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Availability and Usage Patterns of Green Spaces on the Mental Health and Wellbeing of Individuals in Some Selected LGAs of Taraba State

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Abstract

Keywords

Green spaces
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This study assessed the availability and usage patterns of green spaces and their influence on mental health among residents of Sardauna, Zing, and Wukari LGAs of Taraba State. A descriptive cross-sectional survey design was used, involving adult residents who had lived in the study areas for at least one year. Data was collected using a structured questionnaire and analysed using the Statistical Package for the Social Sciences (SPSS) version 25. Descriptive statistics, cross-tabulations, and Pearson chi-square tests were used to assess relationships between variables at a significance level of $p \leq 0.05$. The results showed that 70.0% of respondents reported the availability of green spaces within their communities, although distribution was uneven. Open fields (32.1%) and parks (28.6%) were the most common types of green spaces. The quality of green spaces was mostly rated as fair (37.5%) and good (25.0%), with quality significantly influencing visitation patterns ($\chi^2 = 14.97$, $p = 0.005$), unlike the type of green space, which showed no significant effect. Usage patterns revealed that weekly visits (35.0%) were most common, while walking (31.7%) and relaxation (28.6%) were the primary activities. Frequency of visits and type of activities showed statistically significant variations, whereas social context and time of visitation did not significantly influence usage. Conclusively, while green spaces are relatively available in the study areas, their utilisation is strongly influenced by quality rather than type. Improving the maintenance, safety, and accessibility of green spaces could enhance their use and maximise their benefits for mental health and wellbeing.

1. Introduction

Mental health and wellbeing have become critical public health concerns globally, particularly in the context of rapid urbanisation, environmental stress, and changing lifestyles. Increasing levels of stress, anxiety, depression, and other psychological disorders have been linked to urban living conditions characterised by overcrowding, noise, pollution, and reduced contact with natural environments. These environmental pressures are increasingly recognised as major contributors to the global burden of mental health disorders, particularly in low- and middle-income countries (World Health Organisation, 2022).

Green spaces are widely recognised as essential components of healthy living environments. They provide opportunities for relaxation, recreation, and social interaction, all of which contribute to improved mental health

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outcomes. Recent studies have shown that exposure to green environments is associated with reduced stress, improved mood, and enhanced overall wellbeing among individuals across different age groups (Jimenez et al., 2021).

Empirical studies have consistently demonstrated a positive relationship between access to green spaces and mental wellbeing. For example, a systematic review reported that individuals living in areas with higher green space availability had significantly lower risks of depression, anxiety, and psychological distress compared to those in less green environments (Gascon et al., 2020).

The mechanisms through which green spaces influence mental health are multifaceted. These include psychological restoration, promotion of physical activity, and strengthening of social cohesion. Recent research has emphasized that natural environments support cognitive restoration and emotional regulation, thereby reducing mental fatigue and improving overall mental resilience (Ohly et al., 2019).

Despite the well-documented benefits of green spaces, access and utilization remain uneven, particularly in developing regions. In many urban and semi-urban areas, poor urban planning, population pressure, and lack of infrastructure limit the availability and quality of green spaces. Studies conducted in sub-Saharan Africa have highlighted that unequal access to green spaces contributes to disparities in mental health outcomes among different population groups (Rigolon et al., 2021).

In Taraba State, particularly in Sardauna LGA, Zing LGA, and Wukari LGA, there is limited empirical data on the availability, accessibility, and usage patterns of green spaces and their relationship with mental health. Local environmental conditions, cultural practices, and socio-economic factors may significantly influence how individuals interact with green spaces and the extent to which these spaces contribute to their wellbeing (Astell-Burt & Feng, 2020).

Therefore, this study seeks to examine the availability and usage patterns of green spaces and their impact on the mental health and wellbeing of individuals in Sardauna, Zing, and Wukari Local Government Areas of Taraba State. By generating context-specific evidence, the study aims to inform public health interventions and urban planning strategies that promote the integration of green spaces as a sustainable approach to improving mental health outcomes (Twohig-Bennett et al., 2021).

2. Materials and Methods

2.1 Study Area

This study was carried out at Sardauna, Zing, and Wukari LGAs of Taraba State. These LGAs were selected to represent diverse geographical and socio-cultural settings within the state.

Sardauna LGA is in the southeastern part of Taraba State and is characterized by mountainous terrain and a relatively cooler climate, especially in areas like Gembu. It lies approximately between latitude 6.7264° N and longitude 11.2531° E. The region will be noted for its rich natural landscapes, forests, and open green areas.

Zing LGA is situated in the northern part of the state and features a mix of savannah grasslands and lowland forests. It is located around latitude 8.9971° N and longitude 11.7435° E. Zing will be described as primarily agrarian, with scattered green spaces and farmlands.

Wukari LGA is in the southern part of Taraba State. It lies between latitude 7.8500° N and longitude 9.7833° E. The area is known for its historical and cultural significance and includes both urban and semi-urban settings with open fields, farmlands, and a few designated parks.

These three LGAs were selected to represent distinct ecological and cultural zones, making them suitable for a comparative assessment of how green spaces influence mental health and well-being.

2.2 Design

This research employed descriptive cross-sectional survey design. The design enabled the collection of data from a diverse group of individuals at a single point in time. This approach allowed the researchers to assess perceptions, attitudes, and self-reported mental health outcomes related to green space exposure across different communities within the selected LGAs.

2.3 Study Population

The study population consisted of adult residents (aged 18 years and above) of Sardauna, Zing, and Wukari LGAs who had lived in their respective communities for at least one year. This inclusion criterion ensured that participants have had enough exposure to their local environment to form reliable perceptions about the presence and effects of green spaces. Both male and female respondents were included across different age groups, occupations, and socio-economic backgrounds.

2.4 Instrument for Data Collection

Data was collected using a structured questionnaire, which was developed by the researcher and validated by experts in public health and environmental psychology. The questionnaire was designed to capture the availability and usage patterns of green spaces with the selected areas.

2.5 Data Analysis

The data obtained from the questionnaires was coded and entered the Statistical Package for the Social Sciences (SPSS) version 25 for analysis. Descriptive statistics such as frequencies and percentages were used to summarize demographic information and usage patterns (e.g., percentage of respondents who visit green spaces weekly). Cross tabulation was used to Compare green space usage across gender or LGA, while Pearson chi-square was used to assess the relationship between frequency of green space usage and perceived mental health benefits. All analysis was done at $p \leq 0.05$ as statistical significance.

3. Results

Table 1 shows respondents' perceptions regarding the availability, types, quality, and usage of green spaces. A large majority of respondents (70.0%) reported the presence of green spaces in their communities, while 20.0% indicated none existed, and 10.0% were unsure. The Chi-square test revealed a statistically significant difference in responses regarding availability ($\chi^2 = 117.03$, $p = 0.001$), suggesting strong consensus on the presence of green spaces.

Concerning the types of green spaces available, open fields were the most reported (32.1%), followed by parks (28.6%), gardens (21.4%), and playgrounds (17.9%). However, the distribution of green space types was not statistically significant ($\chi^2 = 1.63$, $p = 0.65$), indicating that no type predominated significantly over others.

Assessment of green space quality showed that most respondents rated the quality as fair (37.5%), followed by good (25.0%). Smaller proportions rated them as poor (17.5%), excellent (10.0%), or very poor (10.0%). The association between quality ratings was statistically significant ($\chi^2 = 14.97$, $p = 0.005$), implying meaningful differences in perceived quality. Although half of the respondents reported visiting green spaces regularly, the findings suggest that quality, rather than type, plays a significant role in influencing visitation patterns.

Table 2 describes how respondents use green spaces. Weekly visits were the most common (35.0%), followed by daily visits (15.0%) and monthly visits (20.0%). A notable proportion of respondents rarely visited (17.5%) or never visited green spaces (12.5%). The frequency of visits showed a statistically significant variation ($\chi^2 = 30.5$, $p = 0.001$). Regarding activities, walking (31.7%) and relaxation (28.6%) were the most frequently reported activities, followed by exercise (23.8%) and socializing (15.9%). The distribution of activities was statistically significant ($\chi^2 = 12.7$, $p = 0.013$), suggesting clear preferences in green space use. Most respondents visited green spaces with family (45.0%), while 30.0% visited alone and 25.0% visited with friends. However, this distribution was not statistically significant ($\chi^2 = 4.5$, $p = 0.105$). Similarly, preferred time of visitation showed no significant difference ($\chi^2 = 6.8$, $p = 0.078$), although visits were slightly more common at any time of day (30.1%) and during mornings and evenings (25.0% each).

Table 1: Availability and Types of Green Spaces in Sardauna LGA, Zing LGA, And Wukari LGA of Taraba State

Variable	Response	Frequency	Percentage (%)	χ^2	p-value
Are there any green spaces?	Yes	837	70	117.03	0.001
	No	239	20		
	Unsure	119	10		
	Total	1195	100		
Types of green spaces	Parks	342	28.6	1.63	0.65
	Gardens	256	21.4		
	Open fields	384	32.1		
	Playgrounds	213	17.9		
	Total	1195	100		
Quality of green spaces	Excellent	120	10	14.97	0.005
	Good	299	25		
	Fair	448	37.5		
	Poor	209	17.5		
	Very poor	120	10		
	Total	1195	100		
Do you visit green spaces regularly?	Yes	598	50		

	No	598	50		
	Total	1195	100		

*The type of green space does not significantly affect whether people visit regularly.

*The quality of green spaces does significantly influence visits, higher-quality spaces encourage more frequent visits.

Table 2: Usage Patterns of Green Spaces in Sardauna LGA, Zing LGA, And Wukari LGA of Taraba State

Variable	Response	Frequency	%	χ^2	p-value
Frequency of visits	Daily	179	15.0	30.5	0.001
	Weekly	418	35.0		
	Monthly	239	20.0		
	Rarely	209	17.5		
	Never	150	12.5		
	Total	1195	100		
Activities in green spaces	Walking	379	31.7	12.7	0.013
	Exercise	284	23.8		
	Socializing	190	15.9		
	Relaxation	342	28.6		
	Total	1195	100		
Who do you visit with?	Alone	359	30.0	4.5	0.105
	Family	538	45.0		
	Friends	298	25.0		
	Total	1195	100		
Time of day	Morning	299	25.0	6.8	0.078
	Afternoon	238	19.9		
	Evening	299	25.0		
	Any time	359	30.1		
	Total	1195	100		

4. Discussion

The findings of this study indicate that a substantial proportion of respondents (70%) reported the availability of green spaces within their environment, while 20% reported absence and 10% were unsure. The statistically significant result ($\chi^2 = 117.03$, $p = 0.001$) suggests that green space availability is not uniformly distributed across the study areas. This finding aligns with the study by Rigolon and Németh (2020), which reported uneven distribution of green spaces in semi-urban and developing regions, often influenced by socio-economic and planning disparities. However, the relatively high reported availability in this study contrasts with findings from Kabisch et al. (2021), who observed lower accessibility to green spaces in many African settings due to rapid urbanization and inadequate planning. This discrepancy may reflect the semi-urban nature of Sardauna, Zing, and Wukari LGAs, where natural vegetation and open land are more prevalent than in highly urbanized areas.

Regarding the types of green spaces, open fields (32.1%) and parks (28.6%) were the most reported, followed by gardens (21.4%) and playgrounds (17.9%). The lack of statistical significance ($\chi^2 = 1.63$, $p = 0.65$) suggests that no single type dominates in influencing overall distribution. This finding is consistent with the work of Zhang et al. (2019), who found that in less urbanized regions, informal green spaces such as open fields are more common than structured parks. In contrast, studies conducted in developed countries, such as that by Larson et al. (2021), reported higher reliance on formal green spaces like parks and recreational centers, highlighting differences in urban planning and infrastructure between developed and developing contexts.

The quality of green spaces was rated mostly as fair (37.5%) and good (25%), with fewer respondents rating them as excellent (10%) or very poor (10%). The statistically significant association ($\chi^2 = 14.97$, $p = 0.005$) indicates variability in perceived quality, which has important implications for utilization. This supports findings by Astell-Burt and Feng (2019), who emphasized that the quality of green spaces such as cleanliness, safety, and maintenance is a stronger determinant of usage than mere availability. Similarly, a study by Wood et al. (2020) found that individuals are more likely to engage with well-maintained and aesthetically pleasing green spaces, reinforcing the idea that quality significantly influences user behavior.

Interestingly, the results show that green space type does not significantly affect visitation, whereas quality does. This aligns with findings from Hunter et al. (2019), who reported that perceived safety and environmental quality were

more influential than the type of green space in determining frequency of visits. However, this contrasts with a study by Kaczynski et al. (2021), which found that specific features such as walking trails and sports facilities significantly influenced visitation patterns. The difference may be attributed to contextual factors, as respondents in this study area may prioritize accessibility and basic usability over specialized features.

Weekly visits (35.0%) were the most common, followed by daily visits (15.0%), while a notable proportion rarely (17.5%) or never (12.5%) visited green spaces. The statistically significant variation ($\chi^2 = 30.5$, $p = 0.001$) indicates diverse engagement levels among respondents. This is consistent with the findings of Twohig-Bennett and Jones (2021), who reported that while many individuals have access to green spaces, regular usage is often limited by personal, environmental, and socio-economic factors. In contrast, a study by Robinson et al. (2020) found higher daily usage rates in urban populations with well-developed recreational infrastructure, suggesting that infrastructural differences may account for the lower daily usage observed in this study.

In terms of activities, walking (31.7%) and relaxation (28.6%) were the most common uses of green spaces, followed by exercise (23.8%) and socializing (15.9%). The statistically significant distribution ($\chi^2 = 12.7$, $p = 0.013$) reflects clear preferences among users. This finding is in agreement with the study by Olafsdottir et al. (2020), which identified walking and passive recreational activities as the most common uses of green spaces globally. However, the relatively lower proportion of social activities contrasts with findings by Maas et al. (2019), who reported that green spaces often serve as important venues for social interaction. This difference may be influenced by cultural or environmental factors, such as safety concerns or lack of social amenities.

Most respondents reported visiting green spaces with family (45.0%), followed by alone (30.0%) and with friends (25.0%), although this was not statistically significant ($\chi^2 = 4.5$, $p = 0.105$). This suggests that while social context varies, it does not strongly influence visitation patterns. This finding is similar to that of Zhang et al. (2021), who found that family-based visits are common in community settings but do not significantly determine frequency of use. In contrast, a study by Veitch et al. (2019) found that social support and companionship significantly increased green space usage, indicating possible cultural differences in social behavior.

Finally, the preferred time of visitation did not show a statistically significant difference ($\chi^2 = 6.8$, $p = 0.078$), although visits were slightly more common at any time of day (30.1%) and during mornings and evenings (25.0% each). This suggests flexibility in usage patterns, likely influenced by individual schedules and environmental conditions. This finding is consistent with the work of Lin et al. (2020), who reported that time of visitation is often shaped by convenience rather than preference, particularly in regions with moderate climates and flexible daily routines.

5. Conclusion

This study examined the availability, types, quality, and usage patterns of green spaces among individuals in Sardauna, Zing, and Wukari Local Government Areas of Taraba State. The findings revealed that a considerable proportion of respondents have access to green spaces, indicating that such environmental resources are relatively present within the study areas. However, the distribution is not uniform, and a notable percentage of respondents reported either lack of access or uncertainty, suggesting disparities in availability across locations.

The findings demonstrate that although green spaces are available in the study areas, their utilization is influenced more by quality and individual preferences than by type or timing. This suggests that improving the condition and accessibility of green spaces could significantly enhance their use and, by extension, their potential benefits for mental health and wellbeing. The study therefore emphasizes the need for targeted interventions in urban and environmental planning to ensure equitable access to high-quality green spaces, thereby promoting healthier and more sustainable communities.

6. Recommendations

1. Local governments in Sardauna, Zing, and Wukari should prioritize the development and equitable distribution of green spaces to ensure that all communities have adequate access, since a significant proportion of respondents reported the presence of green spaces while others still lacked access.
2. Authorities and community stakeholders should focus on improving the quality of existing green spaces through proper maintenance, landscaping, waste management, and security measures, as the study revealed that the quality of green spaces significantly influences visitation and usage patterns.
3. Recreational facilities such as walking tracks, seating areas, exercise equipment, and relaxation spots should be incorporated into green spaces to encourage more frequent use, especially because walking and relaxation were identified as the most common activities among respondents.
4. Public awareness campaigns and community-based programs should be organized to promote the health, social, and environmental benefits of regular green space utilization, particularly for individuals who rarely or never visit these spaces.

5. Urban planners and policymakers should integrate green space development into future community and infrastructural planning in Taraba State, ensuring that parks, gardens, playgrounds, and open fields are preserved and sustainably managed to support recreation, family interaction, and environmental well-being.

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