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THE ROLE OF DHAKA'S COMMUNITY-BASED PARKS IN IMPROVING CHILDREN'S MENTAL AND PHYSICAL HEALTH

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ABSTRACT

This study focused on the significance of Community Park for enhancing children's mental and physical health at the grassroots level of the community of Dhaka city. To assess the practical scenario both primary and secondary data was used in this study. Convenience sampling techniques have been applied to collect data with a pre-designed structured questionnaire. To reach the study goal, regression analyses have been applied to see the correlation between children's health and community park activities. Furthermore, categorized the impact to understand the vulnerability. The evidence identified that such community park contributes significantly to children's physical and mental well-being, fostering a positive impact on their holistic development. The study findings demonstrated that ~ 80% of children think community parks significantly contribute to maintaining their mental wellbeing. Similarly, 61% of children expressed that park activities reduce their stress and anxiety. In addition, regular activities impact on their physical growth which was expressed by 90% of respondents. The result also finds out a strong correlation between the physical and mental health of the children. In addition, it analyzed the correlation of impact between their education and health. Besides, the study also assesses the levels of severity of depression, anxiety, and sleeping disorders in children after covid-19 pandemic. Indeed, results also disclose numerous factors such as infrastructural conditions, greenery stock, safety measures, children's activities and community participation in the community parks. The novelty of the study will help public health experts, psychologists, urban planners, environmentalists, policymakers, public representatives to take an eco-friendly sustainable development plan, thereby fostering a positive impact on children's holistic development. Furthermore, this study provides some recommendations to increase the overall health conditions of the park's children's zone.

Keywords: Children, Community park, Dhaka, Mental health, Physical health, Well-being.

INTRODUCTION

Child mental and physical health is a global priority. So, it's becoming a more crucial part of children's well-being to need open green parks for breathing and mind freshness. There exists a fundamental connection between mental health and physical health: a weak mental state is associated with an increased likelihood of developing chronic physical illnesses. Children with severe mental health conditions have an elevated risk of developing chronic physical conditions (Whiney et al., 2019; Cadman et al., 1987). The best way to improve the long-term health of children and early adolescents through physical activity may be to create a lifestyle of regular physical activity that will last into adulthood (Ługowska et al., 2023; Ha et al., 2019; Rowland & Freedson, 1994).

Physical health is a dynamic state that involves the preservation and development of biological, physiological, and mental functions, as well as their optimal work capacity and social activity, in order to achieve the maximum life expectancy (Koipysheva et al., 2018). According to WHO, mental health is a condition of mental well-being that enables individuals to effectively manage the stresses of life, realize their capabilities, learn and work effectively and make a positive impact on their community (WHO, 2022). However, there have always been substantial changes in the environment that appear to be adversely affecting children's lifestyles. These changes are not insignificant and have the ability to impact not just physical health, but also mental health and the growth of children. Particularly for children, the benefits of physical activity have been well-documented, and it is acknowledged that promoting an active lifestyle from a young age is crucial (Ha et al., 2019; Biddle et al., 2004). The urban environment, including its landscapes, strategies, and characteristics, has an impact on the overall well-being of children.

A child-friendly community (CFC) was developed to enable municipal councils to act in the best possible behalf of children and to promote communities in which children's rights to a healthy, empathetic, stable, educational, exciting, non-discriminatory, broad, and culturally rich environment are discussed (UNICEF, 2018; Enns & Kombe, 2023). UNICEF states that recent scientific evidence shows parks and other green spaces can reduce the negative effects of urban life and support children's healthy development (Vliet & Karsten, 2015; Wilson, 2022). The presence of parks and other green spaces is essential for a city's well-being (Nawar et al., 2022). Parks promote better public health and purify the air (Hailstone, 2021). Children's physical, mental, and social growth, from infancy to adulthood, can be substantially aided by green spaces such as community parks (UNICEF, 2021). Located within 1.5 km of residential zones, a community-based park is a publicly accessible, designed to serve the needs of more than one neighborhood and provides a variety of recreational opportunities for all ages, including children, and serves 3,000 to 12,000 individuals (Zhang et al., 2021; Lo & Jim, 2020).

For children's growth, these parks offer chances for physical activity, social interaction, and exposure to nature (Bedimo-Rung et al., 2005; James et al., 2015) and also a constructive and recreational phase for children where they enjoy their free time in the middle of nature with their friends or just taking a break. A well-planned community park fosters children's social contact while also assisting in the development of their rapid problem-solving skills (Shieh & Chang, 2014; Mani et al., 2012). In addition, community parks can encourage children's play in an urban setting whether children can easily access them and adults who look after children can feel secure knowing that kids are safe in these areas on a physical and mental level. Thus, Children's development is enhanced when they have space to play, study, exercise, and relaxation (Karapetian & Johnson, 2005). Although green spaces such as community parks appear to be related to a variety of health benefits, there has been special attention on the influence on children's mental and physical health (Lee & Maheswaran, 2011; Beyer, et al., 2014). In a city with a dense population like Dhaka, there is little space to achieve the minimum area needed for urban parks (Tabassum, 2018).

Cohen et al. (2015) found that renovating parks in New York City greatly raised children's physical activity levels, so underscoring the need for well-maintained parks for supporting physical health. Rigolon (2018) found that children from lower socioeconomic backgrounds in the United States often have less access to quality parks and green spaces, which adversely affects their health outcomes. Alderton et al. (2022) revealed that children with access to open space in the community within 800 meters of their homes have a lower likelihood of experiencing mental health difficulties and a higher likelihood of demonstrating competence, particularly in areas with child-friendly amenities in Australia. During covid-19 pandemic, the concern has been increasing about the well-being of children's mental and physical health. Several assessments revealed that the COVID-19 epidemic had a major physical and psychosocial impact on children, including depression, anxiety, post-traumatic stress illnesses, and sleep disorders due to lack of physical exercise (Hossain et al., 2022; Kamble et al., 2022; Pedrosa, et al., 2020). According to UNICEF, at least one-seventh of the world's children were directly harmed by the Covid-19 lockdown (Solmi et al., 2022), and more than 1.6 billion children were unable to attend school (Jones et al., 2021; Wolf and Schmitz, 2023; Asanov et al., 2021). After the massive pandemic, more than one in every seven adolescents aged 10 to 19 worldwide is predicted to have a diagnosed mental condition (WHO, 2020). In Bangladesh, at least 13.6% of children suffer from mental health disorders (Wadood, et al., 2021; Rozario & Islam, 2022).

Dhaka is one of the most populous cities in the world and struggles with several environmental issues, such as low green spaces and parks, unplanned urbanization projects, and a lack of recreational amenities, (Jahan, 2012; Siddiqy, 2017; Neema & Ohgai, 2010). Children and adolescents require play and physical activity for cognitive, physical, social, and emotional development (Benzing & Schmidt, 2018). Due to the absence of playgrounds and parks, Dhaka residents are deprived of this essential privilege. According to RAJUK, 37 of 129 wards of Dhaka's two city corporations lack playgrounds or parks. The parks and playgrounds in Dhaka should cover 1,876 acres, however, only 294 acres exist (Islam, 2022; Hossan, 2023). However, according to Neema et al. (2014), there are only 54 officially recognized parks in the city, which accounts for just 14.5% of its total open space while 25% of open green space sustains urbanites' quality of life (Rahman & Zhang, 2018; Byomkesh et al., 2012). A recent systematic review found that children with cerebral palsy (CP) did regular physical exercise at a rate that was 13% to 53% lower than in children with normal development (Carlon et al., 2012).

There are few studies that investigate the importance of green spaces, parks, and the various effects on children's well-being while visiting a park or green space with lack of study that analyze the correlations between a park in Dhaka city with children's physical and mental health in the same study. A case study regarding the Accessibility Analysis of Parks in Urban Neighborhoods in Dhaka (Tabassum & Sharmin, 2013), explores the current state of accessibility of urban parks in the city's planned and unplanned neighborhoods. The rapid rise of the urban population in Dhaka has resulted in massive encroachment of open space due to increased demand for land for housing and other urbanization needs (Alam, 2018; Saika & Kikuchi, 2017). According to another study (Labib et al., 2020) conducted in Dhaka, using urban green spaces is frequently linked to better physical and mental health as well as a lower prevalence of non-communicable diseases (NCDs). This research aimed to gain insight into the factors affecting how residents of Dhaka utilize their city's green spaces, with particular emphasis on the impact of poor health and medical recommendations for children to engage in outdoor exercise. It's found that responders with poor health (i.e., NCDs) frequently get recommendations from medical practitioners to engage in both indoor and outdoor physical exercise. As a follow-up to Hossain and Tasnim’s (2020) study, the investigation is focused on Dhaka's open spaces, such as playgrounds, parks, and amusement parks. The study revealed that Dhaka lacked proper planning and standards for children's open spaces, despite the global consensus on the need for play for cognitive, social, physical, and emotional development (Jahan, 2021).

This research looked into proportional associations here between community-based park and children's mental and physical health with leisure activities, in a large sample of children. Notably, while most previous research measured these park and public health characteristics, it explicitly focused on children's overall health when visiting their community park. This study hypothesized that facilities influence park users, especially children, and if children regularly use "community-based park" in Dhaka, then their physical and mental health will improve, and they will experience higher levels of social interaction and sense of community. In this context, this study analyzes the role of community-based parks in Dhaka to develop children's mental and physical health.

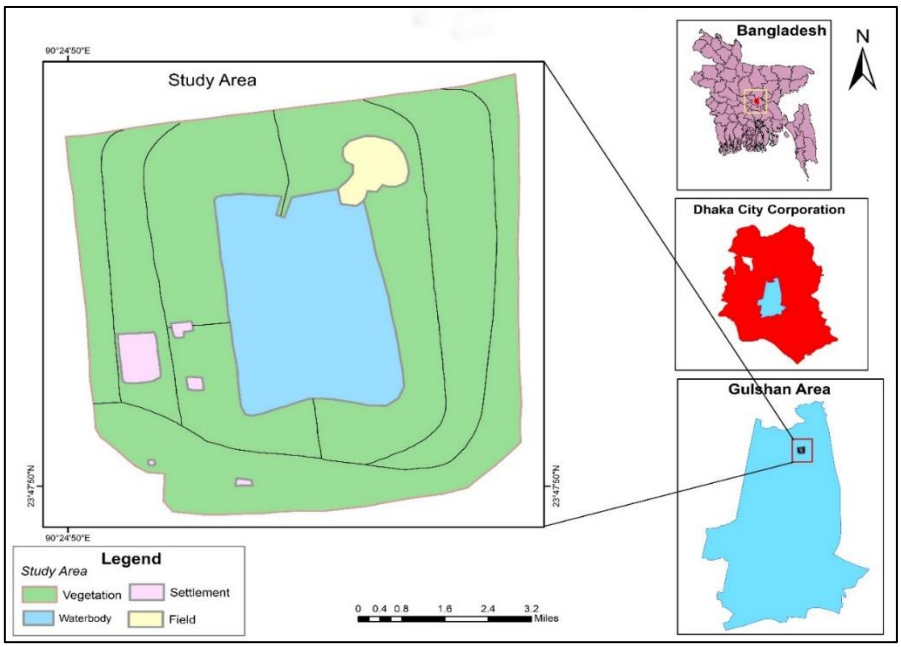
MATERIAL AND METHODS

Study Area

Dhaka is the eleventh largest megacity in the world with a population of 18.2 million (BBS, 2022). The population density in this area is approximately 3444 individuals per square kilometre (BBS, 2022). In 1989, the healthy green space of Dhaka city was 17% which decreased alarmingly to only 2% in 2020 (Nawar et al., 2022). The climate characteristics of the city consist of sub-tropical monsoon belts and experiences humid weather elements. The average temperature is ~25 °C annually (Chakroborty, 2019). Additionally, the average annual rainfall is 1875 mm, where more than 80% of rainfall occurred during the monsoon season (June-September) (Ahsanaullah and Zandt, 2013). Justice Shahabuddin Ahmed Park, situated in Dhaka City is the case study area of this study, and spans a total area of 9.45 acres. The geographical location of the park is 23° 47' N and 90° 24' E. It is easily accessible both by foot and a short community bus ride, making it a popular destination for children residing within Gulshan. Notably, Justice Shahabuddin Ahmed Park stands out with its count of 1700 trees, representing 40 distinct species, along with over 7000 shrubs and herbs. These additions not only enhance the park's aesthetic appeal but also serve as an educational opportunity for children to learn about various plant species.

Figure 1

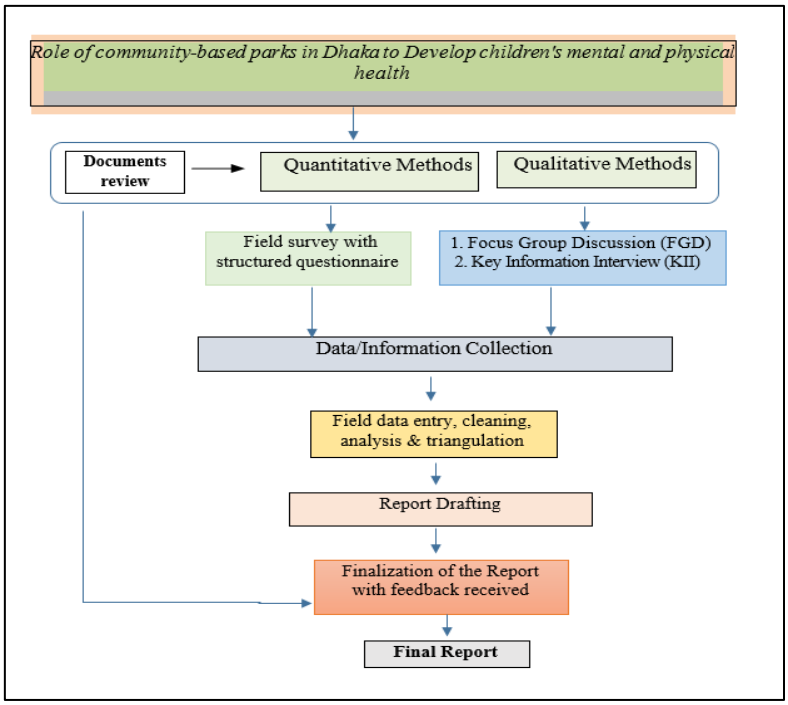
Location Selection of Justice Shahabuddin Ahmed Park



(Source: Author, 2023)

Figure 2

Overall Research Approach



Data Collection

This study mainly focused on one of the well-managed community parks in Dhaka city representing a major portion of children who participate regularly in the park activities. To get a practical scenario primary data was collected from 90 respondents. Convenience sampling techniques were taken to collect data. Total participants were 90 [Male 52 (57.8%) and Female 38(42.2%)]. The sample size is limited to 90 participants due to the rainy season, which prohibited a significant number of children from participating during the data collection period. The final sample of younger children comprised 33 participants (mean age = 6.27, 55% boys and 45% girls). The final sample of older children comprised 57 participants (mean age = 12.95, 64% boys and 36% girls). This study focused solely on children attending primary and high school levels. Children were approached directly at the park for the survey, and their participation in the survey was voluntary. This approach ensured that insights were gathered directly from those actively engaged in the park environment.

To evaluate expert judgment on the subject, three main informants were questioned. Key Information Interviews (KIIs) were used to collect in-depth information from such experts, playing different roles in urban development. A representative from Dhaka North City Corporation (DNCC), an architect who worked on the Justice Shahabuddin Ahmed Park refurbishment, and an urban planner were all interviewed for this research. Similarly, two Focus Group Discussions (FGD) have been taken to gather the diverse perceptions of the regular comer in the park. Consisting 6-8 participants were present in every FGD. Preferably, the focus group will be limited to experts who are actively involved in the practical aspects of community park engagement. Children and their parents mainly are present in that discussion. The purpose

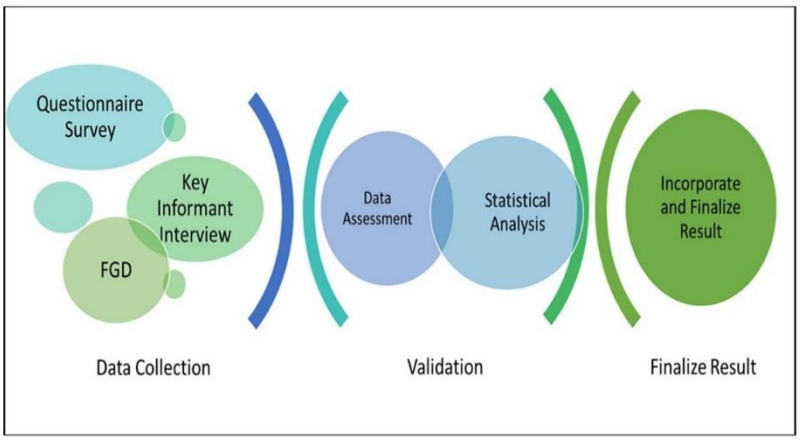
of the discussions was to learn about their practical experience with community parks, resource limitations, implementation obstacles, and the significance of community parks in promoting children's well-being.

Data Analysis

The descriptive analysis of the data gathered for this study was performed using IBM SPSS 25 and MS Excel 2010 software. Findings are provided and addressed quantitatively and qualitatively to reveal children's patterns of park use, improvements they would want to observe made, and the effects on the growth of their physical and mental well-being in urban community park. Correlation and regression formulas were used to assess the relationship between mental and physical health of the children.

Figure 3

Data Analysis Framework

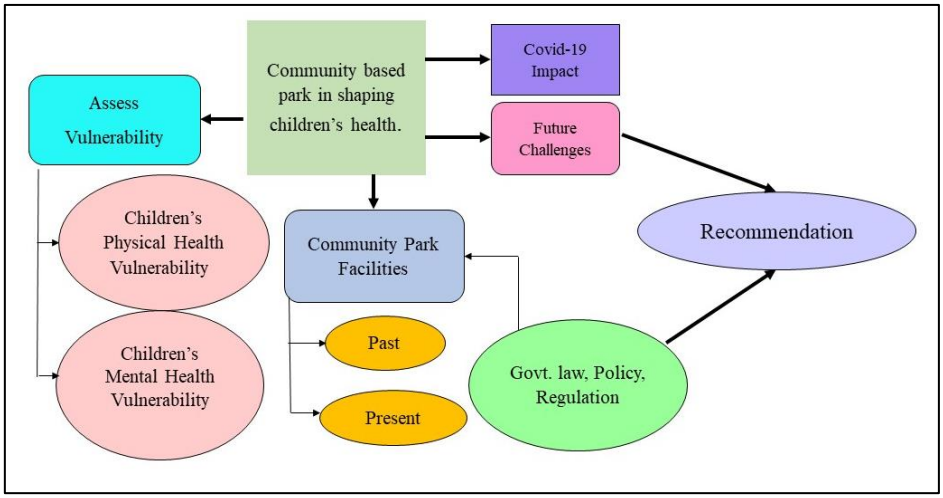


Analytical Framework

This framework provided a systematic approach to data collection and analysis, allowing for a deeper understanding of the relationship between park use and children's well-being, the analytical framework of this research focuses on the factors of community parks to develop children’s health (both mental and physical) induced identification of key variables, conceptualizing community-based parks, data collection methods, sampling strategy, data analysis, ethical considerations as well as study gap, limitation and prospects to develop service.

Figure 4

Analytical Framework



Statistical Analysis

In order to make a robust analysis, statistical tools and equations have been adopted throughout the paper. The linear regression model has been conducted to investigate various aspects: the relationship between children's mental health and physical health; and the relationship between mental health and their education. Additionally, this analysis focuses on the correlation between children's physical well-being and their academic performance, specifically investigating the effects of the COVID-19 pandemic on children.

RESULTS

Demographic Characteristics of the Users

The result of the survey shows (Table 1) that more male children (57.8 %) came to the park than female children (42.2 %). While comparing two age groups, the research found that approximately, more than half of the users (63 %) were within the range from 10 to 15 years (Table 1). Comparatively, a smaller number of users were found in the age group of 4 to 9 years (37 %). For a more detailed understanding, the preferred time for visits of the respondents was analysed in terms of the three-time frame. However, most of the children like to come to the park in the evening time between 4.00-7.00 pm (Table 2).

Table 1

Gender and Age Distribution

Gender	Total	Percentages	Age Group	Percentages
Male	52	57.8%	4-9 Years	36.70%
Female	38	42.20%	10-15 Years	63.30%

Table 2

Time for Coming to the Park

Time	Percentages
6:00–9:00 am	13.33%
9:00–12:00 am	23.33%
4:00–7:00 pm	63.33%

Mobility Pattern of the Users

The road travel time of the participants is depicted in Figure 5. The data reveals that the majority of children (45.60%) resided at a distance of 10-20 minutes from the location. Additionally, 23.30% of children had a travel distance of 20 minutes or less. The percentage of participants living within walking distance of the park is quite low. It was also of interest to understand the mobility pattern of users.

Figure 5

Road Travel Time of Respondents

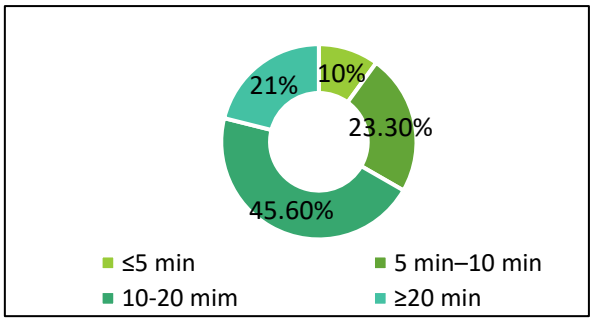
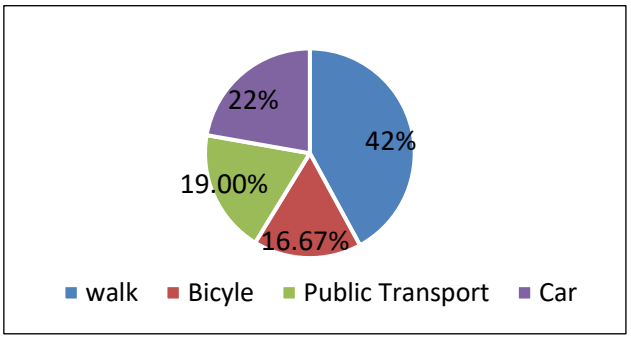


Figure 6

Mode of Transport



Most of the users came to the park by walking (42%) (Figure 6). The users also showed a higher tendency to use public transport like inter-community buses, rickshaws, and other modes with the increase in distance. People who live within near the park area were most likely to come to the park by walking or bicycle.

Regularity of Visit

The findings revealed that children visited the parks on a regular basis (Figure 7). Among the younger age group, the highest percentage (48.48%) reported visiting the park "2-3 times a week," indicating a relatively frequent engagement with the park. In contrast, in the older age group, the highest percentage (39%) indicated visiting the park "once a week," suggesting less frequent park attendance compared to their younger counterparts. Interestingly, a substantial proportion of older children (28.07%) still expressed a preference for visiting the park "2-3 times a week" rather than daily. Conversely, among the younger children, 18.18% reported visiting the park daily. When considering the preferred timing of park visits (Figure 8), weekends emerge as the most favored time, with the highest percentages of children choosing to spend their leisure hours at the park. On weekdays, the percentages dip to half of those seen on weekends, as the demands of school and other weekday commitments come into play.

Figure 7

The Preference Timing of the Park

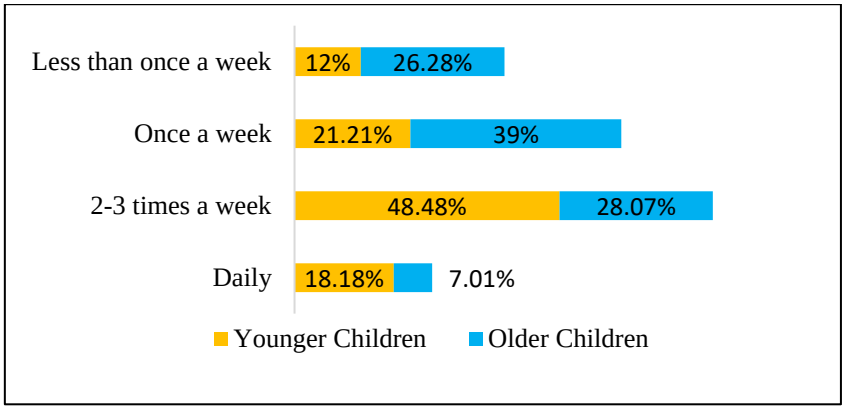
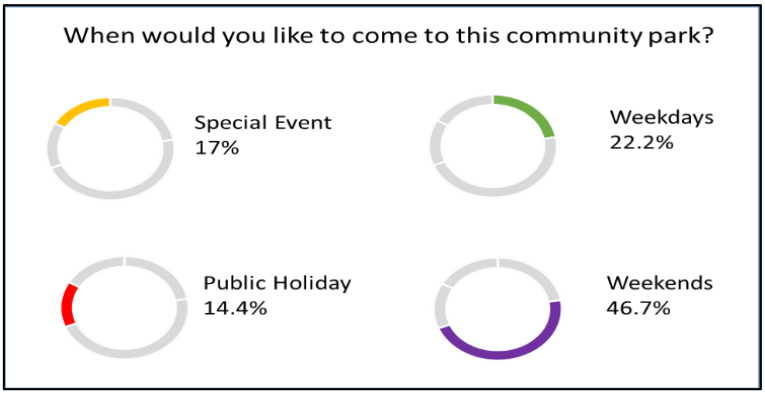


Figure 8

Visit Frequency of Respondents

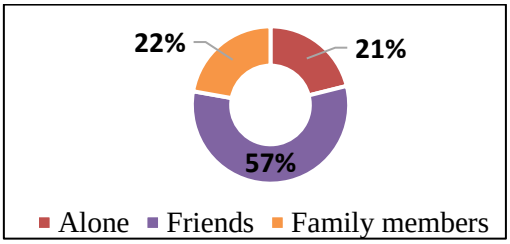


Companionship

To understand the companionship (Figure 9) of the children while visiting the park and whom to play, particularly those in the younger age group of 4-9 years, tend to play more often with family members or alone. On the other hand, as children grow older and fall into the age group of 10-15 years, they are more inclined to engage in play with their friends. This shift in play companionship highlights the evolving social dynamics and preferences of children as they transition from early childhood to adolescence**.**

Figure 9

Various Types of Companionships



Purpose of Visiting and Time Limits

It was found that children (Figure 10), particularly in the age group of 10-15 years, tend to play more often with friends rather than alone or with family members. On the contrary, younger children, aged between 4-9 years, appear to prefer playing either alone or with their family members at the park. The stark contrast in play preferences between younger and older children sheds light on the evolving social dynamics and developmental needs as children progress through different stages of childhood. It is evident that male children tend to stay in the park at higher percentages compared to their female counterparts (Figure 11). The assessment revealed that boys showed a preference for longer play durations, typically in the 1-2-hour range, while female children opted for shorter stays, mostly between 30 minutes to 1 hour.

Figure 10

Various Types of Companionships

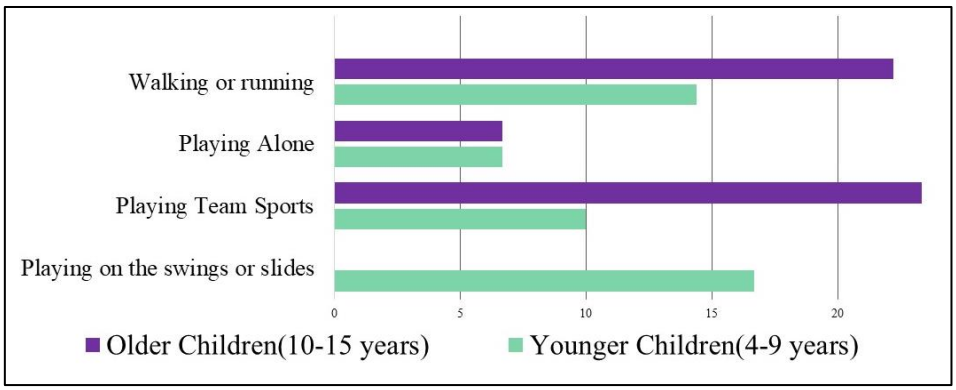
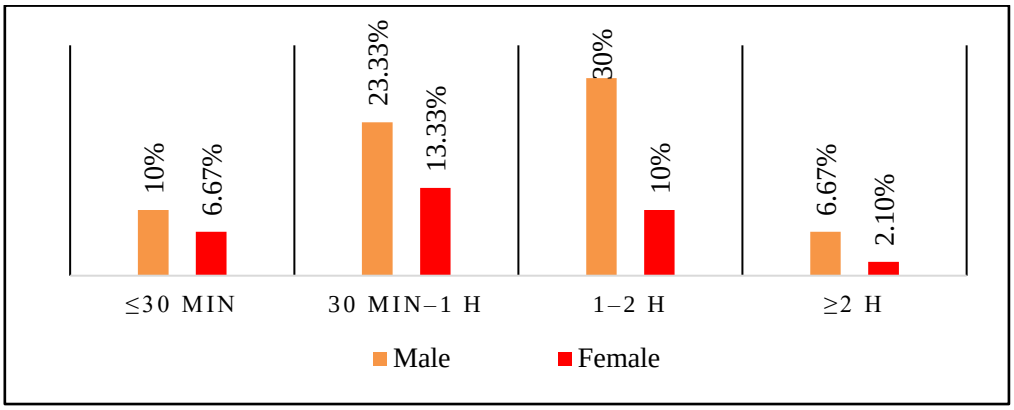


Figure 11

Spending Time Limits



Level of Satisfaction with Different Facilities

In this park, (Figure 12) 69% of participants think they have enough play equipment and 31% think they do have not enough equipment for play because some of the equipment they think it should be either repaired or changed. Justice Shahabuddin Ahmed Park has recently undergone a renovation for their visitors. The park management has taken proactive measures to ensure the safety and security of its patrons, implementing proper security arrangements. As a result, the survey revealed (Figure 13) that 54% of the participants expressed a high level of satisfaction with the park, while an additional 38% fell into the satisfied category.

Figure 12

Playing Equipment Satisfactory Level

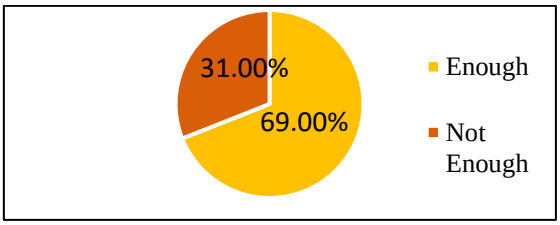
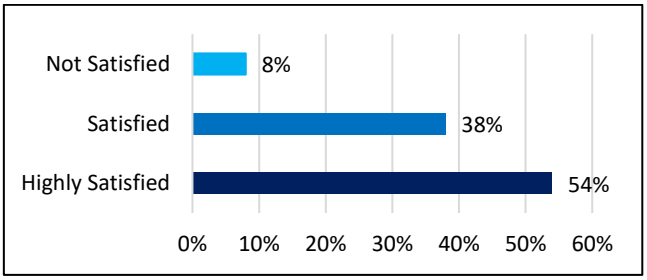


Figure 13

Security Satisfaction by Respondents



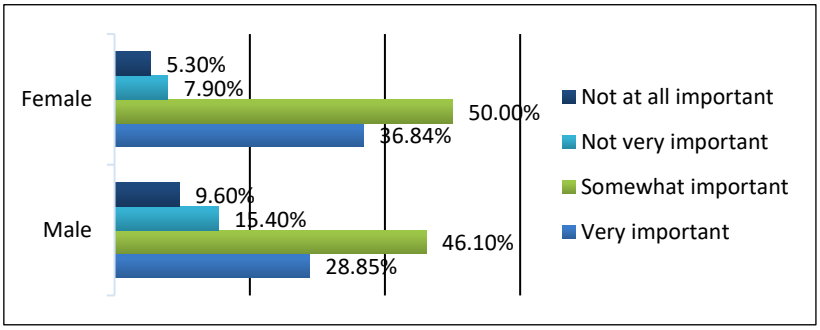
Impact of community park on children's mental and physical health

Mental Health

Figure 14 highlights a significant difference in the perceptions of female and male children regarding the importance of community parks for their mental health. However, approximately 80% of female children expressed a strong belief in the park's significance, considering it either "very important" or "somewhat important" for their mental well-being. They stated the park made them feel fresh and excited, which improved their study. They mostly ran, walked, played with pals, and chatted at the park. On the other hand, 28.85% of male participants think, the community park is "very important" for their mental health and 46.10% think it's "somewhat important". However, this percentage was almost 20% less than the female percentage. Notably, around one-fourth of male children think community parks are not very significant for their mental well-being. These findings show a gender gap in children's mental health perceptions of the park. Park's mental health benefits are valued by most female children, while many male children don't.

Figure 14

Community Park Effects on Children's Mental Health

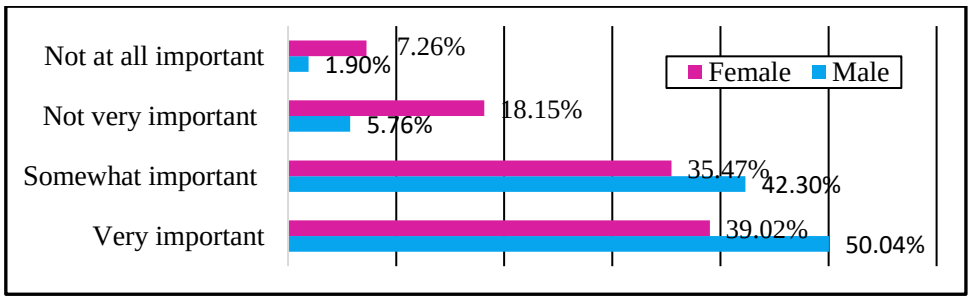


Physical Health

The data in Figure 15 reveals a significant disparity in how male and female children perceive the importance of community parks for their physical health. Unlike the findings related to mental health, the results here show a stark contrast. Approximately 90% of male children strongly believe in the park's significance, categorizing it as either "very important" or "somewhat important" for their physical well-being. They engage in various sports activities like badminton, basketball, running, and walking with friends at the park, which leaves them feeling enthusiastic, refreshed, and positively impacts their overall physical fitness and study experiences. In contrast, only 35.47% of female participants consider the community park as "very important" for their physical health, and 39.02% view it as "somewhat important." This combined percentage is roughly 25% lower than that of males. Notably, about one-fourth of female children do not find the community park very significant for their physical health.

Figure 15

Community Park Effects on Children's Physical Health



Examining Post-COVID Impact on Children: Parental Perceptions from Questionnaire Survey

The questionnaire survey included a dedicated section labeled "Parental Perceptions," aimed at evaluating the results of COVID-19 on children. This section was further segmented into three dimensions: depression, anxiety, and sleeping disorders. These dimensions were then categorized into three levels of severity: *mild, moderate, and severe*.

Table 3

The Depression, Anxiety, and Sleeping Disorder Scores of Children After the Covid-19

Variables	Mild	Moderate	Severe	p-value
Depression M (SD)	3 (1.8)	8 (2.6)	6 (2.3)	<0.001
Sleeping Disorder M (SD)	8.9 (2.4)	15.9 (3.0)	25.2(3.2)	<0.001
Anxiety M (SD)	4.9 (2.6)	9.2 (3.4)	13.4 (3.5)	<0.001

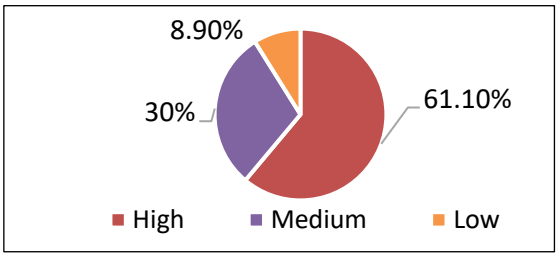
The survey findings pointed towards a prevalent issue of post-COVID sleeping disorders affecting a significant number of children (Table 3). Many parents reported disruptions in their children's daily routines, which were attributed to prolonged periods of confinement within indoor spaces during the pandemic. The lack of physical activity during this time seemingly resulted in their bodies not experiencing sufficient fatigue, ultimately leading to disrupt sleep cycles. This, in turn, posed challenges as schools resumed post-pandemic, as inadequate sleep patterns hindered children's ability to effectively engage and perform. Conversely, anxiety emerged as another significant concern impinging upon children's mental well-being. In contrast, depression was less frequent. P-values below 0.05 indicate a substantial association and impact on children's mental health.

Overall, the survey showed that children's post-COVID sleep problems and anxiety are significant. Parental views substantially linked these concerns to limited outside activity, interactions with others, and natural environments. Sleep disruptions and anxiety revealed the pandemic's challenges for children. After the Post-COVID-19 problems, the research wanted to explore the fact that, visiting the community park helps in reducing the stress and anxiety of children. In response to the question regarding the park's impact on reducing stress and anxiety, a significant majority of participants, 61.10% of participants expressed a very positive "high" response (Figure 16). Additionally, around one-third of the responders think they have

experienced a “medium” level of reducing stress and anxiety while visiting the park. These outcomes imply that many children perceive the community park to be a beneficial place for reducing stress and anxiety. The positive reactions suggest that the park setting may offer a restorative and tranquil environment, giving them an escape from the stresses of daily life.

Figure 16

Reducing Level of Stress and Anxiety



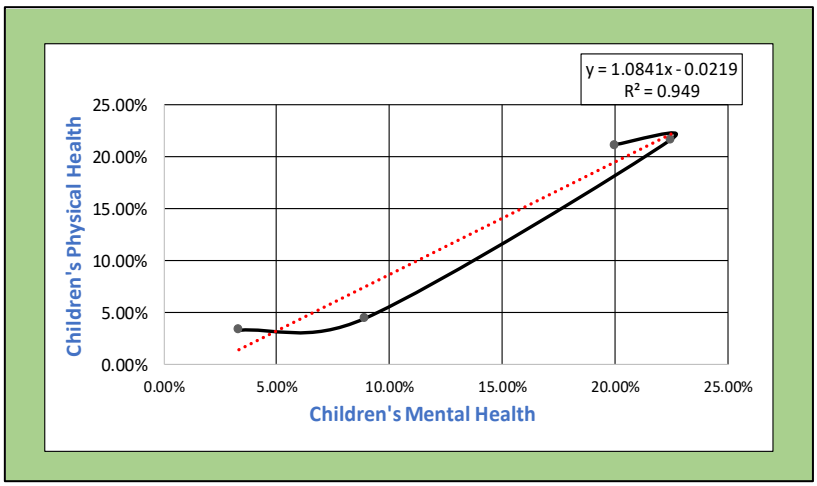
Statistical Regression Analysis

Relationship between children's mental and physical health

The relationship between children's mental and physical health while visiting a community park,which in this case is 0.0258; indicates a significant change between the variables. The coefficients associated with mental health and physical health are 0.0261 and 0.8753, respectively. These positive coefficients suggest a positive linear relationship between the variables. This indicates that as mental health improves, physical health also tends to improve, and vice versa. Moving on to the goodness-of-fit measure, in this analysis, the R-squared value is 0.949, indicating a high-level correlation between the variables. This means that approximately 95% of the variation in the output (health outcomes) can be explained by the input variable (visits to the community park). To summarize, the statistical analysis demonstrates a significant relationship between children's mental and physical health during visits to the community park. The positive coefficients and high R-squared value further confirm a positive linear relationship and suggest that park visits have a substantial impact on children's overall well-being (Figure 17).

Figure 17

Relationship Status between Mental and Physical Health

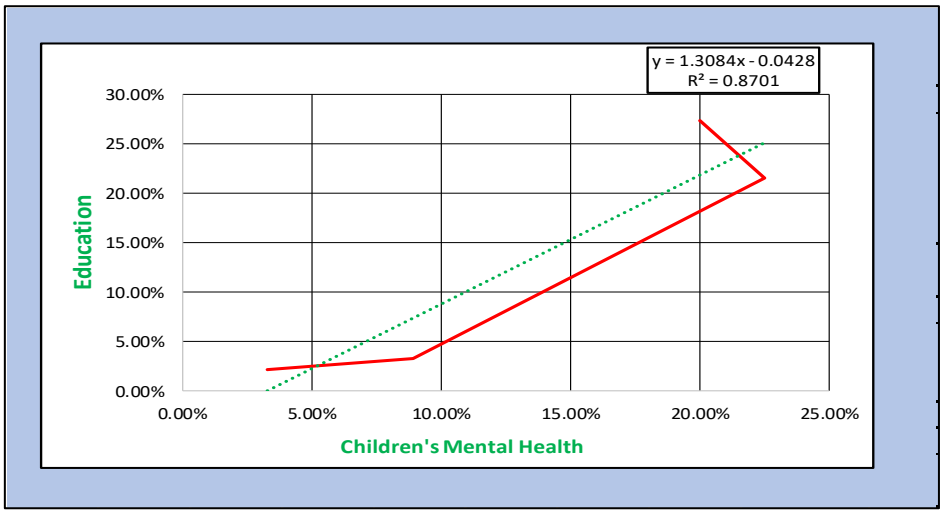


Children's Mental and Physical Health in Relation to Education Level during Community Park Visits

This statistical analysis investigates the potential relationship between *children's mental health and their education level* during visits to a community park. In this study, the computed significance level is 0.067; as a result, we do not find sufficient evidence to support a significant change between the variables. Consequently, the null hypothesis is not rejected (Figure 18).

Figure 18

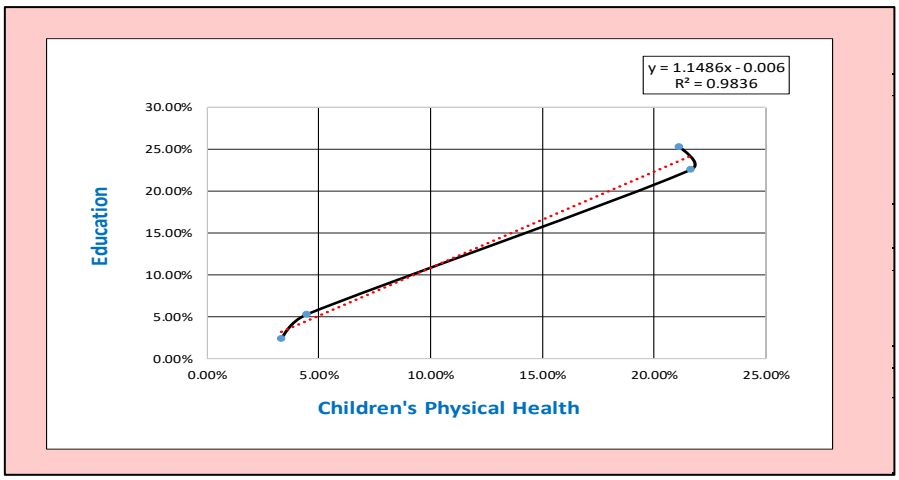
Mental Health in Relation to Education Level



The coefficients associated with mental health and education are 0.0462 and 0.665, respectively. Both coefficients are positive, indicating a positive linear relationship between the variables. This implies that an increase in one variable is associated with an increase in the other variable. In summary, the analysis does not reveal a statistically significant relationship between children's mental health and their education level during visits to the community park. This suggests that while education level during park visits might not significantly impact mental health, there remains a strong association warranting further exploration.

Figure 19

Physical Health in Relation to Education Level



This analysis investigates the relationship between *children's physical health and their education level* during visits to a community park. The significance level value is a probabilistic measure used to determine if observed results are due to random chance. In this study, the calculated significance value is 0.00825; indicates a significant change between the variables. Consequently, the null hypothesis is rejected. The coefficients for physical health and education are 0.0072 and 0.856, respectively. Both coefficients are positive, indicating a positive linear relationship between the variables. This suggests that as education level increases, physical health tends to increase as well. In conclusion, the analysis demonstrates a significant positive relationship between children's physical health and their education level during visits to the community park (Figure 19).

Findings of Key Information Interview (KII) and Focus Group Discussion (FGD)

The very first significant informant, the DNCC Executive Engineer, emphasized community parks' relevance for urban growth. He underscored the importance of these areas in improving citizens' lives and community involvement. The Justice Shahabuddin Ahmed Park renovation architect revealed the children's section design process. The architect included swings, slides, and interactive features to promote physical activity, learning, and participation. Thirdly, interviewing an experienced Dhaka urban planner revealed the challenges and strategies of protecting community parks for children's mental and physical health. The urban planner addressed conservation process inadequacies and suggested ways to make these locations children-friendly and meet urban development goals. Two Focus Group Discussions (FGDs) were held, each with between six and eight people. The majority of those attending are children and their parents. They reviewed community parks' benefits to children, resource constraints, implementation issues, and their experiences. Children of all genders agreed that communal park activities improve their well-being. Male children said sports gave them fitness and a sense of accomplishment. Additionally, the female children highlighted the mental and emotional benefits of their chosen hobbies and that the park was a place to relax and relieve tension. Discussions also included community park challenges. Participants worried about equipment and facilities being well-maintained. To give children and their parents a good time, park infrastructure must be maintained and invested in.

Table 4

Comparative Analysis of Questions and Responses between Key Information Interview (KII) and Focus Group Discussion (FGD)

Similar Questions/Topics	FGD	KII
Does Community-based parks provide a safe environment for children to play in?	✓	✓
Are there enough playing instruments/equipment in the park?		✓
Does this park have an adequate amount of green space in the environment?	✓	✓
Any positive effect on children's health?	✓	✓
Visiting the community-based park helps in reducing your stress and anxiety.	✓	✓
Notice any changes in the mental and physical well-being of children during the COVID-19 pandemic?	✓	✓
Should there be an increase in greenery within the park by planting trees?	✓	
Community parks' significance for urban development	✓	✓
Resource constraints and implementation issues		✓

[Note: (✓) If the majority of people said “yes” in this case]

The responses from both Key Information Interview (KII) and Focus Group Discussion (FGD) participants to similar questions show similarities, except for two questions "the park's equipment" and "the need for more greenery". In terms of equipment, FGD participants desire additional play options, while KII respondents believe the existing equipment suffices and this reflects the preferences among children and parents. Regarding the park's greenery, KII participants mention a planned planting of green trees during a renovation, and on the other hand, FGD participants acknowledge adequate greenery post-renovation, but now feel the park requires more vegetation cover (Table 4).

DISCUSSION

To the best of research knowledge regarding community parks and children's health, this is the first study investigating whether community-based park improves children's mental and physical health in Dhaka, a Global South megacity. The study adds to the body of knowledge about what variables inspire children in Dhaka to frequently visit community parks and experience the health advantages (both mental and physical) of exposure to natural environments. There is a notable scarcity of research on community parks and especially their impact on children's health in Dhaka. Green areas and parks may have had less of an impact on high-intensity users' frequency and duration of use because of their low availability and poor quality (Byomkesh et al., 2012). To gain a comprehensive understanding of the park's effects on children, a thorough questionnaire survey was conducted that included responses from children and their parents and also the survey of some key informants and focus group discussion. It must be underlined that there was a gender imbalance among the respondents, with more male than female minors participating. Male children tend to visit the park in higher percentages with longer play durations compared to their female counterparts. Many female children reported less evening outdoor time. Due to safety concerns, their family thought prolonged outside stays were risky. This supports another study finding, that the matter of safety is a significant concern that frequently results in children, particularly female children, being indoors or in close proximity to their residences (Islam et al., 2014).

As the research's main concern is about children's health, it evaluated the playing equipment inside the park. The survey revealed divergent opinions regarding the efficacy of park equipment and safety concerns; while the majority of respondents felt the equipment was adequate, others believed that certain items needed to be repaired or replaced. Nasar and Holloman (2013) for instance, upon closer examination, it is evident that our findings are mirrored by the data; the correlations discovered between security and equipment availability are corroborated. Communities must put reforms in their parks to the test. The participants' age distribution revealed a greater proportion of elder children than younger children. This disparity in play preferences between age groups sheds light on changing social dynamics and developmental needs during various stages of childhood. During the stages of early childhood, middle childhood, and adolescence, several benefits can be observed in terms of physical, mental, and social development, as well as the cultivation of concern and care for the natural environment (Chawla, 2021). The data suggests that younger children showed a higher level of park involvement, in contrast, older children displayed a lower level of park engagement, typically visiting only once a week. These data from the survey hint at a difference in continuous participation, which may be influenced by variables such as studies and other responsibilities, prompting older children to visit the park less regularly compared to their younger peers who attend the park more frequently. Children are more likely to spend a lot of time indoors because of the available technology (Henstra, 2016) which is also a reason for lesser visits to the community park.

It was found that these two age groups of children prefer to go to the park on the weekends, which is suggestive of the fact that leisure activities are typically prioritised during this time of the week. During

their time at the park, the majority of the children reported a high level of satisfaction. This good response demonstrated that the park's renovation and security measures were successful in establishing an environment that was friendly for its visitors, particularly the park's child guests. The park's renovation, as revealed through picture analysis, demonstrated the enormous improvement brought about by the installation of a children's play area exclusively designed for them. The modification included the installation of high-quality equipment, making the play area a more secure and fascinating place for children to spend their time. The study on how community park visits affect children's mental and physical health found that girls and boys have distinct views. The majority of female children valued the park's mental health benefits, but many male children did not agree much compared to females and agreed more with the park's benefits to their physical health. Most participants agreed that stress and anxiety reduction was beneficial. On the other hand, children's physical health during park visits is positively correlated with their education level. This finding suggests that children with higher education levels tend to experience enhanced physical and mental health benefits from their park visits. According to UNICEF, there is evidence that the physical and mental health advantages commonly associated with exercise are more readily accessed when green areas are readily available to children of all ages (Janssen & Leblanc, 2010; Chawla, 2015 Boone-Heinonen et al., 2010). The statistical analysis shows a complex landscape of linkages in children's well-being during community park visits. While mental and physical health are positively linked in children, education level has a varied effect. This complicated interaction emphasizes the need to study all aspects affecting children's community park experiences and well-being.

The parents' opinion section highlighted the pandemic's mental and physical health effects on children. After COVID-19, parents reported substantial sleep problems and anxiety in children due to decreased outdoor activities, interactions, and natural environment exposure. These findings emphasize the relevance of a supportive environment for children's mental health and relaxation. These findings are consistent with prior research conducted in other regions, which has demonstrated that the pandemic and the absence of green spaces and parks have resulted in symptoms of clinginess, dread, inattention, anxiety, sadness, and sleeping disorders in young people (Bosch et al., 2022; Aljunaidy & Adi, 2021). In a nutshell, the research showed that children gained many positive outcomes from community park experiences. Despite the fact that gender and age variations were seen in play preferences, visitor patterns, scheduling preferences, and perceptions of mental and physical health effects, the park's renovation and great visitor satisfaction showed its value as a healthy child-friendly recreation space.

RECOMMENDATIONS

This discussion proposes recommendations to enhance children's ability to better appreciate the green spaces of the community park in the future. The recommendations are as follows:

1.1 **Construct Inclusive Environments for All Users:** In parks, there is a lack of seating and shelter around the children's play area, which is crucial during the rainy season for child safety and parent-child socialisation.

1.2 **Restoring the Shelter above the Basketball Court:** During the questionnaire survey, basketball-playing children expressed concerns about the deteriorating roof above the basketball court. They highlighted that rainy weather hinders their playtime due to leaks, while sunny days become uncomfortable due to the intense heat seeping through the damaged roof. Addressing this issue is vital, especially considering that basketball is a favoured sport among children, attracting many to the park solely for this activity.

1.3 **Conduct Ongoing Monitoring and Evaluation:** Plan for continuous monitoring and assessment to ensure the intended results from any strategies are put into action. It is important to consider the potential negative outcomes, such as increase in crime, litter, and shabby facilities.

1.4 **Enhancing Play Area Durability with Impact-Resistant Sand Surfacing:** Sand can be used as an impact-resistant playground surfacing. This can prevent mud in wet weather. This handy solution keeps children's play areas clean and safe.

1.5 **Engaging in Park Events for Children's Attraction:** Enhancing park vibrancy and safety by organizing events in the park serves dual purposes of increasing its vitality and generating revenue. These events not only add excitement to the park experience, but also contribute to improved safety. Event and program sponsorships, such as art competitions, art exhibitions, craft-making sessions, story-telling, experience sharing about visiting the park, etc. are tailored for children, and can significantly enhance the park's appeal.

CONCLUSION

This study offers a comprehensive analysis of children's experiences in community parks, presenting a diverse range of valuable observations. This study investigated the relationship between community park use and children's mental and physical well-being. It also explored the preferences of parents and children for park amenities that promote frequent visits. Additionally, it examines the park features that influence their likelihood of visiting. The current condition of parks in terms of child-friendly equipment and overall health, as well as the estimated impact of park visits on children's health, was determined using a structural analysis. The statistical analysis demonstrated the correlations and effects of mental and physical health on the educational experiences of children. Turning to attribute preferences, our analysis highlights that all park attributes under consideration contribute to the visitors' overall satisfaction. Consequently, this research determines the value of investing in community parks, whether in the context of establishing new parks or enhancing existing ones. The evidence suggests that such investments can contribute significantly to children's physical health and mental well-being, thereby fostering a positive impact on their holistic development.

CONFLICT OF INTEREST

There is no conflict of interest between the authors, and the findings of research.

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REFERENCES

Alam, M. J. (2018). Rapid urbanization and changing land values in megacities: implications for housing development projects in Dhaka, Bangladesh. *Journal of Global South Bandung*, 5(1), 1-19.

Alderton, A., O'Connor, M., Badland, H., Gunn, L., Boulangé, C., & Villanueva, K. (2022). Access to and Quality of Neighbourhood Public Open Space and Children's Mental Health Outcomes: Evidence from Population Linked Data across Eight Australian Capital Cities. *Environmental Research and Public Health, 19*(4), 2132. https://doi.org/10.3390/ijerph19042132

Aljunaidy, M. M., & Adi, M. N. (2021). The psychological impact of COVID-19 quarantine on children, and the role of parental support and physical environment design. *Discover Psychology, 1*(1), 1-11. https://doi.org/10.1007/s44155-021-00002-0

Asanov, I., Flores, F., McKenzie, D., Mensmann, M., & Schulte, M. (2021). Remote-learning, time-use, and mental health of Ecuadorian high-school students during the COVID-19 quarantine. *World Development*, 138, 105225. https://doi.org/10.1016/j.worlddev.2020.105225

BBS. (2022). *Population & housing census 2022.* Dhaka: Bangladesh Bureau of Statistics.

Bedimo-Rung, A. L., Mowen, A. J., & Cohen, D. A. (2005). The significance of parks to physical activity and public health: A conceptual model. *American Journal of Preventive Medicine, 28*(2), 159-168. https://doi.org/10.1016/j.amepre.2004.10.024

Benzing, V., & Schmidt, M. (2018). Exergaming for Children and Adolescents: Strengths, Weaknesses, Opportunities and Threats. *Journal of Clinical Medicine*, *7*(11), 422. https://doi.org/10.3390/jcm7110422

Beyer, K. M., Kaltenbach, A., Szabo, A., Bogar, S., Nieto, F. J., & Malecki, K. M. (2014). Exposure to Neighborhood Green Space and Mental Health: Evidence from the Survey of the Health of Wisconsin. *International Journal of Environmental Research and Public Health*, *11*(3), 3453-3472. https://doi.org/10.3390/ijerph110303453

Byomkesh, T., Nakagoshi, N., & Dewan, A. M. (2012). Urbanization and green space dynamics in Greater Dhaka, Bangladesh. *Landscape and Ecological Engineering, 8*(1), 45–58. https://doi.org/10.1007/s11355-010-0147-7

Biddle, S. J., Gorely, T., & Stensel, D. J. (2004). Health-enhancing physical activity and sedentary behaviour in children and adolescents. *National Library of Medicine*, *78*(6), 679-701. https://doi.org/10.1136/adc.2003.033316

Boone-Heinonen, J., Casanova, K., Richardson, A. S., & Gordon-Larsen, P. (2010). Where can they play? Outdoor spaces and physical activity among adolescents in U.S. urbanized areas. *National Library of Medicine*, *41*(3), 295-298. https://doi.org/10.1016/j.amepre.2010.04.003

Bosch, R., Pagerols, M., Prat, R., Español-Martín, G., Rivas, C., M. D., . . . Casas, M. (2022). Changes in the Mental Health of Children and Adolescents during the COVID-19 Lockdown: Associated Factors and Life Conditions. *The Journal of Environmental Research and Public Health 19*(5), 2418. https://doi.org/10.3390/ijerph19052418

Cadman, D., Boyle, M., Szatmari, P., & Offord, D. R. (1987). Chronic Illness, Disability, and Mental and Social Well-Being: Findings of the Ontario Child Health Study. *American Academy of Pediatrics*, *79*(5), 805–813. https://doi.org/10.1542/peds.79.5.805

Carlon, S. L., Taylor, N. F., Dodd, K. J., & Shields, N. (2012). Differences in habitual physical activity levels of young people with cerebral palsy and their typically developing peers: a systematic review. *Disability & Rehabilitation*, *35*(8), 647-655. https://doi.org/10.3109/09638288.2012.715721

Chawla, L. (2021). *The Necessity of Urban Green Space for Children's Optimal Development.* New York: UNICEF.

Chawla, L. (2015). Benefits of Nature Contact for Children. *Journal of Planning Literature*. *30*(4), 433-452. https://doi.org/10.1177/0885412215595441

Chakraborty, D. (2019). The Climatic Condition of Bangladesh: Scenario of Dhaka. *Asian Journal of Environment & Ecology, 9*(3), 1-11. https://doi.org/10.9734/ajee/2019/v9i330097

Cohen, D. A., Han, B., Isacoff, J., Shulaker, B., Williamson, S., Marsh, T., . . . Bhatia, R. (2015). Impact of Park Renovations on Park Use and Park-based Physical Activity. *Journal of Physical Activity and Health, 12*(2), 289–295. https://doi.org/10.1123/jpah.2013-0228

Dyson, A. H. (1985).). Children out of bounds: The power of case studies in expanding visions of literacy development. In A. H. Dyson (Ed.), *National Reading Conference* (pp. 39–53). Chicago: Taylor and Francis.

Enns, C. C., & Kombe, W. J. (2023). *Child Rights and Displacement in East Africa.* New York: Routledge.

Ha, A. S., Ng, J. Y., Lonsdale, C., Lubans, D. R., & Ng, F. F. (2019). Promoting physical activity in children through family-based intervention: protocol of the "Active 1 + FUN" randomized controlled trial. *BMC Public Health*, 19, 218. https://doi.org/10.1186/s12889-019-6539-9

Hailstone, J. (2021). Why Parks Are Good For You And The Air You Breathe. *FORBES*. https://www.forbes.com

Henstra, A. (2016). Every child has the right to connect with nature. *National Geographic.*

Hossain, M. M., Nesa, F., Das, J., Aggad, R., Tasnim, S., Bairwa, M., . . . Ramirez, G. (2022). Global burden of mental health problems among children and adolescents during COVID-19 pandemic: An umbrella review. *National Library of Medicine*, 9, e11063. https://doi.org/10.1002/ijgo.14063

Hossain, S. T., & Tasnim, Z. (2020). Study on the Importance of Open Space Due to Create Dhaka as a Child Friendly City. *Asian Journal of Social Sciences and Legal Studies*, *2*(2), 96-103. https://doi.org/10.34104/ajssls.020.0960103

Hossan, S. (2023). Lack of Playground in Dhaka City: Why Dhaka Has Less Playgrounds*?* Dhaka: Business Inspection.

Islam, M. J. (2022). A city where children can't play. Dhaka: The Business Standard.

Islam, M. Z., Moore, R., & Cosco, N. (2014). Child-Friendly, Active, Healthy Neighborhoods: Physical Characteristics and Children's Time Outdoors. *Environment and Behavior*, *46*(7), 803-835. https://doi.org/10.1177/0013916512470134

Jahan, I. (2021). Parents perceptions on the need of community based play centers for the children aged 2-5 years in Dhaka city. Dhaka: Brac Institute of Educational Development.

Jahan, M. (2012). Impact of rural urban migration on physical and social environment: The case of Dhaka city. *International Journal of Development and Sustainability*, *1*(2), 186-194.

James, P., Banay, R. F., Hart, J. E., & Laden, F. (2015). A Review of the Health Benefits of Greenness. *Environmental Epidemiology Reports, 2*(2), 131–142. https://doi.org/10.1007/s40471-015-0043-7

Janssen, I., & Leblanc, A. G. (2010). Systematic review of the health benefits of physical activity and fitness in school-aged children and youth. *International Journal of Behavioral Nutrition and Physical Activity, 7*(1), 40. https://doi.org/10.1186/1479-5868-7-40

Jones, N., Devonald, M., Dutton, R., Baird, S., Yadete, W., & Gezahegne, K. (2021). Disrupted education trajectories: Exploring the effects of Covid-19 on adolescent learning and priorities for "building back better" education systems in Ethiopia. *Development Policy Review, 39*(6), 1-20. https://doi.org/10.1111/dpr.12507

Kamble, S., Joshi, A., Kamble, R., & Kumari, S. (2022). Influence of COVID-19 Pandemic on Psychological Status: An Elaborate Review. *National Library of Medicine*, *3*(2), 91-104. https://doi.org/10.1002/jclp.23141

Karapetian, A. M., & Johnson, G. J. (2005). Enhancing Resilience in Children: A Proactive Approach. *Professional Psychology: Research and Practice, 36*(3), 238–245. https://doi.org/10.1037/0735-7028.36.3.238

Koipysheva, E., Lebedinsky, V., & Koipysheva, M. (2018). Physical Health (Definition, Semantic Content, Study Prospects. *European Proceedings*, *23*(1), 123-131.

Ługowska, K., Kolanowski, W., & Trafialek, J. (2023). Increasing Physical Activity at School Improves Physical Fitness of Early Adolescents. *International Journal of Environmental Research and Public Health, 20*(2), 214. https://doi.org/10.3390/ijerph20020214

Labib, S., Shuvo, F. K., Browning, M. H., & Rigolon, A. (2020). Noncommunicable Diseases, Park Prescriptions, and Urban Green Space Use Patterns in a Global South Context: The Case of Dhaka, Bangladesh. *International Journal of Environmental Research and Public Health, 17*(18), 6315. https://doi.org/10.3390/ijerph17186315

Lee, A., & Maheswaran, R. (2011). The health benefits of urban green spaces: a review of the evidence. *Journal of Public Health*, *33*(2), 212–222. https://doi.org/10.1093/pubmed/fdq068

Lo, A. Y., & J, C. Y. (2020). Differential community effects on perception and use of urban greenspaces. *Cities*, 97, 430-442.

Mani, M., Mohammad, A. A., Saeed, A. (2012). The Importance of Well-Designed Children'sPlay-Environments in Reducing Parental Concern. *Middle-East Journal of Scientific Research, 11* (9), 1176-1184. https://doi.org/10.5829/idosi.mejsr.2012.11.09.987

Nasar, J. L., & Holloman, C. H. (2013). Playground Characteristics to Encourage Children to Visit and Play. *Journal of Physical Activity and Health*, *10*(8), 1201-1208.

Nawar, N., Sorker, R., Chowdhury, F. J., & Rahman, M. M. (2022). Present status and historical changes of urban green space in Dhaka city, Bangladesh: A remote sensing driven approach. *Environmental Challenges*, 7, 100425. https://doi.org/10.1016/j.envc.2021.100425

Neema, M., & Ohgai, A. (2010). Multi-objective location modeling of urban parks and open spaces: Continuous optimization. *Computers, Environment and Urban Systems*, *34*(5), 359-376.

Neema, M. N., Hossain, M. R., Haque, A. M., & Farhan, M. (2014). Multi-Criteria Evaluation of Quality of Existing Urban Parks in Dhaka City - Towards Achieving Livable City. *International Journal of Environment*, *4*(1), 1-15.

Nawar, N., Sorker, R., Chowdhury, F. J., & Rahman, M. M. (2022). Present status and historical changes of urban green space in Dhaka city, Bangladesh: A remote sensing driven approach. *Environmental Challenges, 7*, 100425. https://doi.org/10.1016/j.envc.2021.100425

Pedrosa, A. L., Bitencourt, L., Fróes, A. C., Cazumbá, M. L., Campos, R. G., Brito, S. B., & Silva, A. C. (2020). Emotional, Behavioral, and Psychological Impact of the COVID-19 Pandemic. *Health Psychology*, *39*(8), 650-667.

Rahman, K. M., & Zhang, D. (2018). Analyzing the Level of Accessibility of Public Urban Green Spaces to Different Socially Vulnerable Groups of People. *Sustainability*, *10*(9), 3329. https://doi.org/10.3390/su10093329

Rigolon, A., Browning, M. H., Lee, K., & Shin, S. (2018). Access to Urban Green Space in Cities of the Global South: A Systematic Literature Review. *Urban Science, 2*(3), 67. https://doi.org/10.3390/urbansci2030067

Rozario, L. G., & Islam, S. (2022). SCENARIO OF MENTAL HEALTH IN BANGLADESH: A SIGNATURE GLIMPSE. *Dhaka University Journal of Biological Science*, *31*(1), 49-58.

Rowland, T. W., & Freedson, P. S. (1994). Physical Activity, Fitness, and Health in Children: A Close Look. *American Academy of Pediatrics*, 669–672.

Saika, U., & Kikuchi, T. (2017). Classification of Urban Parks and their Regional Characteristics in Dhaka City, Bangladesh. *Journal of Environmental Science and Engineering*, *6*(1), 41-54.

Shieh, R.-S., & Chang, W. (2014). Fostering student's creative and problem-solving skills through a hands-on activity. *Journal of Baltic Science Education, 13*(5), 650-661.

Siddiqy, M. R. (2017). Urban environment and major challenges in sustainable development: Experience from Dhaka City in Bangladesh. *South East Asia Journal Of Public Health, 7*(1), 12-16.

Solmi, M., Radua, J., Olivola, M., Croce, E., Soardo, L., Pablo, G. S., . . . Fusar-Poli, P. (2022). Age at onset of mental disorders worldwide: large-scale meta-analysis of 192 epidemiological studies. *Molecular Psychiatry, 27*(2), 281-295.

Tabassum, S., & Sharmin, F. (2013). Accessibility Analysis of Parks at Urban Neighborhood: The Case of Dhaka. *Asian Journal of Applied Science and Engineering, 2*(1), 48-61.

Tabassum, S. (2018). Environmental Response of Small Urban Parks in Context of Dhaka City. *Journal of Physics Conference Series*. 997, 012003. https://doi.org/10.1088/1742-6596/997/1/012003

United Nations Environment Programme. (2006). *Annual Report*. UNEP.

UNICEF. (2018). *UNICEF Child Friendly Cities and Communities Handbook*. United Nations Children's Fund.

UNICEF. (2021). *The necessity of urban green space for children's optimal development.* United Nations Children's Fund.

Vliet, W., & Karsten, L. (2015). Child-Friendly Cities in a Globalizing World: Different Approaches and a Typology of Children's Roles. *Children, Youth and Environments (CYE), 25(2)*, 1-15.

World Health Organization. (2020). *Bangladesh WHO Special Initiative for Mental Health Situational Assessment.* WHO.

World Health Organization; 2022. *Bangladesh WHO Special Initiative for Mental Health Situational Assessment.* WHO.

World Health Organization. (2022). *Mental health.* WHO.

Wadood, M. A., Huq, M. M., Mamun, A. S., L.-L. L., Mohd, S., & Hossain, M. G. (2021). Psychological Distress among Bangladeshi Adults during the Covid-19 Pandemic: A Cross-sectional Study. *Journal of Life Science*, 13(1-2), 1-10.

Whitney, D. G., Peterson, M. D., & Warschausky, S. A. (2019). Mental health disorders, participation, and bullying in children with cerebral palsy. *Developmental Medicine & Child Neurology*, *61*(8), 937-942.

Wilson, D. (2022). *Becoming child-friendly: A participatory and post-qualitative study of a child and youth friendly community strategy.* (Doctoral dissertation, University of British Columbia).

Wolf, K., & Schmitz, J. (2024). Scoping review: longitudinal effects of the COVID-19 pandemic on child and adolescent mental health. European child & adolescent psychiatry, 33(5), 1257-1312.

Zafri, N. M., Jahangir, A., Prithul, A. A., Rahman, M., Sharmin, N., & Islam, I. (2019). Who uses urban parks? A study of user characteristics and activity patterns of Ramna Park, Dhaka. International Journal of Architecture and Urban Development, 9(2), 5-14.

Zandt, S. (2013). The impact of zoning regulations on thermal comfort in non-conditioned housing in hot, humid climates: findings from Dhaka, Bangladesh. *Journal of Housing and the Built Environment*, 29, 677–697.

Zhang, J., Cheng, Y., & Zhao, B. (2021). How to accurately identify the underserved areas of peri-urban parks? An integrated accessibility indicator. *Ecological Indicators*, 122, 107549. https://doi.org/10.1016/j.ecolind.2021.107549