

# **Lonely By Design: How Modern Environments Fuel Isolation and How Nature Can Heal Us**

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## **ABSTRACT**

Loneliness has emerged as a global public health concern, affecting individuals across all age groups. This research examines how the design of modern environments, both physical and digital, contributes to the increasing levels of emotional and social isolation. With increasing urbanization, many people now inhabit "lonelygenic" spaces, settings that emphasize efficiency over community and often lack green areas, social gathering zones, and inclusive public infrastructure. Simultaneously, the widespread use of social media and digital communication tools creates a superficial sense of connection, particularly among adolescents, while deepening feelings of isolation. To understand potential solutions, this study draws upon psychological literature and environmental health research to examine the restorative impact of nature. It highlights that even limited exposure to green spaces can reduce stress, foster meaningful social interaction, and enhance overall mental well-being. The methodology involves analyzing existing peer-reviewed studies and synthesizing key findings related to urban design, screen usage, and access to nature. Results suggest that integrating nature into urban life may serve as a simple yet effective remedy to modern loneliness. This research highlights the need to reassess both the way we design our cities and the way we utilize technology. In an increasingly disconnected world, nature could be essential to reconnecting society.

**Keywords:** loneliness, Nature, Mental Health, Social Media, Urban Design, Green Spaces

## **INTRODUCTION**

Loneliness arises when an individual's real-life social connections fall short of what they mentally expect or hope for in their relationships. This gap between expectation and reality triggers an emotional response, which we identify as loneliness. It is generally classified into two types: emotional loneliness and social loneliness.

According to the American Psychological Association (APA), emotional loneliness refers to the absence of a deep, meaningful relationship, such as with a partner or a close friend. In contrast, ScienceDirect explains that social loneliness is linked to the lack of a wide-ranging social circle. Essentially, emotional loneliness reflects a lack of quality in relationships, while social loneliness points to a lack of quantity.

In 2017, the U.S. Surgeon General at the time, Vivek Murthy, referred to loneliness as a public health "epidemic." Later, in 2023, the World Health Organization acknowledged it as a pressing global issue. A 2020 report by the APA found that one in three Americans feels lonely each week, with 10% experiencing it daily, and young adults are the most affected. Some nations, like Japan and the United Kingdom, have even appointed "ministers of loneliness" to address this growing concern. Murthy also noted that the health risks of loneliness are comparable to smoking 15 cigarettes a day.

While loneliness itself is not classified as a mental illness, it is deeply linked with conditions like depression and social anxiety. These issues can increase feelings of loneliness, while loneliness itself can lead to further mental decline. For example, it may accelerate memory loss and cognitive decline among older adults by reducing brain stimulation. On the other hand, those suffering from dementia often become socially withdrawn, worsening their sense of isolation. This creates a damaging cycle of loneliness that harms mental health, and declining mental health increases loneliness.

In 2022, Xiaoqi Feng, a professor at the University of New South Wales, introduced the term “lonelygenic environments” to describe surroundings that unintentionally promote loneliness. Her research suggests that we aren’t inherently meant to be lonely; it is the design of our modern environments that leads to isolation.

This is where nature becomes essential. As urban development and industrialization continue to dominate, and mental health challenges rise, many people are becoming more socially isolated. Yet research shows that spending just two to three hours a week in nature can greatly reduce loneliness, even for those living in so called lonelygenic settings.

## **LITERATURE REVIEW**

Many studies and research in the recent past have examined the psychological, environmental, and societal factors contributing to loneliness. This section reviews the key findings from current literature that explore the causes of rising loneliness and the potential role of nature in reducing it.

Loneliness aggravates multiple levels of issues such as increasing stress, depression, and anxiety, and elevates the risk of diabetes, blood pressure problems, stroke, heart attacks, including several other psychological and health problems. Dr Ratnakaran, an assistant professor and geriatric psychiatrist at Carilion Clinic, Virginia Tech Carilion School of Medicine, said, “We as psychiatrists don’t often address loneliness as a problem; it is a big factor in people’s diseases and lives. Addressing it will help a lot with the quality of life outcomes and health outcomes. It is very necessary not only as psychiatrists, but also as physicians.” Research gives evidence that social isolation and loneliness have adverse health consequences, which include poor sleep quality, impaired executive function, accelerated cognitive decline, poor cardiovascular function, and impaired immunity at every stage of life. A 2019 study led by Kassandra Alcaraz, PhD, Mater of Public Health, a public researcher with the American Cancer Society, analysed data from more than 580,000 adults and found that social isolation increases the risk of premature death from every cause for every race.

Xiaoqi Feng, who coined the term “lonelygenic environments”, defines it as those complex environments or conditions that can cause or aggravate loneliness. According to Feng’s research, modern cities, dominated by high-rise buildings, well-developed infrastructure, and concrete landscapes with reduced green spaces, are designed for efficiency, not connection. These spaces hamper social connectivity as they lack communal gathering spots, accessible parks, and walkable neighbourhoods, which are essential for social interaction. In such places, people live close together, but they are emotionally distant and have fewer opportunities to build meaningful relationships. Feng emphasizes that loneliness should not be viewed by society as a personal failing, but rather as a predictable outcome of neglecting human-centred design in urban planning. As countries develop rapidly, the disconnect between people and their environment may be silently contributing to the global loneliness crisis.

While digital platforms promise constant connection, many teenagers, including myself, experience a growing sense of emotional isolation. Despite frequent interaction online, meaningful relationships often

feel harder to maintain, contributing to loneliness. According to Sherry Turkle, MIT professor and author of *Alone Together*, technology creates an illusion of companionship without the emotional depth that real relationships require. People often communicate with each other over social media in short messages, emojis, or comments instead of deep conversation, in a world where for people the only way they communicate with others is through social media, such a scenario can make them feel emotionally unfulfilled, even if they talk to a lot of people. Very often, teens who spend a lot of their time on social media experience a fear of missing out, by constantly viewing their friends and classmates posting highlights of their lives on these social media platforms, causing them to feel isolated and left out. Commonly used social media platforms like Instagram or Facebook provide features to scroll through videos, scrolling (without commenting or messaging) increases the feeling of loneliness, and this passive behaviour makes people feel as if they don't matter. Time spent online directly replaces the time that would have been otherwise spent in face-to-face interactions, which is the key to emotional bonding. The American Psychological Association (APA) found that increased screen time is linked with higher rates of loneliness in teenagers. In addition, a study from University of Pennsylvania showed that limiting social media to 30 minutes per day reduces the feeling of loneliness and depression in three weeks.

Mother nature is the purest and most natural way to overcome loneliness for a person. Matthew Browning, associate professor of behavioural, social and health sciences at Clemson University, said, "Neighbourhoods that are cooler because of trees, that are beautiful because of greenery, get people outside and physically active. They get people more likely to trust each other, independent of political or other divides, and talk, and when we feel bonded to our community, we feel less lonely." It is also clear from Feng's research that due to lack of public places people often feel a void for a "third place" outside their home and workplace to engage with members of the community. In a 2024 study, Browning and his colleagues found that residential places with more green areas showed lower rates of loneliness amongst a group of 8,383 middle-aged and older adults. These results held true even after taking in other factors such as income, education, and age. Similarly, Xiaoqi Feng and her colleagues looked at the effects of green spaces, in a 2021 study involving 8,049 people in Australia, where green spaces were measured as the percentage of land covered with parks, nature reserves, and other protected or conserved areas within circular regions up to a mile from their homes. Their studies show that 30 percent green space in the surrounding region was associated with 26 percent reduced incidence of loneliness over four years in adults and 52 percent in those who lived alone. Julianne Holt-Lunstad, professor of psychology and neuroscience at Brigham Young University, said that "There is some evidence that those who spend time in nature are less likely to report being lonely."

The way nature actually affects a person's mental state is quite interesting, especially with regards to loneliness, Holt-Lunstad states the being in public spaces such as parks or hiking trails increases the chances of social interaction and can foster a sense of feeling like you are a part of something bigger than yourself, such as the natural world or humanity. Exposure to nature can also bring down lower levels of stress and anxiety. Besides providing a place for social interaction, studies also show that even a short walk in a park can reduce cortisol, the body's main stress hormone. we therefore feel calmer, we are more open to connecting with others, and less likely to withdraw emotionally. Loneliness is often linked with mental fatigue and tiredness, and therefore, spending time in nature can often serve as a break from one's daily monotonous life. This is a process called Attention Restoration Theory. A 2021 study in *Scientific Reports* found that people who spend just 2 hours per week in nature reported significantly higher well-

being and lower levels of loneliness. Programs like “green prescriptions” in the UK encourage doctors to recommend nature walks or time in gardens instead of only giving medication for loneliness or depression.

## **ANALYSIS**

In this section of the paper, I discuss the current state of loneliness, what is causing it to become a global issue, and also how nature provides relief. After analysing the literature review, I give my own opinion based on the research, along with applying it in real-life scenarios.

Loneliness is at its all-time peak, with its effects having a grasp not only over teenagers but also people of all age groups. Starting with what studies say, especially about adolescents and their usage of social media, social media, whose main purpose is connection, has left people lonelier than ever. With increased digital usage, people feel hollowed from the inside. In today's fast-paced world, digital communication is replacing genuine social connection, with people spending the majority of their time on their phones, especially among youth.

Reading these reports helped me realize that the majority of relationships for my generation, unfortunately, depend on text and stories. Even when people spend hours on these platforms, they do not always feel the connection, making me wonder how many of us are lonely without even realizing it. What's important is understanding why these teens feel lonely and how it is happening. In my own experience, there is sort of a pressure to be online, to keep up with our friends and schoolmates, and not to miss out, but this leads to anxiety and not connection. Indicating how loneliness is not just a personal issue, but it is being shaped by the way we think, live, and interact. Solving this problem requires not only awareness but also real change in how we use technology and how we prioritize human relationships.

Infrastructure, or how cities and neighbourhoods are designed, serves as a major cause of social isolation and loneliness. In many modern urban areas, the lack of shared public spaces like parks or community centres is increasing rates of loneliness. High-rise buildings are common in all major cities of the world where the majority of the population lives. This modern infrastructure, despite being visually appealing, reduces the social bond amongst people even if they live close to each other, as they are ironically very far from one another emotionally.

Car-centric city planning also contributes to this issue, as it reduces walkability and natural encounters with neighbours. Unsafe environments, loud and crowded streets, force people to stay inside their homes, reducing their social interaction. Beyond these physical issues, what I have observed is that all these factors contribute to something bigger that is making us work-centric, in this age, we are so focused on our work, problems, or just life in general that we often forget to check upon the people around us may it be our friends, family or anyone else. People who are already suffering, for some reason or the other, don't open up about their problems, and neither does anyone check up on them. These studies and their vital points stated by me also indicate the same, as the example of car-centric designs of cities, which is for increasing the efficiency of transportation, for what? For people to reach their work faster or wherever they want to go faster. People often go under the radar and can never actually come out and confess even to the people with whom they are deeply connected.

Nature is the sole solution and the easiest solution to loneliness. Having read a lot of these reports, what stands out to me most is how nature works without trying, it does not force interaction, but still heals loneliness in a quiet, natural way. but why is the real question? Nature acts as faster an escape for people from their everyday hectic life, reducing the rates of stress. Unlike digital life, natural spaces encourage stillness, calmness, and provide time to reflect on ourselves, opening people emotionally. Walking in

public parks allows people to naturally encounter others, increasing their social interaction. As the Attention Restoration Theory says that spending time in nature reduces our mental fatigue, a major cause of people not interacting with others and withdrawing emotionally, and also restores our ability to focus. I've personally felt this during stressful days. Even just 15 minutes within my society's small garden helps me reset emotionally. I feel emotionally reset at any time that I hear birds or I feel the breeze. These calm times let me breathe freely once more. Nature cannot solve everything but it gives to me the space for comprehension of myself, as the first step for comprehension of others.

In nature, people often feel calmer, more grounded, and less distracted. I think this helps us become more emotionally available, not only to ourselves but to everyone around us. When we are not constantly trying to be "on" like we are online, we make room for real connections. Spending time in nature does not include spending time worrying if someone is judging you, which is a major problem, especially in teenagers, nor are they expected to perform like on social media. Many teenagers overthink quite often about thoughts of others toward them in class, in groups, or even online. But they do not feel judged while in nature. They feel it elsewhere. For me, I can walk, sit, breathe without worrying about whether someone watches or someone forms opinions. Even if it is brief, that same freedom can make me feel much more like me. When people are more relaxed, they are more likely to have a smile on their face, and it is more is the probability for someone to strike up a conversation with them. For example, on the first day of school, a child is more likely to come and sit beside his/her classmate who has a smile on their face, for instance, because it makes them look open for conversations. Coming back to nature, it feels like a safe and neutral space, there is no pressure to talk, but if it happens, it feels genuine.

What I had not fully realized until now is that sometimes, loneliness becomes a kind of comfort zone. As a teenager, it can feel easier to stay in your own bubble than to open up and risk being misunderstood or judged. There have been moments when I've wanted to share how I feel but held back, thinking it might seem like I was overreacting or being dramatic. I have seen friends do the same laughing in groups, posting online, acting like everything's fine, but then actually they are all alone, the same moment. Through this research, I have come to understand that loneliness often hides behind these everyday actions. It is not always loud or visible. It shows up in the quiet scroll through social media late at night, in group chats that feel crowded but not comforting, and in the pressure to be constantly okay. And when people around us seem just as busy or distracted, it becomes harder to speak up. I now realise that for many teens, loneliness doesn't come from being alone it comes from not feeling understood, even when we are surrounded by people.

This project also made me think about how important it is to be emotionally available not just to others, but to myself. I used to think that dealing with loneliness meant doing more, messaging more people, joining more conversations, being more active socially. But now I see that sometimes, it is not about doing more it is about being more honest. Creating space to feel what I am feeling, to accept when I am not okay, and to allow others to do the same. I have started thinking about how I respond when someone shares something personal with me. Am I really listening? Do I make them feel safe to open up? These questions have made me more mindful. Because in the end, no research paper or theory can solve loneliness unless we choose to act differently with more empathy, more patience, and more courage to be real with each other. If even one conversation feels genuine because of this understanding, I think that is already a powerful start.

Through this paper, I've come to understand that fixing loneliness is not just a social responsibility, it is also a personal one. I've started taking small steps calling a friend just to ask how they are, walking outside



when I feel overwhelmed, or choosing to talk in person instead of texting. These moments may seem small, but they feel far more real. And that, I think, is what we are all truly and actually craving is realness.

## CONCLUSION

Loneliness today is not simply a personal issue but a structural and environmental one. As explored in this paper, the design of our cities, the way we use technology, and the rapid pace of modern life all contribute to the rising sense of loneliness. Social media has replaced meaningful communication with quick interactions that often leave people, especially teenagers, feeling emotionally unfulfilled or hollow on the inside. Urban infrastructure that lacks green spaces and public places like parks are increasing the rates of isolation, creating invisible walls in densely populated areas, amongst the people.

But the solution is simpler than we might think. Research consistently shows that access to nature, whether through parks, gardens, or even views of greenery, can significantly reduce loneliness. Nature offers calmness, results in personal reflection, and fosters casual social interactions, all without demanding anything in return. Unlike digital life, nature heals quietly and genuinely.

To address the loneliness crisis, we must rethink how we build our environments, both physical and digital. Green spaces should not be luxuries but necessities, they should be a part of every community as tools for emotional and social well-being. Perhaps the cure for modern loneliness is not more technology or longer friend lists, it is more trees, more sunlight, and more shared spaces that allow us to connect truly and emotionally to each other.

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