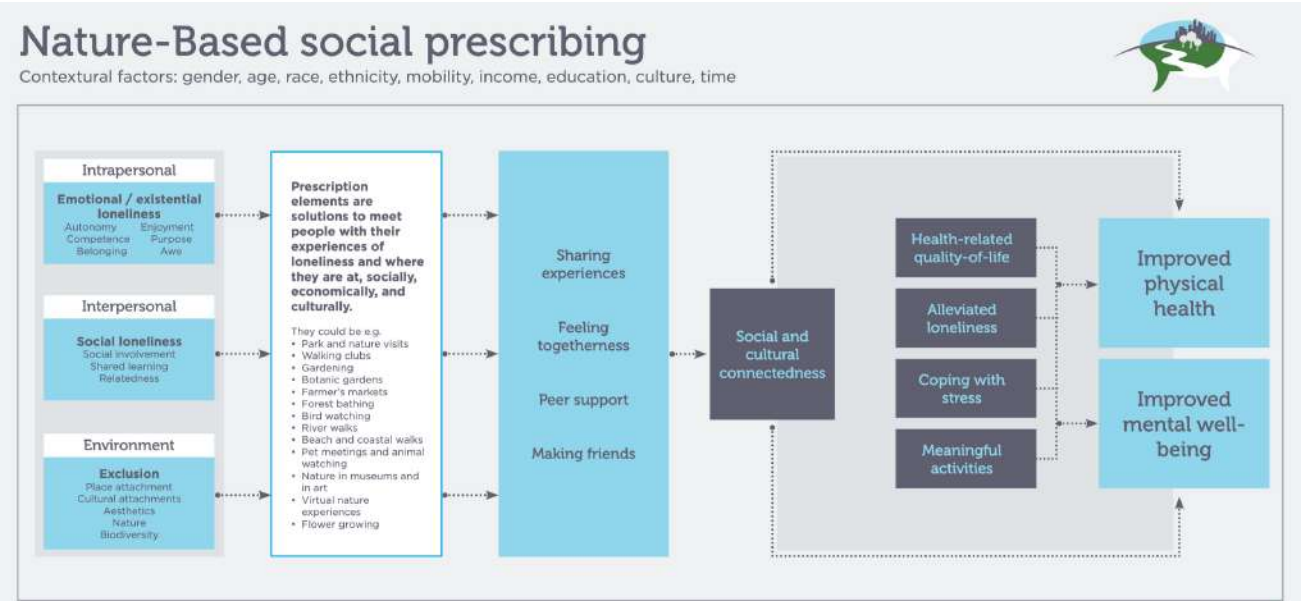
As part of the RECETAS project, the project team will conduct a targeted environmental scan and study sites will provide relevant knowledge and information about the current state of loneliness and NPSB in their counties and communities. The aim of the targeted environmental scan is to understand the patterns, trends, and experience of loneliness (during and following the COVID19 pandemic) , and how nature-based solutions (NBS), green infrastructure (GI), and other outdoor community-based interventions are being used and applied to address mental health, specifically loneliness and social isolation.

To identify trends and patterns, we will examine selected literature from the study sites, including peer-reviewed, white papers, annual reports, commentaries, and program reports. We will also conduct a grey literature search to document the activities, policies, studies, and programs examining the intersection of loneliness and nature-based solutions.

To date, study sites have provided at least 5 seminal reports, articles, commentaries, or example programs focused on loneliness and NBS/GI interventions. The information provided by the study sites coupled with the overwhelming data on loneliness and social isolation prompted the study team to revisit the approach for identifying current patterns and trends to identify gaps. The lack of published research created the opportunity to provide an updated state of the evidence by doing an advanced internet search on current programs, policies, and initiatives. Due to the currently evolving research base on loneliness and NPSB, we will utilize the window of opportunity to identify the major contributors focused on solving this complex problem.

Another addition to the project task update is the strong supporting evidence from the review by Leavell, et al (2019) on nature-based social prescribing, social connectedness, and mental health. Our review aims to provide relevant updates to NBSP and loneliness, specific to the six study sites, and highlight the remaining gaps in the research and policy.

The Leavell, et al (2019) systematic review highlighted the concern and potential consequences of loneliness on the health care system and how social prescribing, such as nature-based solutions, can enhance individuals' well-being. The literature identified in the Leavell, et al (2019) review was used to create a graphic to conceptualize social prescribing using nature-based solutions to reduce loneliness and improve mental health.

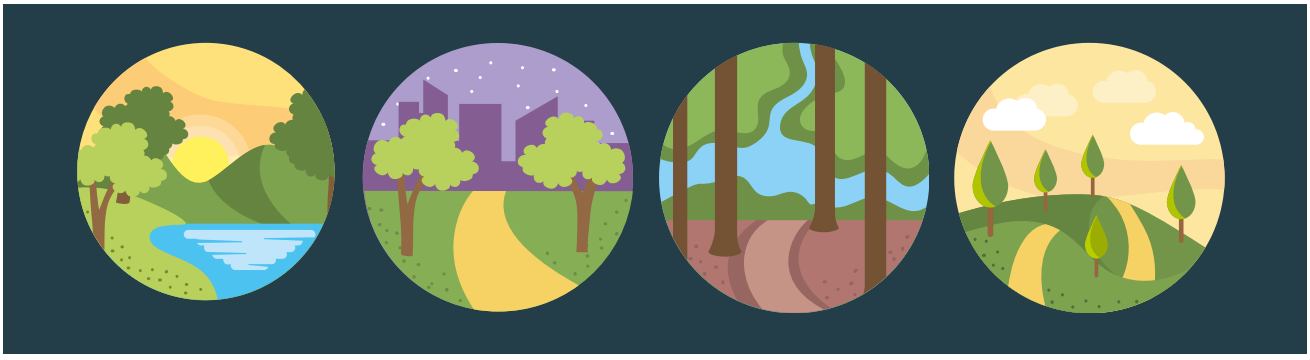


The figure captures the relationship between different pathways (intrapersonal, interpersonal, and environmental), nature-based social prescriptions, and the impact on mental health. The pathway is a guide for using social prescribing to address loneliness and other social connectedness outcomes.

The RECETAS environmental scan seeks to build on the figure and evidence identified in the Leavell (2019) article by specifically exploring studies, interventions, and programs in targeted cities and countries and to identify examples of how sites (e.g., organizations, communities, cities, countries) are addressing loneliness through nature-based solutions. The examples from our environmental scan can further the conversation and evaluation of the application and understanding of NBSP to address mental health, particularly loneliness.

RECETAS Study Site Examples of Action

We included 6 studies examining the effect of NBS on loneliness and perceived restorativeness, all provided by our six study sites. Two studies looked at the effects of NBS on loneliness or anxiety. Astell-Burt, et al (2021) used multilevel logistic regression to study the association between urban greening and loneliness status in major cities. The study had two samples, one who exhibited loneliness at baselines and one who did not. Participants completed a self-reported measure of loneliness in 2013 (baseline) and 2017 (follow up) and green space data was collected using the Australian Bureau of Statistics (ABS) classification of land as parks, sports areas, or nature reserves. None of the associations reached statistical significance, however, there was evidence of reduced loneliness with every 10% increase of green space. Padilla (2017) investigated the use of hydroponic orchards as Occupational therapy to manage anxiety in people with Alzheimer's. Beck's Inventory, a self-report measure of characteristics and symptoms of depression, was used to measure anxiety at the beginning and during the intervention period. The results revealed that hydroponic gardens reduce the level of anxiety.



Three studies focused on NBS and perceived restorativeness: Scopelliti (2012), Marselle (2016), and Peschardt (2012). Scopelliti (2012) analyzed the relationship between different types of green spaces and perceived restorativeness. The five types of green spaces represented various levels of biodiversity, including: an urban square, an urban park, pinewood area, botanical garden, and a peri-urban green area. A sample of 124 respondents were asked to complete a questionnaire based on the site that they had recently visited about the length of their visit, activities (e.g., walking, socializing), and self-reported measures of restorative experiences and perceived benefits (e.g., feeling psychologically or physically better). Results showed a significant effect of the level of biodiversity on restorativeness and psychological and physical benefits.

Marselle (2016) examined the association between perceived restorativeness and its mediating effects on perceived biodiversity, perceived naturalness, walk duration, perceived intensity, and emotional well-being. Participants were part of a national walking program and completed pre-post questionnaires after each walk. Results showed that perceived restorativeness is mediated by perceived biodiversity, perceived naturalness, and perceived intensity. Peschardt (2012) tested if park characteristics were associated with perceived restorativeness. Respondents completed a questionnaire on eight perceived sensory dimensions (PSDs) and perceived restorativeness (PRS). The differences between eight parks were also compared to determine associations between park characteristics. PSDs provided information about the specific characteristics that could contribute restorativeness and the results revealed that perceptions of social and serene characteristics were positively associated with higher levels of perceived restorativeness.

There was also a systematic review by Tharrey (2021) that examined the benefits of urban collective gardening. Collective gardening showed mixed results for physical activity and physiological health and positive results for mental and social health in most studies.

Forthcoming: What are the solutions to addressing this wicked problem?

RECETAS is responsive to the European Commission (EC) recommendations to leverage NBS for well-being in urban areas (Vandewoestihine and Boissezon, 2015). Moreover, COVID-19 and related confinement and isolation measures have placed the issues of loneliness and social isolation at the forefront of communities all over the world. The forthcoming section will explore how communities, and countries, are responding to increasing concerns in loneliness trends and the potential application of NBSP. We will provide examples (case studies) from the six study site countries using an advanced internet search.

Examples of the results will include projects such as the EU initiative, Horizon 2020, which is providing funding to demonstration projects, such as the RECETAS project, to identify best practices for NBS; and other national organizations participating in similar investments, including the the Member States of the WHO European Region committed to providing access to health and safe environments by 2020, the United Nations Sustainable Development Goal (11.7) creating cities that are sustainable and safe, and the United Kingdom investing in solutions for communities that are impacted by the COVID-19 pandemic (awards for sites across England to explore ways to bring communities together through the natural environment, such as walking, gardening, and conversation).

Conclusion

In Europe alone, and before the COVID-19 pandemic, over 75 million European adults reported meeting with family and friends at most once per month and 30 million European adults frequently felt lonely. Loneliness knows no geographic, economic, cultural, and social boundaries and affects all age groups (d'Hombres, et al., 2019). Research has shown that nature, with social structures, can improve health and mental well-being and reduce loneliness - people need time in nature for its healing benefits and its role in allowing people to interact in nature. Investments in nature-based solutions (NBS) and green infrastructure (GI) that address rapid urbanization and its adverse consequences on environmental systems in our cities, can be harnessed for health and well-being even in times of health emergencies. RECETAS will address loneliness, a modifiable health condition that is known to shorten one's lifespan and may be as dangerous to one's health as smoking or obesity.

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