

Impact of Playground on Children's Mental and Physical Health

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Abstract: Playgrounds play a vital role in promoting the overall development and well-being of children by providing opportunities for physical activity, social interaction, recreation, and cognitive growth. In contemporary urban environments, where access to open spaces is increasingly limited, playgrounds serve as essential community resources that support both the mental and physical health of children. Regular engagement in playground activities contributes to improved physical fitness, motor skill development, coordination, and healthy growth, while also fostering emotional stability, stress reduction, creativity, and social competence. This study aims to investigate the impact of playgrounds on children's mental and physical health by examining how the availability, quality, and usage of playground facilities influence various aspects of child development. The research explores the relationship between playground participation and physical health indicators such as exercise frequency, physical fitness, and active lifestyles, as well as mental health factors including emotional well-being, self-confidence, concentration, and social interaction. A combination of field observations, surveys, and literature-based analysis is employed to assess the effectiveness of playground environments in supporting healthy childhood development. The analysis focuses on key parameters including playground accessibility, safety, recreational facilities, user engagement, and patterns of physical activity. The study seeks to identify the benefits and challenges associated with playground use and to evaluate their contribution to children's overall health and quality of life. The findings are expected to provide valuable insights for urban planners, architects, educators, and policymakers in developing child-friendly recreational spaces. Furthermore, the research highlights the importance of well-designed playgrounds as a sustainable strategy for enhancing children's physical fitness, mental well-being, and social development in urban communities.

Keywords: Playground, Children's Health, Mental Health, Physical Health, Child Development, Physical Activity, Recreational Spaces, Social Interaction, Well-Being, Urban Play Environment.

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I. INTRODUCTION

Playgrounds are essential components of child-friendly urban environments and play a significant role in supporting the physical, mental, and social development of children. In recent years, growing urbanization, increased screen time, and reduced access to outdoor recreational spaces have raised concerns regarding children's health and well-being worldwide. As a result, the provision of safe and accessible playgrounds has become increasingly important in promoting healthy childhood development and active lifestyles [1,2]. Physical activity is widely recognized as a fundamental requirement for children's growth and development. Regular participation in outdoor play contributes to improved

cardiovascular fitness, muscular strength, motor skill development, coordination, and overall physical health. According to the World Health Organization (WHO), children should engage in adequate daily physical activity to maintain healthy physical and psychological development [3]. Playgrounds provide opportunities for running, climbing, jumping, and other forms of active play that help children achieve recommended activity levels while reducing the risk of childhood obesity and related health problems [4,5]. Beyond physical benefits, playgrounds also contribute significantly to children's mental health and emotional well-being. Outdoor play environments encourage creativity, imagination, problem-solving skills, and self-confidence while reducing stress, anxiety, and emotional fatigue.

Research has shown that exposure to outdoor recreational spaces positively influences children's cognitive functioning, attention span, and emotional resilience [6,7]. Playgrounds also offer opportunities for social interaction, cooperation, and peer engagement, which are critical for the development of communication skills, social competence, and emotional intelligence [8]. The design and quality of playground environments greatly influence their effectiveness in supporting children's development. Factors such as accessibility, safety, equipment diversity, green spaces, maintenance, and inclusiveness determine the frequency and quality of playground use [9]. Well-designed playgrounds encourage active participation among children of different age groups and abilities, fostering both physical exercise and positive social experiences. Furthermore, the integration of natural elements such as trees, vegetation, and open green areas has been found to enhance restorative experiences and psychological well-being among children [10]. In many developing countries, including Bangladesh, rapid urban expansion has led to a decline in available open spaces and recreational facilities for children. Densely populated urban neighborhoods often lack adequate playgrounds, limiting opportunities for outdoor play and physical activity. Consequently, concerns regarding sedentary lifestyles, childhood obesity, social isolation, and mental health challenges have become increasingly prominent among urban children [11]. Addressing these issues requires a better understanding of the relationship between playground environments and children's overall health outcomes. Although numerous international studies have investigated the role of outdoor play in child development, limited research has specifically examined the combined impact of playgrounds on both mental and physical health within the context of Bangladesh. Therefore, this study aims to evaluate the influence of playground environments on children's mental and physical well-being by examining key factors such as physical activity levels, social interaction, emotional development, and recreational engagement. The findings are expected to provide valuable insights for architects, urban planners, educators, and policymakers in developing healthier and more inclusive recreational environments for children. Furthermore, the research highlights the importance of investing in quality playground infrastructure as a sustainable strategy for promoting children's health, well-being, and overall quality of life.

➤ *Aim and Objectives*

The aim of this study is to investigate the impact of playgrounds on children's mental and physical health through questionnaire surveys and field observations. The research seeks to understand how playground environments contribute to children's overall well-being by promoting physical activity, social interaction, emotional development, and healthy lifestyles. Particular attention is given to the accessibility, safety, facilities, and usage patterns of playgrounds and their influence on children's health and development. The objectives of the study are to assess the role of playgrounds in improving children's physical health, including physical activity levels, fitness, and motor skill development. The study also aims to examine the influence of playground use on children's mental health and emotional

well-being, including self-confidence, stress reduction, social interaction, and psychological development. Furthermore, field observations are conducted to evaluate the existing conditions, safety features, accessibility, and recreational facilities of the selected playgrounds. Through questionnaire surveys, the research investigates the perceptions of children, parents, and guardians regarding the benefits and challenges associated with playground use. Finally, the study aims to identify the strengths and limitations of existing playground environments and provide recommendations for creating healthier, safer, and more child-friendly recreational spaces that support children's mental and physical well-being.

II. METHODOLOGY

This study employs a mixed-method research approach to investigate the impact of playgrounds on children's mental and physical health. The research combines quantitative data collected through questionnaire surveys with qualitative information obtained from field observations conducted at Dhupkhola Playground, Old Dhaka. This approach provides a comprehensive understanding of how playground environments influence children's physical activities, social interactions, emotional well-being, and overall development. Quantitative data were collected through structured questionnaire surveys administered to children and parents/guardians who regularly use the playground. A total of 90 respondents participated in the survey, including 40 children and 50 parents/guardians. The questionnaire was designed to gather information regarding playground usage patterns, frequency and duration of visits, types of activities performed, perceived physical health benefits, social interactions, and the influence of playground activities on children's emotional and mental well-being. The responses were systematically recorded and analyzed to identify patterns and relationships between playground use and children's health outcomes. In addition to the questionnaire survey, qualitative data were collected through direct field observations conducted at the playground. The observational survey focused on evaluating the physical condition of the playground, accessibility, safety measures, maintenance status, availability of play equipment, and user behavior. Particular attention was given to children's participation in physical activities, social engagement, and interaction with playground facilities. Environmental factors such as cleanliness, availability of green spaces, seating arrangements, and overall user comfort were also assessed during the field observation process.

A descriptive analytical approach was employed to evaluate the collected data and examine the relationship between playground characteristics and children's mental and physical health. Questionnaire responses were analyzed using descriptive statistical methods, including frequency distribution, percentage analysis, and comparative interpretation. The findings obtained from field observations were used to support and validate the survey results by providing contextual information regarding actual playground conditions and user experiences. The combined

analysis of questionnaire surveys and field observations provides a comprehensive assessment of the role of playgrounds in promoting children's physical fitness, emotional well-being, and social development. The methodology enables the identification of both the benefits and limitations of existing playground environments and contributes to the development of recommendations for creating healthier, safer, and more child-friendly recreational spaces that support children's overall well-being.

III. RESULTS AND DISCUSSION

This section presents the findings obtained from the questionnaire survey and field observations conducted to assess the impact of playgrounds on children's mental and physical health. The results are discussed in terms of playground usage patterns, physical health benefits, mental well-being, social interaction, and the overall condition of the playground environment. The findings provide insights into how playground facilities contribute to children's development and quality of life. The questionnaire survey revealed that most children regularly visit playgrounds and participate in various physical activities such as running, jumping, climbing, and group games. The responses indicate that frequent playground use contributes positively to physical fitness, active lifestyles, and the development of motor skills. Parents and guardians also reported that children who regularly engage in outdoor play tend to be more energetic and physically active compared to those with limited access to recreational spaces. The survey findings further suggest that playgrounds have a significant positive influence on children's mental health and emotional well-being. Many respondents stated that outdoor play helps children reduce stress, improve mood, build self-confidence, and develop a sense of independence. The opportunity to interact with peers within the playground environment was found to enhance communication skills, teamwork, and social relationships. These findings highlight the important role of playgrounds in supporting psychological development and emotional stability among children. Field observations supported the survey results by demonstrating active participation and engagement among playground users. Children were observed using various play equipment and engaging in both individual and group activities. The observations also revealed that playgrounds with adequate facilities, proper maintenance, and safe environments attracted higher levels of participation and longer durations of use. Conversely, areas with damaged equipment, insufficient maintenance, or limited recreational facilities showed lower user engagement and activity levels. The observational analysis further indicated that environmental factors such as cleanliness, accessibility, availability of green spaces, and seating arrangements influence the overall user experience. Playgrounds that offered a comfortable and safe environment encouraged greater physical activity and social interaction among children. The presence of natural elements such as trees and open green spaces also appeared to enhance the recreational experience and contribute to a more pleasant environment. Overall, the combined findings from the questionnaire survey and field observations

demonstrate that playgrounds play a vital role in promoting children's physical health, mental well-being, and social development. The results emphasize the importance of providing safe, accessible, and well-maintained playground facilities to support healthy childhood development. Furthermore, the study highlights the need for continued investment in child-friendly recreational spaces as an essential component of sustainable and healthy urban environments.

➤ Analysis of Questionnaire Survey (Children Respondents):

• Q1. Do You Enjoy Playing in the Playground?

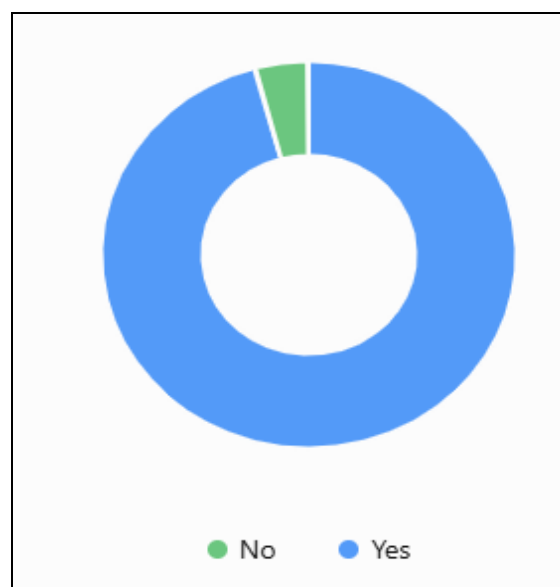


Fig 1 Children's Enjoyment of Playing in the Playground

Fig. 1 presents the results of the questionnaire survey conducted among children regarding their enjoyment of playground activities. The findings indicate that 96% of the respondents reported that they enjoy playing in the playground, while only 4% expressed a negative response. This demonstrates that playgrounds are highly attractive and enjoyable recreational spaces for children. The high percentage of positive responses suggests that playgrounds provide opportunities for fun, physical activity, and social interaction. Children who enjoy playground activities are more likely to engage in outdoor play, which contributes to improved physical fitness, motor skill development, and overall well-being. Furthermore, enjoyable playground environments encourage active lifestyles and reduce sedentary behavior. Overall, the results highlight the important role of playgrounds in promoting children's happiness, recreation, and healthy development.

- Q2. Do You Feel Happy After Playing in the Playground?

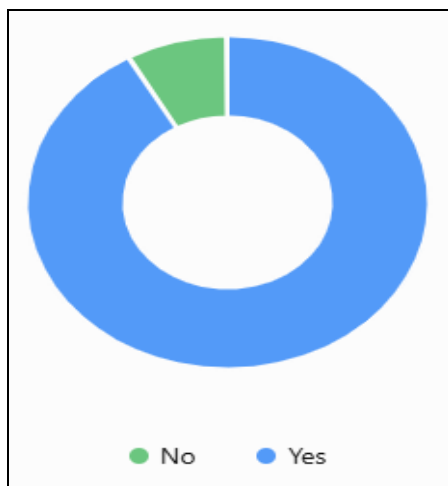


Fig 2 Children's Happiness After Playing in the Playground

Fig. 2 illustrates the responses of children regarding their feelings after playing in the playground. The survey results reveal that 92% of respondents reported feeling happy after participating in playground activities, whereas 8% expressed a negative response. These findings indicate that playgrounds have a positive influence on children's emotional well-being and overall mood. Playing in the playground provides children with opportunities for recreation, social engagement, and physical exercise, all of which contribute to feelings of happiness and satisfaction. The results suggest that playground activities help reduce stress, improve emotional well-being, and encourage positive social interactions among children. Therefore, playgrounds play a significant role in supporting both the mental and emotional development of children.

➤ *Analysis of Questionnaire Survey (Parents/Guardians Respondents):*

- Q3. Does the Playground Help Reduce Children's Screen Time and Sedentary Behavior?

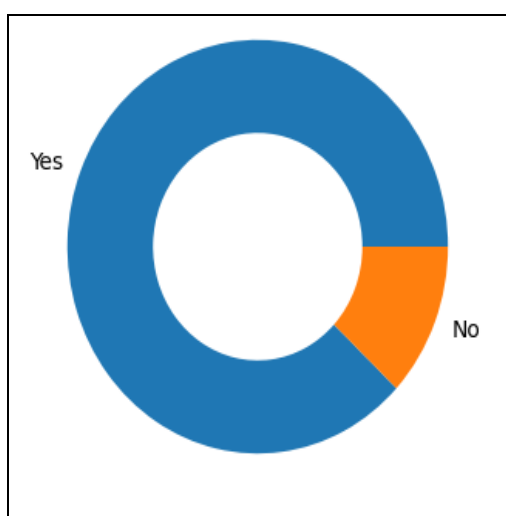


Fig 3 Parents' Perception of Playground Influence on Screen Time and Sedentary Behavior.

Fig. 3 presents the responses of parents and guardians regarding the influence of playground use on children's screen time and sedentary behavior. The survey results indicate that 88% of respondents agreed that regular playground use helps reduce children's dependence on mobile phones, television, and other screen-based activities, while 12% disagreed. These findings suggest that playgrounds encourage children to spend more time outdoors and participate in physical activities rather than engaging in sedentary behaviors. Regular playground visits provide opportunities for active play, social interaction, and recreational engagement, which can significantly reduce excessive screen exposure. The results highlight the important role of playgrounds in promoting healthier lifestyles and encouraging children to adopt more physically active daily routines. Overall, the findings demonstrate that playgrounds contribute positively to reducing screen time and supporting children's physical and mental well-being.

- Q4. Overall, How Satisfied are You with the Playground Environment and its Contribution to Children's Health?

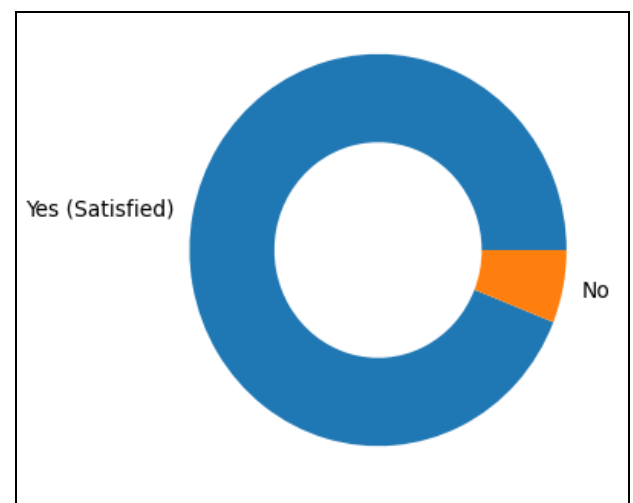


Fig 4 Parents' Satisfaction with Playground Environment and Its Contribution to Children's Health.

Fig. 4 illustrates the level of satisfaction among parents and guardians regarding the overall playground environment and its contribution to children's health. The survey findings reveal that 94% of respondents were satisfied with the playground environment, whereas 6% expressed dissatisfaction. The high level of satisfaction indicates that parents recognize the positive contribution of playgrounds to children's physical fitness, mental well-being, and social development. Respondents reported that playgrounds provide safe and enjoyable environments where children can engage in physical activities, develop friendships, and improve their overall quality of life. The findings further suggest that well-maintained and accessible playgrounds play a significant role in supporting healthy childhood development. Overall, the results demonstrate strong parental support for playground facilities and emphasize the importance of investing in quality recreational spaces for children.

IV. FINDINGS

The findings of this study are based on questionnaire surveys and field observations conducted to assess the impact of playgrounds on children's mental and physical health. The results indicate that playgrounds play a significant role in promoting children's overall well-being by encouraging physical activity, social interaction, and emotional development. Firstly, the study found that playgrounds provide valuable opportunities for children to engage in regular physical activities such as running, jumping, climbing, and playing group games. The majority of children reported enjoying playground activities, suggesting that playgrounds encourage active lifestyles and contribute positively to physical fitness, motor skill development, and overall health. Regular participation in outdoor play was observed to reduce sedentary behavior and promote healthier daily routines among children. Secondly, the findings reveal that playgrounds have a positive impact on children's mental and emotional well-being. Most children reported feeling happy after spending time in the playground, indicating that outdoor play contributes to improved mood, reduced stress, and greater emotional satisfaction. Field observations further demonstrated that playground environments encourage creativity, self-confidence, and social engagement through interaction with peers and participation in recreational activities. The study also found that playgrounds serve as important spaces for social development. Children were frequently observed interacting with friends, participating in group activities, and developing communication and teamwork skills. These social experiences contribute to the development of positive relationships and enhance children's social competence and emotional resilience. Furthermore, the responses from parents and guardians indicate that playground use helps reduce children's screen time and sedentary behavior. Many parents agreed that regular playground visits encourage children to spend more time outdoors and less time using electronic devices such as mobile phones, televisions, and computers. Parents also expressed a high level of satisfaction with the playground environment and its contribution to their children's physical and mental health. Field observations revealed that playgrounds with adequate facilities, safe equipment, proper maintenance, and accessible locations attracted higher levels of participation and user engagement. Conversely, deficiencies in maintenance, safety measures, or recreational facilities were found to limit the effectiveness of playgrounds and reduce user satisfaction. Overall, the findings confirm that playgrounds have a significant positive impact on children's mental and physical health. Well-designed and properly maintained playground environments promote physical fitness, emotional well-being, social interaction, and healthy childhood development. The study highlights the importance of investing in safe, accessible, and child-friendly playgrounds as essential components of healthy and sustainable urban communities.

V. CONCLUSION

Playgrounds are recognized as important elements of child-friendly environments, contributing significantly to children's physical, mental, and social well-being. This study examined the impact of playgrounds on children's mental and physical health through questionnaire surveys and field observations. The findings indicate that playgrounds serve as valuable spaces for promoting physical activity, reducing sedentary lifestyles, enhancing emotional well-being, and fostering social interaction among children.

The results show that children generally enjoy participating in playground activities and experience positive emotions after engaging in outdoor play. Regular use of playgrounds supports physical fitness, motor skill development, and the adoption of healthier lifestyles. In addition, playground environments encourage social interaction, cooperation, and friendship-building, which contribute positively to children's emotional and psychological growth.

The study further revealed that parents and guardians acknowledge the beneficial role of playgrounds in supporting their children's overall health and well-being. A majority of respondents reported that playground use helps minimize screen time and motivates children to engage in more active and meaningful recreational activities. The high level of parental satisfaction emphasizes the importance of providing accessible, safe, and well-maintained playground facilities.

Field observations demonstrated that factors such as safety, accessibility, maintenance, and the availability of adequate play equipment have a considerable influence on children's participation and overall user experience. Playgrounds that offer secure and well-equipped environments tend to attract greater levels of engagement and physical activity, thereby supporting healthy childhood development.

Overall, the findings confirm that playgrounds make a substantial contribution to children's mental and physical health. Therefore, urban planners, architects, local authorities, and policymakers should prioritize the development, improvement, and maintenance of inclusive and child-friendly playgrounds. Investment in high-quality playground infrastructure can play a vital role in creating healthier, more active, and socially connected communities while supporting the long-term well-being and development of children.

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