



THE IMPACT OF GREEN SPACES ON MENTAL WELL-BEING AMONG UNIVERSITY STUDENTS

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Received: 05/05/2025

Revised: 02/08/2025

Accepted: 28/08/2025

Published: 01/11/2025

ABSTRACT

The study aims to understand the impact of green spaces on mental well-being among university students. This research examines how the duration and frequency of exposure to green spaces influence stress reduction, concentration, and cognitive performance in university students. A sample of 20 university students aged 18-25 who have studied or worked in green spaces was targeted. Structured interviews were conducted to gain deeper insights into how green spaces benefited their mental well-being and to explore personal experiences related to stress relief and cognitive enhancement. Thematic analysis will be used to identify recurring patterns and themes within the data collected. The results also indicate that engaging with natural environments can encourage modern students to break away from their predominantly virtual lifestyles and reconnect with nature. This study advocates for incorporating green spaces into daily routines to support mental well-being and overall academic performance.

Key Words – *Green spaces, mental well-being, qualitative, natural environments, thematic analysis*

Green spaces have increasingly been recognized for their significant influence on human health across the lifespan. Research has demonstrated that access to natural environments can reduce obesity, improve lung capacity, and lower engagement in risky behaviors among children and adolescents (Wallner et al.,

2018). These physical health benefits extend to adults, as exposure to green spaces has been linked with improved air quality, opportunities for physical activity, and the promotion of healthier lifestyles (Ma et al., 2019; Reyes-Riveros et al., 2021).



Beyond physical health, green spaces contribute substantially to mental well-being. Quantitative and cross-sectional studies have shown that access to parks, green corridors, and tree-lined areas is associated with reductions in stress, anxiety, and depressive symptoms, alongside decreased reliance on antidepressants and mental health services (Weimann et al., 2019; Zhang et al., 2019). Such findings underscore the role of natural environments in reducing the burden on healthcare systems while supporting community mental health.

A growing body of literature has also highlighted the cognitive benefits of engaging with green spaces, including improvements in concentration, attention restoration, and memory retention (Kaplan & Kaplan, 2011; Berman et al., 2012). For university students, who often face high academic demands and digital overstimulation, green spaces offer a potential avenue for mental restoration and enhanced cognitive functioning, providing a respite from the pressures of academic environments (Wallner et al., 2018).

However, while prior studies have predominantly employed quantitative and cross-sectional designs, there is a notable gap in qualitative research exploring the lived experiences of university students in relation to green space engagement. Specifically, there is limited understanding of how the frequency and nature of interactions with green spaces influence students' perceived stress levels, concentration, and cognitive performance, and which qualities of green spaces are most valued in promoting mental

well-being within this population.

Addressing this gap is critical, given the increasing digitalization of student lifestyles and the need to identify accessible strategies to support their mental health and academic performance. Therefore, this study aims to explore how university students perceive and utilize green spaces, examining the specific ways these natural environments contribute to stress reduction, cognitive functioning, and overall mental well-being. By capturing students' personal experiences and reflections, this research seeks to generate insights that can inform the design and integration of effective green spaces within university campuses, supporting holistic student development.

Wallner et al. (2018) extends knowledge about the positive or possible impacts of green spaces and students' cognition and well-being. They point out that the practices of being exposed to greens can go a long way in easing stress and at the same time aid in sharpening focus in addition to lifting one's spirits. From their observations they suggest that young people find large, green settings to be of high relevance to usability in cognitive processes and overall health. Based on the above argument, the present learning presents a background on which it might possibly be possible to explore whether green spaces could indeed afford in educational arenas.

In addition, Quinn et al. (2019) explored how university students understand and experience their health and quality of life with respect to green spaces. They understand that students have many aspects, which define their health, and



even if they control a characteristic, there can be factors that were not considered. They encourage future studies for the investigation of the direct correlation between how students utilize green space and the perceived health status.

Stimulating sensory stimulations

In their study, Kaplan and Kaplan have noted that green local environments have positively affected the sensory processes of participants and brought value to their health. These elements include art, music, and the variation of light effects, added to architectural appearance and functionality, create a perfect touch of these spaces. Seasonal changes, like the blooming of flowers in spring and summer or the rich hues of autumn foliage, were particularly noted for their uplifting effects on mood (Kaplan & Kaplan, 1989; Kuo, 2001). Hence, it is noted that stimulation of eyes relates with psychological benefits and this research finding a common narrative across multiple such studies, further revealing and enhancing the fact that nature and mental health are intertwined (Berman et al., 2012; Pretty et al., 2005).

The Sense of Escape Provided by Green Spaces

Quinn et al. (2019) found that green spaces offer a significant sense of mental escape for university students, providing relief from the monotony and pressures of academic life. The study revealed that students often seek out green spaces as a way to disconnect from their hectic schedules, allowing them to experience mental freedom and reflect on interests beyond their coursework. Participants consistently described green

spaces as offering an "escape," emphasizing their role in fostering psychological distance from academic stress. These findings highlight a strong association between natural environments and the mental well-being of students, positioning green spaces as restorative settings that support cognitive and emotional reprieve.

Creating a Sense of Social Coherence

A significant theme that emerged from the literature of Wallner's study regarding urban green spaces (UGS) is the dual nature of sharing these environments with others. Many participants, part of this study, articulated a preference for being in UGS as a means of bringing together social interactions. For some, the goal of visiting these spaces was to enjoy a peaceful environment in the presence of others. Respondents in this research remarked that they usually do not go out of their way to talk to people but surprisingly enjoy having deep conversations with friends under a tree. Thus indicating a desire to bond with close ones on a different level. This inclination from solitude towards social interaction suggests that UGS can provide a sanctuary where individuals can disconnect from the world around them and focus on strengthening bonds.

METHOD

The current research used a qualitative research methodology on the effects of green spaces on the mental health of university students. Through this approach, the focus was on gaining in depth insights into the students' experiences and their views on the role of



green spaces in supporting their mental health.

Participants and Sampling

The study included 20 university students aged between 18-25 years, selected through purposive sampling to ensure that all participants met the inclusion criteria. Participants were eligible if they were currently enrolled university students with experiences studying in green spaces. This purposive sampling technique allowed the study to target individuals with relevant experiences that aligned with the research objectives, facilitating a more detailed exploration of the phenomena.

Data Analysis

Thematic analysis following Braun and Clarke's (2006) framework was used to analyze the data systematically. Transcribed interviews were imported into MAXQDA software to facilitate organized manual coding, allowing for efficient generation of initial codes and their refinement into broader themes relevant to mental well-being and green space usage. Themes were iteratively reviewed and verified by cross-checking against raw data to ensure consistency and depth. To enhance credibility and validity of the findings, triangulation was employed, including method triangulation (structured and open-ended probes), theoretical triangulation (drawing from Attention Restoration Theory and Ecotherapy), and analyst triangulation, wherein the coding framework, thematic maps, and interpretations were peer-reviewed by my research guide. This process ensured the credibility and rigor of the findings while

accurately reflecting participants' lived experiences.

Data Collection

Data was collected through semi structured interviews, which provided a consistent framework for questioning while allowing participants the freedom to express their experiences openly. This structure helped ensure comparability of responses across participants while accommodating a deep exploration of individual experiences. Interviews focused on key areas, including:

1. Participants' frequency and type of engagement with green spaces,
 2. Personal reflections on mental well-being related to green space experiences,
 3. Perceived benefits or drawbacks of studying in green spaces.
1. Prioritizing green spaces in their daily life

Each interview lasted approximately 30-45 minutes, allowing for comprehensive insights into participants' perceptions and experiences.

Ethical Considerations

All participants were briefed before the starting of the interviews explaining the study's purpose, procedure, and ethical considerations, including confidentiality and the right to withdraw at any time. Informed consent was obtained from each participant prior to the interview. Measures were also taken to ensure anonymity and confidentiality, assigning codes to participants rather than using personal identifiers. The participant's answers were also voice recorded with their consent.

RESULTS AND DISCUSSION

This study explored how green spaces influence mental well-being among university students, using concepts from Ecotherapy (Roszak et al., 1995), Environmental Psychology (HM Proshansky et al., 1977) the Biophilia Hypothesis (EO Wilson et al., 1995), Attention Restoration Theory (S Kaplan., 1992) and Stress Reduction Theory (RS Ulrich et al., 1992). By analyzing responses from a sample of 20 participants, the study uncovered diverse themes and subthemes associated with students' interactions with natural spaces and their well-being. The findings reveal that participants consistently view green spaces as essential for reducing stress,

enhancing focus, and fostering emotional resilience. These spaces not only serve as environments for mental calmness and introspection but also act as vital catalysts for social cohesion, encouraging meaningful interactions and community building. Additionally, students expressed a strong preference for solitude within green spaces, finding such experiences to facilitate mental rejuvenation and self-reflection. Participants also expressed a strong desire for an increase in green spaces around them, underscoring the perceived value of these environments in promoting holistic mental health and supporting their academic and social lives on campus.

Figure 1: Themes Exploring Impact of Green Spaces on Mental Well being in University Students

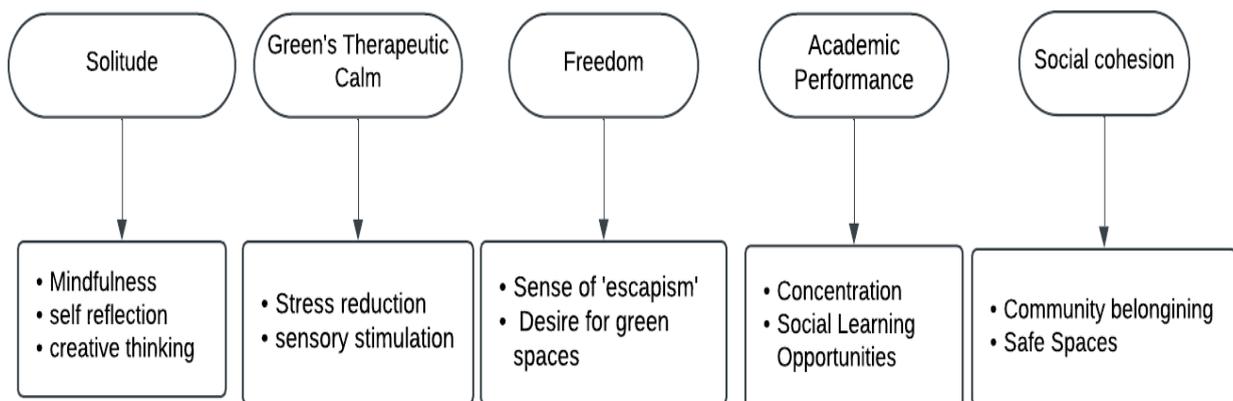
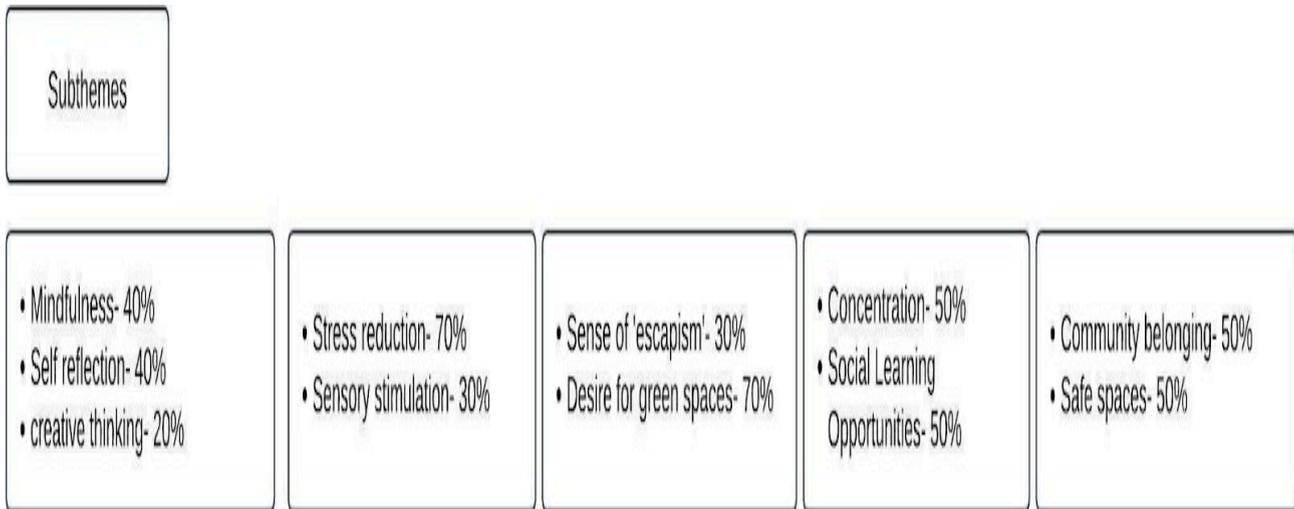


Figure 2 : Percentage of Total Sub Themes extracted from the participants’ responses



Theme 1 Solitude

A prominent theme emerging from the participant’s responses is their preference for solitude in green spaces. Students were able to associate solitude with enhanced mindfulness and creative thinking and self-reflection. Many students expressed a strong inclination to spend time alone in natural green environments, valuing the peace and clarity that solitude brings.

"Being alone in a green space allows me to think freely without distractions. I can focus on my thoughts and really dive into what I need to work on." (KI, personal communication, 12.10.2024). Here the participant has expressed the comfort that green spaces provide for deep, uninterrupted thought.

This sentiment reflects the idea that solitude facilitates a deeper connection with one’s inner self. Participants highlighted how quiet moments in green

settings foster ‘mindfulness’, which is a feeling of awareness of the present moment. This is a feeling which is rarely achieved by people in today’s busy digital world.

"In nature, I can tune into my surroundings and forget about the pressures of college life. It’s like a reset for my mind. I often find that when I’m alone under a tree, I can think about my goals and what I want for the future. It’s a time for me to connect with my thoughts without interruption." (BS, personal communication, 12.10.2024). This ability to pause and immerse oneself in nature can lead to greater mental clarity, allowing for thoughtful introspection and a break from the constant hustles of a monotonous university life. Self-reflections mentioned here are essential for personal growth, providing the space to evaluate one’s aspirations and emotions. This idea aligns with the broader understanding of how natural green settings can promote emotional wellbeing and mental clarity.



Participants also noted that solitude in green spaces can spark creative thinking.

"When I'm alone in a park, my mind wanders, and I come up with ideas that I never would have thought of in a crowded place." (AP, personal communication, 12.10.2024). Here, it is noted that the freedom to think creatively often flourishes in peaceful green settings, where individuals feel open to exploration.

Theme 2 Therapeutic Calm of Green Spaces

Another prominent theme identified in the responses is the therapeutic calming nature of the color green. Many students articulated how these natural environments serve as a refuge from the stresses of university life, significantly contributing to their overall wellbeing.

"When I'm surrounded by greenery, I feel my stress melting away. It's like the trees are absorbing all my worries." (BMP, personal communication, 12.10.2024). This statement underscores the profound impact that green spaces can have in reducing anxiety and fostering a sense of tranquility..

The calming effect of green spaces can be attributed to their ability to create a serene atmosphere conducive to relaxation.

"Sitting in a park, I can just breathe and let go of everything. The sounds of nature are so soothing, and it makes me forget about my deadlines." (AS, personal communication, 14.10.2024). This statement highlights how the auditory elements of nature such as rustling leaves and birds chirping serve

as a sensory stimulus that promote relaxation and distraction from stressors, thus encouraging them to reconnect with the present moment and alleviate feelings of overwhelm.

"Green is good for the eyes; it is such a calming colour. It removes my eye irritation." (BMP, personal communication, 12.10.2024). This remark highlights the soothing nature of the colour green, suggesting that being surrounded by lush greenery reduces physical discomforts like eye strain or irritation that are often results of prolonged exposure to artificial environments.

Theme 3 Freedom

The theme of "freedom" emerged strongly from the responses highlighting the fact that for many, green spaces symbolize a form of 'mental escapism' from their daily pressures. They express that it serves as a golden chance to step away from the structured demands of academic life and embrace a setting where they feel unrestricted.

"I feel like when you're around in green spaces, there's a broader vision that you could see. You generally feel even physically and mentally very free. And then there is a liberation of your thoughts; you feel somehow lighter and calmer." (PM, personal communication, 13.10.2024). This observation suggests that green spaces provide students not only with a sense of physical openness but also with a mental freedom, where thoughts flow freely, creating a renewed state of calm mind.

"I wish there were more green spaces around campus. It feels like we're



always in buildings, and the few natural spots we have are crowded.” (AS, personal communication, 14.10.2024). This statement made by a participant also evokes the desire for more green spaces in and around the campus. The responses convey a longing for the accessible green spaces to support a balanced lifestyle.

Theme 4 Academic Performance

A key theme that emerged from participant’s responses was the impact of green spaces on academic performance.

“Studying in green spaces makes me feel connected to nature, and I find it easier to concentrate. The natural sounds like birds chirping or leaves rustling are much less distracting than notifications on my phone.” (VS, personal communication, 14.10.2024). Many students reported that being in a natural environment positively influenced their ability to concentrate thus leading in their academic success.

Social learning opportunities, which was another frequently mentioned subtheme, was also brought up by several participants. *“When I study with friends in the park, it feels more relaxed, and we can discuss topics without the formality of a classroom. It helps us learn from each other and clear up any doubts.”* (AP, personal communication, 12.10.2024). This illustrates how green spaces create a comfortable setting for collaborative learning, where students feel more open to ask questions and share insights.

Theme 5 Social Cohesion

Another key theme that emerged from the participant’s responses is the role

of green spaces in fostering social cohesion. Social cohesion here, refers to the role that green spaces play in fostering a sense of community, belonging and positive social interactions among people.

“There is this Cubbon Park in Bangalore where we have a lot of communities. I was once part of a running club where we would meet in the park...you interact with people, and you start seeing them on a daily basis, it's a good feeling”. (AS, personal communication, 10.10.2024). This regular interaction establishes a connection that extends beyond shared physical space, creating a familiar and safe space for young students. This “sense of community belongingness” , as another participant expressed, *“It becomes, like, a reason for you to go to that park because you want to meet that person or be in that community,”* (BS, personal communication, 12.10.2024). For these students, green spaces became more than places for relaxation or recreation. They became hubs for friendship and camaraderie.

Limitations

One of the limitations of this study is its small sample size, which may reduce the generalizability of the findings to broader populations. Additionally, the sample consisted of psychology students majorly, who are often well versed in research methodologies and may possess knowledge of the study’s objectives. This familiarity could introduce response bias, as psychology students might adjust their answers to align with the perceived research outcomes. Further research could examine the specific elements within green spaces that contribute most to mental well



being, such as the role of sensory stimuli (eg: sound, colour, and air quality) by taking a much diverse sample across varied age groups. Another valuable direction would be to conduct cross cultural research that could highlight how green space usage varies and impacts mental well being across different cultural and geographical contexts.

CONCLUSION

This study highlights the multifaceted benefits of green spaces for university students, demonstrating their role in reducing stress, enhancing focus, fostering emotional resilience, and supporting social cohesion. By exploring students' lived experiences, the findings emphasize that green spaces are not mere aesthetic additions but essential environments for promoting mental well-being and academic success.

While the Gurukul system's integration of nature with learning offers inspiration, its wholesale transferability to modern university contexts is limited due to differences in scale, structure, and technological integration. However, its

core principle, which is learning in natural environments remains relevant. Universities can adopt this principle by incorporating dedicated green spaces for outdoor learning, reflection, and social interaction.

Policy and design recommendations arising from this study include creating accessible, quiet green areas with natural seating, shade, and biodiversity to facilitate solitude and mindfulness, alongside open spaces that encourage collaborative learning and community activities. Incorporating elements such as water features, varied vegetation, and sensory-rich environments can enhance stress reduction and cognitive restoration, supporting the diverse needs of students.

Overall, prioritizing the integration of thoughtfully designed green spaces within campuses can help modern universities foster holistic well-being and academic flourishing, aligning institutional planning with students' expressed needs for connection with nature in an increasingly digital world.

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