

**Parental Perceptions on Climate Change & Associated  
Environmental Hazards and Its Influence on Outdoor Play  
Opportunities for Children aged 3-5 years in Urban  
Bangladesh**

By  
Fauzia Sultana  
ID-23255008

A thesis submitted to BRAC Institute of Educational Development,  
Partial fulfillment of the requirements for the degree of Master of Science in  
Early Childhood Development

Brac Institute of Educational Development  
BRAC University  
December 2025

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## **Declaration**

It is hereby declared that

1. The thesis submitted is my own original work while completing degree at BRAC University.
2. The thesis does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.
3. The thesis does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.
4. I have acknowledged all main sources of help.
5. I would like to request the embargo of my thesis for 6M from the submission date in order to safeguard my intellectual property, as I would like to apply for journal publication.

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**Fauzia Sultana**

Student ID: 23255008

## Approval

The thesis titled “Parental Perspective on Climate Change & Associated Environmental Hazards and Its Influence on Outdoor Play Opportunities for Children Aged 3-5 Years in Urban Bangladesh” submitted by Fauzia Sultana, Student ID: 23255008 of Fall 2023 has been accepted as satisfactory in partial fulfilment of the requirements for the degree of Master of Science in Early Childhood Development (ECD) in December, 2025.

### Examining Committee:

Supervisor:  
(Member)

---

Mohammad Safayet Khan  
Research Fellow  
Brac Institute of Educational Development  
Brac University

Program Coordinator:  
(Member)

---

Ms. Ferdousi Khanom  
Senior Lecturer, ECD Academic Program  
Brac Institute of Educational Development  
Brac University

External Expert Examiner:  
(Member)

---

Dr. Dilruba Sultana  
Senior Lecturer, M.Ed. Department  
Brac Institute of Educational Development  
Brac University

Departmental Head:  
(Chair)

---

Dr. Erum Mariam  
Executive Director  
Brac Institute of Educational Development  
Brac University

## **Ethics Statement**

**Title of Thesis Topic:** *Parental Perspective on Climate Change & Associated Environmental Hazards and Its Influence on Outdoor Play Opportunities for Children Aged 3–5 Years in Bangladesh*

**Student Name:** Fauzia Sultana

1. Source of population:  
Parents of 3 to 5 years old children living in urban areas of Dhaka and Chittagong City.
2. Does the study involve (Yes or No):
  - a) Physical risk to the subjects - No
  - b) Social risk - No
  - c) Psychological risk to subjects - No
  - d) Discomfort to subjects - No
  - e) Invasion of privacy - No
3. Will subjects be clearly informed about (Yes or No):
  - a) Nature and purpose of the study - Yes
  - b) Procedures to be followed - Yes
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  - g) Confidential handling of data - Yes
  - h) Compensation and/or treatment where there are risks or privacy is involved - Yes
4. Will signed or verbal consent be required (Yes or No):
  - a) From study participants - Yes
  - b) From parents or guardians - Yes
  - c) Will precautions be taken to protect anonymity of subjects? - Yes
5. Check documents being submitted herewith to Committee:
  - a) Proposal - Yes
  - b) Consent Form - Yes
  - c) Interview Schedule/IDI and FGD Guide - Yes

### **Ethical Review Committee:**

Authorized by:  
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---

Dr. Erum Mariam  
Executive Director  
Brac Institute of Educational Development  
Brac University

**Abstract:**

Rapid urbanization and environmental changes in Bangladesh, particularly in urban areas like Dhaka and Chittagong, have significantly reduced children's access to outdoor play spaces. This situation has affected children's physical activity, social interaction, and overall well-being. The present study explores parents' perspectives on climate change and its influence or consequences on outdoor play opportunities for children aged 3-5 years in urban areas of Bangladesh. Using a qualitative research design, data were collected through in-depth interviews (IDIs) and focus group discussions (FGDs) with parents from different socio-economic groups in various urban locations. The findings reveal that parents recognize outdoor play as essential for children's physical, cognitive, and emotional development; however, environmental degradation, rising temperatures, and urban pollution have limited children's safe access to outdoor spaces. Parents also expressed growing concern about the importance of outdoor intervention ensuring safety and reduced physical activity among their children. The study highlights the urgent need for community-based initiatives, green urban planning, and parental awareness programs to ensure children's right to safe and healthy outdoor play.

**Keywords:** Parental Perspective; Climate Change; Environmental Hazards; Outdoor Play; Urban Children; Early Childhood Development; Urban Bangladesh.

## **Dedication**

First and foremost, I am deeply grateful to Almighty Allah for granting me the strength, willpower, and patience to successfully complete the journey of my master's degree. I dedicate this thesis to my beloved parents, Muhammad Khurshed Alam and Monowara Alam, whose unwavering love and encouragement have nurtured my passion for early childhood development and guided me throughout my educational journey. My heartfelt gratitude goes to my former mentor Rayana Parveen - the Vice Principal of my school, whose guidance and belief in my potential inspired me to pursue this degree at Brac University. I am deeply thankful to my spouse, Eng. Hosney Mobarak, for his constant support, patience, and unconditional love. Above all, I dedicate this work to my precious children - Radwa, Rushda, and Raheen - whose smiles and inspiration give meaning to all my efforts.

## **Acknowledgement**

All praise and gratitude are due to Allah, the Most Merciful, for His countless blessings, guidance, and mercy. It is only by His grace that I was given the strength, patience, and perseverance to complete this research.

I am profoundly grateful to my supervisor, Mohammad Safayet Khan, Senior Research Fellow at BRAC Institute of Educational Development, BRAC University, for his invaluable guidance, encouragement, and continuous support throughout this journey. His insightful feedback, motivation, and patience have been instrumental in helping me refine my ideas and complete this study successfully.

I would also like to thank BRAC Institute of Educational Development, BRAC University, for providing me with the resources, environment, and opportunity to conduct this research. The support and inspiration I received from the institute have greatly enriched my learning and research experience.

Finally, I am deeply thankful to my family for their unwavering love, encouragement, and prayers. Their constant support has been my source of strength and motivation, and I could not have reached this milestone without them.

## **Glossary:**

**Outdoor Play:** Activities that children engage outside their homes or schools, providing opportunities for physical activity, social interaction, cognitive exploration, and emotional development.

**Climate Change:** Long-term changes in temperature, rainfall patterns, and other aspects of the Earth's climate, mainly caused by human activities such as greenhouse gas emissions, leading to environmental and social impacts.

**Urban Hazard:** Environmental, physical, or social risks in urban areas—such as air pollution, traffic congestion, unsafe infrastructure, flooding, and overcrowding—that threaten human health, safety, and well-being.

**Climate Change Awareness:** Parents' understanding and perceptions of climate change, including its causes, impacts, and potential effects on children's health, safety, and play opportunities.

**Risk Perception:** How parents interpret and assess potential hazards in the environment (e.g., air pollution, extreme heat, flooding), which influences decisions about children's outdoor activities.

**Child-Centered Urban Planning:** Planning and designing urban spaces that prioritize children's needs, including safe, accessible, and stimulating outdoor areas for play, learning, and development.

**Climate-Resilient Urban Planning:** An approach to urban development that integrates climate risk reduction and adaptation strategies to help cities withstand, adapt to, and recover from climate-related impacts such as flooding, heatwaves, and environmental degradation.

**Parental Perception:** Parents' beliefs, opinions, and understanding regarding environmental, social, or cultural factors that affect their children's experiences and behaviors.

**Socio-Economic Background:** An individual's or family's social and economic conditions - such as income, education, occupation, and living environment that influence lifestyle, opportunities, and access to resources.

**Urbanization:** The process of city growth and expansion, which can impact the availability of safe, open, and green spaces for children's outdoor play.

**Parental Protective Behavior:** Actions taken by parents to prevent potential harm or risk to their children, which may include limiting outdoor activities due to safety or environmental concerns.

**Environmental Stressors:** Physical or social factors in the environment (e.g., extreme weather, pollution, overcrowding) that pose challenges to children's outdoor play and development.

**Play Opportunities:** Availability and accessibility of spaces, resources, and conditions that allow children to engage in play and active exploration safely.

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## **List of Acronyms**

AC - Air Conditioner

BAF - Bangladesh Air Force

BIP - Bangladesh Institute of Planners

BUET - Bangladesh University of Engineering and Technology

CCRI - Children's Climate Risk Index

CDC - Centers for Disease Control and Prevention

CFC - Chlorofluorocarbon

CRC - Committee on the Rights of the Child

ECD - Early Childhood Development

FGDs - Focus Group Discussions

IDIs - In-Depth Interviews

IPCC - Intergovernmental Panel on Climate Change

IPD - Institute for Planning and Development

LMICs - Low- and Middle-Income Countries

PM2.5 - Particulate Matter (particles with a diameter of 2.5 micrometers or smaller)

RAJUK - Rajdhani Unnayan Kartripakkha

SDGs - Sustainable Development Goals

UNCRC - United Nations Convention on the Rights of the Child

UNDP - United Nations Development Program

UNICEF - United Nations Children's Fund

# Chapter-1

## Introduction & Background

### *Introduction:*

Climate change, closely associated with global warming, stands as one of the most critical global issues of the 21st century, significantly affecting both natural ecosystems and human societies (Ragavan, 2021; Lagally, 2021). These impacts create substantial challenges to the achievement of the Sustainable Development Goals (SDGs) and are increasingly influencing every aspect of human life, including the daily experiences and development of young children (Corraya, 2022). However, in the context of urban Bangladesh, rising temperatures, adverse air quality, flooding, and unpredictable weather events all these hostile consequences are already beginning to impact the routines and activities that support children's development, mostly the outdoor play of the children (Kabir et al, 2016; UNDP, 2022). Here, particularly in metropolitan areas like Dhaka, the population is increasing at an alarming rate, leading to overcrowded neighborhoods, lack of playgrounds and safety concern (UNICEF, 2020). Outdoor play, a type of unstructured performance in an active form has long been recognized as fundamental to the healthy growth and development of children (Lee, Tremblay & Kim, 2025), especially those who are in the age range of 3-5 years. For them, outdoor play is not only a recreational activity but also an obligatory component of their cognitive, physical, and socio-emotional development (Ginsburg, 2007). For this age group, regular outdoor play is also crucial for enhancing motor skills and fostering creativity and imagination enhancing the sense of wonder and curiosity, the combination of physical activity and cognitive skill (Charan & Khurana, 2024). In the context of Bangladesh, particularly in metropolitan

areas like Dhaka and Chittagong, the urban population is increasing at an alarming rate, leading to overcrowded neighborhoods, lack of playgrounds and safety concern.

Globally numerous studies have also emphasized the nurturing benefits of open-air play, underlining its prominence in determining early childhood practices (Brussoni et al., 2015). While the benefits of outdoor play are well established, children's opportunities to engage in such activities are increasingly shaped by climate-related challenges with more regular and dangerous weather events by the end of the century (Daly et al ., 2024), thus the connection between climate change, environmental hazards, and early childhood development (ECD) deserves careful attention, yet it remains understudied, particularly from the parental perspective. Parents as primary caregivers play a pivotal role in shaping their children's access to and engagement with openair environments. In urban settings, their perceptions and decisions are significantly influenced by environmental hazards, concerns over safety, and health risks posed by climate conditions (Bartlett, 2008). In city background, concrete surroundings, limited green spaces, poor air quality and high population density already limit open space play opportunities. And climate-related environmental hazards add another layer of concern for parents who must consider the benefits of nature-based play activities against potential health risks (Begum & Wesely, 2021). Children are particularly vulnerable to these risks due to their developing immune systems and higher rates of physical activity (UNICEF, 2021). It can be said that, urbanization and climate change are closely interconnected, as rapidly expanding cities contribute to increased greenhouse gas emissions, reduced vegetation, and greater heat accumulation. These environmental changes intensify climate-related hazards such as urban heat islands, poor air quality, and extreme weather events, which directly affect children's outdoor play opportunities and overall well-being. So,

as urbanization intensifies and the impacts of climate change become more pronounced, understanding how parents perceive these challenges is essential for reforming responsive policies and play-based interventions in early childhood settings.

### ***Statement of the Problem:***

Outdoor play is a cornerstone of early childhood development, contributing significantly to children's overall well-being (Backstrom, Lundgreen & Slaus, 2024). It fosters creativity, knowledge, problem-solving skills, physical coordination, and social interaction, while also helping children develop a connection to their natural surroundings (Kiviranta et al., 2024). For children aged 3-5 years, this form of play is especially crucial as it coincides with a sensitive period of brain and body development (Ginsburg, 2007). However, the growing threat of climate change directly jeopardizes children's ability to enjoy these essential outdoor experiences. Rising temperatures, increased air pollution, and more frequent extreme weather events reduce the availability of safe and comfortable outdoor environments for young children. As a result, the developmental benefits of outdoor play such as physical growth, sensory exploration, and nature-based learning are increasingly at risk, especially for children living in densely populated urban areas. By the end of the century, almost 3 billion people may live outside the optimal temperature range, with children facing a disproportionate impact on their health and overall well-being (Xu et al., 2020). Furthermore, in rapidly urbanizing and climate-strained cities like Dhaka and Chittagong, children's developmental opportunities are increasingly threatened (UNICEF Bangladesh, 2021; Rahaman et al., 2023). Environmental challenges including high air pollution, rising temperatures, unpredictable rainfall and weather pattern, and scarce green spaces have proliferated. These conditions are exacerbated

by extreme heatwaves, persistent smog, and flash floods creating unsafe and unhealthy environments for young children. For instance, a BUET study on urban green spaces in Dhaka found that only about 8.5 % of the city's land has tree cover - well below the 20 % considered necessary for a healthy urban environment (BUET, 2023). Open spaces in Dhaka have shrunk drastically from approximately 150 to just 24 fields over the past two decades (The Business Standard, 2025; RAJUK, 2023; Bangladesh Institute of Planners [BIP], 2023). Such spatial loss has tangible repercussions: the lack of safe play areas contributes to childhood obesity, mental stress, and developmental challenges (Rahman, 2025; Dhaka Tribune, 2025; urban planners and child development experts).

Given these environmental hazards, parents often feel compelled to restrict outdoor activities to safeguard their children's health. Indoor spaces may seem safer, particularly amid concerns about traffic accidents, crime, vector-borne diseases like dengue, and respiratory illnesses. While aimed for children's protection, such decisions unintentionally deprive children of essential developmental experiences. This situation reflects a broader socio-environmental crisis, as a result children's fundamental right to play is being compromised by environmental and infrastructural barriers.

Although existing literature recognizes the developmental value of outdoor play and highlights how environmental factors shape children's outdoor time, empirical evidence connecting parental perceptions of climate-related risks to play decisions remains scarce. Studies in diverse settings show that parents often limit outdoor play due to weather extremes and environmental safety concerns (Martínez-Baena et al., 2024; Ding et al., 2012; Lee et al., 2023), yet these works do not explicitly examine

climate change as a determinant. In the context of urban Bangladesh, parents' experiences, attitudes, and coping strategies related to climate-induced challenges are largely undocumented, leaving a critical gap in understanding how environmental anxieties translate into caregiving behaviors.

Overall, this study seeks to fill this gap by investigating how urban parents perceive climate change and connecting environmental hazards and the influence of the play environments and experiences they provide for their children. By understanding these parental views, it will be possible to develop responsive early childhood policies, design child-friendly urban infrastructures, and support parents in fostering holistic child development in a changing climate. Without this understanding, policy interventions may fail to address the root causes of reduced outdoor activity, resulting in strategies that are misaligned with parental needs and concerns.

***Purpose of the Study:***

The primary purpose of this study is to explore and understand how parents of young children aged 3-5 years in urban areas of Bangladesh perceive climate change and related environmental hazards and how these insights influence their decisions and practices regarding outdoor play of their children. As the country faces increasing environmental challenges as mentioned before, children's opportunities for safe and stimulating outdoor play are being diminished. Parents, as the closest and most influential figures in a child's early life, often make daily decisions based on their perceptions of environmental safety and risk. This research seeks to investigate how such climate-related concerns are understood by parents and how these understandings affect the frequency, location, duration, and nature of outdoor play for their children.

This study also intends to fill a critical gap in existing literature by focusing specifically on the parental perspective within the urban Bangladeshi context, a setting where climate-induced changes are becoming increasingly evident. By understanding how parents assess environmental risks and adapt their caregiving practices, this research aims to provide valuable insights into the socio-cultural and ecological barriers to outdoor play in early childhood. The findings will inform early childhood development policies, urban planning, and parenting programs to support developing healthy, climate-resilient environments for young children. Ultimately, the study seeks to promote holistic child well-being in the face of climate-related risks by acknowledging and addressing the realities faced by urban families in Bangladesh. It also aims to contribute to the broader discourse on early childhood development (ECD) in the context of climate change and climate-related threats in the urban environment, especially in the Global South, where children face a disproportionate share of climate-related risks.

### ***Significance and Justification of the Study:***

While outdoor play is crucial for children's development; urban environments in Bangladesh, particularly Dhaka and Chittagong, often lack adequate spaces for such activities, posing challenges to children's growth and well-being (Institute for Planning and Development [IPD], 2022; Chowdhury, 2024). Over recent decades, children's participation in outdoor play has noticeably declined, influenced by various climate hazards such as increasing extreme weather events, floods, unpredictable rainfall, air pollution, and smog, all of which are reshaping children's opportunities for outdoor play (Burdette & Whitaker, 2005; UNICEF Bangladesh, 2024; Hossain & Hossain, 2024)). Openair play, an essential aspect of early childhood development, is

increasingly overshadowed by parental fears, environmental risks, and the realities of urban living. A study highlighted in *Frontiers in Psychology* emphasizes that children's regular interaction with nature-based play is associated with higher levels of cognitive functioning and emotional resilience (Dr. Sajal Chowdhury, 2024). Given this, the significance of the present study becomes evident, it aims to explore how these overlapping concerns shape the decisions and perceptions of parents with children aged 3 to 5 years in urban Bangladesh.

Open-air play builds resilience, problem-solving skills, and creativity, competencies foundational for lifelong learning (Ginsburg, 2007). Additionally, by involving children into natural environment helps to lessen stress, create positive feelings, and also builds constructive psychological activity (Simkin, Ojala, and Tyravainen 2020). Therefore, it is important to stay connected with nature and engage in outdoor activities instead of having a sedentary lifestyle (Lindfors et al., 2024). However, growing threats such as climate change, extreme heat, mosquito-borne diseases, poor air quality for the increased level of carbon dioxide and other harmful gases in the environment, and traffic hazards often lead parents to limit outdoor activities for their children. Understanding the reasoning behind such decisions is key to designing interventions that strike a balance between safety and development. As we know, in the urban areas of Bangladesh, especially in megacities like Dhaka and Chittagong, limited access to open, green, and safe play zones has become a growing concern. This situation is further complicated by the lack of child-centered urban design, insufficient policies protecting children's right to play, and a general absence of climate-sensitive ECD programming (Ministry of Planning, 2023; Dr. Sajal Chowdhury, 2024; Bangladesh Institute of Planners, 2020). By focusing on parental

perceptions, this study seeks to illuminate a crucial but under-researched factor influencing early childhood experiences in the context of climate change.

Parents, being the primary gatekeepers of children's daily routines and experiences, are often left to make critical decisions about their children's exposure to outdoor environments without adequate support or information. Their perceptions, shaped by both lived experience and societal messages, become powerful determinants of children's activity levels, freedom, and interaction with the natural world (Carver et al., 2010). This study is justified in its focus on the voices of parents, whose experiences and concerns are often overlooked in both academic research and policy formulation. Moreover, while climate change research has expanded globally, there is limited empirical evidence from low- and middle-income countries (LMICs) like Bangladesh that captures the intersection of climate issues, parenting behavior, and early childhood development. Much of the existing literature draws from high-income contexts mostly from developed countries, failing to reflect the unique challenges faced by families in developing urban environments. This study addresses that gap by providing local data and highlighting the urgent need for environment-resilient urban planning that focuses on the developmental needs of children. Practically, the findings of this research can guide educators, ECD program developers, urban planners, and policymakers in creating supportive environments that promote outdoor play while acknowledging climate-related constraints. At a broader level, this study contributes to the movement toward integrating climate adaptation strategies into early childhood education frameworks in countries highly vulnerable to environmental changes. In summary, all these insights gained will not only strengthen the knowledge on climate change and early childhood development but also inform more inclusive and

responsive policies that uphold children's rights to play, grow, and thrive even in a changing climate.

***Research Questions:***

The research questions for this study have been developed to explore the central phenomenon, how parental perceptions of climate change influence outdoor play opportunities for children aged 3-5 years in urban Bangladesh. These questions are designed to guide the qualitative inquiry, helping to uncover the thoughts, feelings, concerns, and decisions of parents who are navigating climate-related challenges in everyday caregiving. Since this is a phenomenological study, the questions are open-ended and exploratory in nature, aiming to capture the depth and diversity of parents' lived experiences. To guide this inquiry, the study focuses on the following open-ended research questions:

1. How do parents perceive the influence of climate change and associated hazards in the urban environment and its influence or consequences on their children's outdoor play opportunities?
2. What specific concerns do parents express regarding environmental safety and outdoor play in the context of urban climate conditions?

Together, these research questions will direct the data collection and thematic analysis processes, allowing the study in helping to construct a clear picture of how climate change and its threatening impacts, through the lens of parental perception shapes young children's opportunities and access to outdoor play in the urban context of Bangladesh.

## **Chapter-2**

### **Literature Review**

The literature review explores key themes relevant to this research: the impacts of climate change and environmental hazards in urban childhoods, the importance of outdoor play in early childhood development, the parental role in enabling or restricting outdoor play, how climate change is perceived within the Bangladeshi context, and how observing and connecting these views with some thematic areas provide a foundation for understanding the intersection of environmental challenges, parenting, and child development.

#### ***Impacts of Climate Change & Environmental Hazards in Urban Childhoods:***

Climate change is not only an environmental crisis but also a profound child rights and development issue (Committee on the Rights of the Child [CRC], 2023). Rapid urbanization combined with climate change has created significant environmental challenges in major cities of Bangladesh, particularly Dhaka and Chittagong. High population density, unplanned urban growth, and environmental mismanagement have increased urban vulnerability to climate-related risks. Climate change and urban hazards do not operate independently; rather, they interact and intensify one another, resulting in complex and interconnected urban environmental problems (UN-Habitat, 2020). Children are among the most vulnerable groups affected by climate-related events such as extreme heat, air pollution, rising sea levels, and flooding (UNICEF, 2022). In urban settings, these challenges are often magnified due to high population density, traffic congestion, industrial activity, and poor infrastructure (Intergovernmental Panel on Climate Change [IPCC], 2022). According to Bartlett (2008), urban children in low- and middle-income countries are increasingly exposed

to environmental hazards that compromise their health, safety, and well-being. For instance, Dhaka, one of the most polluted cities in the world, experiences dangerously high levels of particulate matter (PM<sub>2.5</sub>), which severely affects young children's respiratory health (Islam, Rahman, & Hasan, 2020). In addition to physical health risks, climate change in urban settings affects children's everyday experiences. Outdoor play becomes limited not just by the weather, but by the deteriorating quality of the environment (Procter, 2022). Urban heat islands, a phenomenon where cities experience significantly higher temperatures than surrounding areas have been observed in Dhaka and Chittagong, which further discourages outdoor activity for children, especially during peak summer months (World Bank, 2021). Furthermore, changes in monsoon rainfall patterns, including irregular timing and increased rainfall intensity, have disrupted natural hydrological cycles. In some cases, prolonged dry periods are followed by short episodes of heavy rainfall, increasing climate variability and environmental instability in cities such as Dhaka and Chittagong (World Bank, 2021). Alongside climate change, rapid and unplanned urbanization has contributed to severe urban environmental risks. Air pollution remains a critical concern due to high traffic congestion, industrial emissions, construction activities, and the widespread use of fossil fuels. These factors contribute to increased concentrations of carbon dioxide and particulate matter, leading to deteriorating air quality in major cities (World Health Organization [WHO], 2022). Additionally, the loss of green spaces, excessive concretization, and inadequate urban infrastructure have further reduced environmental resilience. Poor drainage systems and ineffective waste management exacerbate urban environmental risks, particularly during the monsoon season (World Bank, 2020). So, heavy and sudden rainfall events, combined with inadequate drainage infrastructure, frequently result in waterlogging, disrupting daily activities

and limiting access to outdoor spaces (UN-Habitat, 2020). Furthermore, increased energy consumption during heatwaves, combined with traffic congestion and industrial emissions, worsens air quality, posing serious health and environmental risks (WHO, 2022). Overall, the compounded effects of climate change and urban hazards reduce urban livability and disproportionately affect vulnerable populations. In particular, these environmental challenges restrict children's opportunities for safe outdoor play, physical activity, and social interaction in urban settings, with potential long-term implications for their health and development.

### ***Importance of Outdoor Play in Early Childhood:***

Recent studies have increasingly acknowledged the health advantages of spending time in natural environments, particularly through physical activities conducted outdoors (Maddock & Frumkin, 2024). According to the study of (Centers for Disease Control and Prevention [CDC], 2023), open-space play is widely recognized as a vital component of early childhood development as it supports children's motor skills, cognitive development, emotional regulation, and social competence (Betto & Dias, 2017). Nature-based play has been linked with reduced stress levels, increased attention span, and better overall well-being (Fjørtoft, 2004). Outdoor environments provide children with opportunities to explore, take risks, and connect with the natural world experiences that cannot be fully replicated indoors (Kids First Services, 2024). A wide range of global research also has underscored the benefits of outdoor play, highlighting its vital role in influencing early childhood development and experiences (Brussoni et al., 2015). However, urban children often experience "play deprivation" due to the lack of safe, accessible, and stimulating outdoor spaces (Candiracci, 2025). Chowdhury (2019) noted that children living in Dhaka have limited access to playgrounds or parks and that most public play areas are either overcrowded or poorly

maintained. This deprivation is worsened in poor urban neighborhoods, where safe spaces for play are almost nonexistent. Climate changes further limit these spaces, with flooding, pollution, and extreme heat making outdoor areas less usable and less desirable for parents and children alike (Sultana, 2025).

### ***Parental Role in Play Facilitation:***

Parents play a central role in shaping young children's play experiences. They make decisions about where, when, and how children can play based on their perceptions of safety, cleanliness, and environmental conditions (Veitch et al., 2006). Carver, Timperio, and Crawford (2008) demonstrated that parents who perceive their neighborhoods as unsafe or unhealthy tend to limit their children's outdoor play. These limitations may stem from concerns about crime, traffic, pollution, or health risks like sunburn or respiratory illness. In the context of Bangladesh, these concerns are often heightened by frequent climate events. All these perceptions may vary depending on their social and educational background. Parents may choose to keep children indoors to avoid exposure to mosquito-borne diseases such as dengue, or due to the fear of sudden rain, poor air quality, or high UV exposure (Lancet Countdown report, 2025; PubMed study, 2024). Although these decisions are motivated by a desire to protect children, they often result in missed opportunities for physical activity, social interaction, and experiential learning. Studies have shown that risk-averse parenting practices are becoming more common in urban environments affected by climate instability (Little & Wyver, 2008).

### ***Climate Change Perceptions of Parents in the context of Bangladesh:***

While Bangladesh has been identified as one of the most vulnerable countries to climate change, public awareness and perception vary greatly across regions and

demographic groups. Ahsan, Karuppannan, and Kellett (2011) found that while many people recognize climate variability, they may not have a clear understanding of the scientific causes or long-term consequences of climate change. Urban populations often experience the effects of climate change in very tangible ways such as increased flooding, heat stress, and worsening air pollution even if they do not frame these experiences explicitly as “climate change,” and for many urban parents these risks are lived concretely through daily caregiving and environmental concerns (Lampard, 2022). For instance, parents observe changes to their children’s health (such as frequent illnesses during heatwaves or smog episodes) and disruptions to routines (due to flooding, water contamination, vector borne disease, or unsafe air), all of which influence how they interpret environmental risks. In Bangladesh, one study found that urban parents are acutely aware of climate-related challenges affecting their children’s physical health, mental well-being, learning, and immunity - effects they relate directly to caregiving responsibilities rather than labeling them as “climate change” phenomena (Corraya, 2022). These environmental challenges are immensely creating adverse impact on health, nutrition, education, and safety, especially harming young children who are vulnerable (UNICEF, The Climate crisis is a Child Crisis, 2021). Concerns about children’s health and safety influence how they interpret weather patterns, air quality, and environmental changes. UNICEF (2022) introduced the Children’s Climate Risk Index (CCRI), which ranks Bangladesh among the top countries where children are at “extremely high risk” due to climate hazards. These risks are not only environmental but also socio-economic, affecting children’s access to education, healthcare, and safe play environments. Despite these concerns, few studies have examined how parents in Bangladesh connect these environmental challenges with decisions about play and recreation for their children.

### ***Theoretical Framework***

This study is guided by five interrelated theoretical frameworks: Bronfenbrenner's Ecological Systems Theory (1979), Vygotsky's Sociocultural Theory (1978), Risk Perception Theory (Slovic, 1987), Piaget's Cognitive Development Theory (1952), and Self-Determination Theory (Deci & Ryan, 1985).

Together, these frameworks provide a complete understanding of how parental perceptions of climate change influence the developmental experiences of children aged 3–5 years in urban Bangladesh. Bronfenbrenner (1979) and Vygotsky (1978) highlight the interconnected environmental and sociocultural contexts through which parents shape children's early understanding and responses to climate-related issues. Slovic's Risk Perception Theory (1987) explains how parents interpret climate-related risks and translate those perceptions into protective behaviors and decisions regarding their children's outdoor play. Piaget's Cognitive Development Theory (1952) provides insight into how young children in the preoperational stage process and internalize environmental information conveyed by parents. Finally, Deci and Ryan's Self-Determination Theory (1985) accentuates how parental modeling and engagement in climate-conscious practices can foster children's intrinsic motivation and sense of responsibility toward the environment.

Collectively, these theories form the conceptual foundation for exploring how parental beliefs, knowledge, and behaviors related to climate change and related perils influence the cognitive, emotional, and social development of young children within the unique socio-environmental context of urban Bangladesh.

### **1. Bronfenbrenner's Ecological Systems Theory (1979)**

This theory explains how a child's development is shaped by different layers of environmental influence - ranging from the immediate family and school (microsystem) to broader social and cultural contexts (macrosystem). In the context of this study, parental perceptions of climate change (Chronosystem) can be viewed as part of the microsystem that directly affects how young children understand and emotionally respond to environmental issues within their everyday surroundings.

### **2. Vygotsky's Sociocultural Theory (1978)**

Vygotsky emphasized that children learn and develop through social interactions and cultural experiences. Parents act as primary mediators who introduce ideas, values, and behaviors. Therefore, parents' awareness and attitudes toward climate change can significantly shape children's early environmental understanding and attitudes through guided communication and shared experiences.

### **3. Risk Perception Theory (Slovic, 1987)**

This theory explores how individuals interpret and emotionally respond to potential risks based on cognitive, cultural, and social factors. In this study, it helps explain how parents perceive the risks of climate change - such as health threats, environmental hazards, or future insecurity and how these perceptions influence their communication, behavior, and protective actions toward their children.

### **4. Piaget's Cognitive Development Theory (1952)**

Piaget proposed that children's understanding evolves through stages of cognitive growth. Children aged 3-5 years are in the preoperational stage, characterized by

symbolic thinking but limited logical reasoning. Parental interpretation and communication about climate change thus play a crucial role in shaping children's early awareness and emotional associations with environmental phenomena.

### **5. Self-Determination Theory (Deci & Ryan, 1985)**

This theory highlights that motivation arises from three basic psychological needs - autonomy, competence, and relatedness. Parents who model environmentally responsible behavior and involve children in small climate-positive actions (e.g., planting, saving water) can nurture intrinsic motivation and environmental responsibility from an early age.

### ***Integrating the Frameworks***

Together, these five theoretical perspectives provide a comprehensive, multi-dimensional understanding of how environmental, cognitive, social, and motivational factors intersect in shaping parental perceptions and children's early development within the context of climate change. Bronfenbrenner's Ecological Systems Theory places children within multiple environmental layers, illustrating how parental responses to climate risks directly influence children's immediate developmental settings. Vygotsky's Sociocultural Theory complements this by emphasizing that parental guidance and cultural communication shape parents' own interpretations, beliefs, and decision-making processes regarding environmental issues, which in turn influence how they manage their children's outdoor play. Risk Perception Theory helps explain how parents assess climate-related threats - such as heat, air pollution, and flooding and how these perceptions motivate protective behaviors or adaptations affecting children's daily routines and play. Additionally, Piaget's Cognitive

Development Theory provides insight into how children aged 3-5 cognitively process these environmental messages within their developmental stage, while Self-Determination Theory highlights how supportive parental involvement can nurture intrinsic motivation and a sense of environmental responsibility from early childhood.

In urban Bangladesh, where rapid urbanization amplifies exposure to heat, flooding, and pollution, these integrated frameworks allow for a deeper interpretation of how macro or chrono level environmental conditions and micro-level parental beliefs converge to influence children's play, learning, and wellbeing. Ultimately, this synthesis underscores that young children's right to safe development within climate change is both an ecological, psychological, and socio-cultural concern (UNICEF, 2021; Procter, 2022).

### ***Gaps in Literature:***

Despite a growing body of research on climate change, early childhood development and play, there is limited practical evidence that brings these aspects together within the Bangladeshi urban context. Most studies tend to focus either on the environmental impacts of climate change or on child development outcomes in isolation (Akter, 2024; Kabir et al., 2021). Very few have examined the intersection of parental perceptions, environmental change, and child-rearing practices related to play (Simkin, Ojala, & Tyrväinen, 2020). This gap is particularly significant given that parental decision-making is a key factor in shaping children's daily experiences and developmental opportunities (Nini, 2021). Understanding how parents perceive and respond to climate-related risks is essential for designing responsive interventions that protect children's rights to play, health, and development in a shifting environment (Hossain, 2025).

Furthermore, while Bronfenbrenner's Ecological Systems Theory (1979) emphasizes that children's development is influenced by interconnected environmental systems ranging from family and school (microsystem) to societal and environmental contexts (macrosystem and chronosystem) - few studies in Bangladesh have explored how these systems interrelate under the stress of climate change. Similarly, Risk Perception Theory (Slovic, 1987) offers insights into how parents interpret environmental threats and how these perceptions influence their behavioral choices regarding children's outdoor play. Yet, there remains a lack of empirical research applying these theoretical lenses to understand parental behaviors and decision-making within urban Bangladeshi contexts.

Therefore, the existing literature shows a clear theoretical and contextual gap. Most research has not sufficiently addressed how parents' ecological contexts and perceived environmental risks intersect to shape children's outdoor play opportunities in changing climate conditions. Addressing this gap through a theoretically grounded exploration of parental perceptions can provide a more complete understanding of how climate change indirectly influences early childhood experiences and rights to play in urban Bangladesh.

## **Chapter-3**

### **Methodology**

The methodology effectively captured the authentic voices of parents by delving into their lived experiences, perceptions, and decision-making processes regarding climate change and its influence on children's outdoor play in urban Bangladesh. Through detailed in-depth interviews and focused group discussions, the study uncovered rich,

context-specific insights into how environmental changes, safety concerns, and urban constraints influence parental attitudes and practices. The qualitative approach allowed themes to emerge organically from participants' narratives, ensuring that the analysis remained deeply rooted in real-life experiences. Ultimately, this methodological process provided a nuanced understanding that bridges parental realities with broader policy and practice implications for child development and urban planning.

### ***Research Approach/Design:***

This study employed a qualitative research approach with a phenomenological design to explore parents' lived experiences, perceptions, and interpretations of climate change and its consequences on children's outdoor play in urban Bangladesh. The Phenomenological approach proved effective for exploring lived experiences, meanings and perceptions from the perspective of participants (Creswell & Poth, 2018) and how these shape their caregiving and play-related decisions. By focusing on participants' authentic narratives, the study provided a deep, contextual understanding of the complex relationship between urban environmental challenges and children's play opportunities.

### ***Research Participants:***

The study included a total of 24 parents of children aged 3 to 5 years from urban areas of Dhaka and Chattogram. Data were collected through 12 in-depth interviews (IDIs) and 2 focus group discussions (FGDs). Among the participants, 7 were fathers and 17 were mothers. For In-depth Interviews (IDIs), a total of 12 parents participated including 4 fathers and 8 mothers. Among them, 1 father and 2 mothers belonged to the lower-income group, while the remaining 3 fathers and 6 mothers represented

middle and upper-middle-income groups. And to conduct Focus Group Discussions (FGDs), two FGDs were taken with fixed participants of mothers and fathers from different socio-economic backgrounds. FGD-1 included 7 participants (2 fathers and 5 mothers) from upper-middle and middle-class backgrounds. FGD-2 consisted of 5 participants (1 father and 4 mothers) from the lower-income group.

The participants represented diverse socio-economic and residential backgrounds, allowing for a comprehensive understanding of parents' perceptions of climate change and its impact on their children's outdoor play opportunities in urban settings.

#### ***Research site:***

The study was conducted in two major urban places in Bangladesh - Dhaka and Chittagong. Of the total 24 participants, 20 were from Dhaka and 4 were from Chittagong, ensuring representation from both urban contexts while reflecting the population distribution of the two cities. These cities were chosen due to their high population density, increased urbanization, and significant exposure to climate-induced risks such as air pollution, excessive heat, limited green space, and poor urban planning. These factors make them ideal for exploring how climate change affects children's outdoor activities.

#### ***Sampling/Participant Selection Procedure:***

Purposive sampling was used to select participants who meet the inclusion criteria:

- Parent of at least one child aged between 3-5 years
- Resident of an urban area (Dhaka or Chittagong) for at least two years
- Aware of or concerned about environmental issues related to climate change

This strategy ensures the inclusion of participants who are knowledgeable and reflective about their environment and parenting decisions. Additionally, snowball sampling was used to reach participants through referrals.

***Data Collection Methods:***

**Table: Summary of Data Collection Methods**

| <b>Aspect</b>                  | <b>Description</b>                                                                                                                                                                                                                       |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Study Design</b>            | Qualitative study                                                                                                                                                                                                                        |
| <b>Data Collection Methods</b> | In-Depth Interviews (IDIs) and Focus Group Discussions (FGDs)                                                                                                                                                                            |
| <b>Number of IDIs</b>          | 12                                                                                                                                                                                                                                       |
| <b>Duration of IDIs</b>        | Approximately 23-49 minutes each                                                                                                                                                                                                         |
| <b>Number of FGDs</b>          | 2                                                                                                                                                                                                                                        |
| <b>FGD Participants</b>        | Mothers and fathers                                                                                                                                                                                                                      |
| <b>Interview Guide</b>         | Semi-structured, open-ended questions                                                                                                                                                                                                    |
| <b>Language Used</b>           | Primarily Bangla; English used occasionally when participants preferred                                                                                                                                                                  |
| <b>Key Areas Explored</b>      | Awareness of climate change; observed environmental changes; perceived risks to children's health and safety; decisions regarding children's outdoor play (timing, frequency, location, restrictions); coping strategies and adaptations |
| <b>Ethical Considerations</b>  | Informed written consent obtained; participants informed about study purpose and procedures                                                                                                                                              |
| <b>Data Recording</b>          | Audio recorded with participants' consent                                                                                                                                                                                                |
| <b>Data Processing</b>         | Transcription and translation into English for analysis                                                                                                                                                                                  |

The primary data for this study were collected through in-depth interviews (IDIs) and focus group discussions (FGDs) using semi-structured interview guides. A total of 12 IDIs were conducted, each lasting approximately 23-49 minutes. The interviews were carried out in the participants' preferred language, mostly in Bangla, with occasional use of English when participants were more comfortable expressing certain ideas in English with open-ended questions.

All IDIs and FGDs were audio recorded with the participants' consent, and each participant provided a signed consent form after being informed about the purpose and procedures of the study to ensure ethical compliance. The recordings were subsequently transcribed and translated into English to facilitate further analysis. Two focus group discussions (FGDs) were operated with both mothers and fathers to gain a deeper understanding of their perspectives on children's outdoor play environments.

#### ***Data Analysis:***

Data analysis process is done using thematic analysis, following Braun and Clarke's (2006) six-phase framework:

1. Familiarization with data (reading and re-reading transcripts)
2. Generating initial codes
3. Searching for themes
4. Reviewing themes
5. Defining and naming themes
6. Producing the report

Codes were derived inductively after preparing all the transcriptions, ensuring findings emerge from participants' own language and experience. During analysis, themes were interpreted through the integrated theoretical lens. For instance, parental

narratives were examined within ecological and sociocultural contexts (Bronfenbrenner & Vygotsky), while their perceptions of climate-related risks were analyzed using constructs from the Risk Perception Theory. Children's developmental responses were interpreted through Piaget's and Self-Determination frameworks to understand motivational and cognitive aspects of early environmental awareness.

### ***Validity and Reliability of the Research Tool:***

To ensure trustworthiness and credibility, I conducted member checking by summarizing key points during the interviews and inviting participants to validate my interpretations. I was also engaged in peer debriefing with colleagues and my research supervisor to help maintain neutrality and reduce personal bias. In addition, I tried to provide a thick description of the research context, participants, and findings so that readers can clearly understand the setting and judge the potential transferability of the results. Although the aim of this qualitative study is not to achieve generalizability, I tried to ensure transparency in the research process and provided depth in the analysis to enhance the overall value of the study.

### ***Ethical Issues:***

This study adheres strictly to ethical research principles involving human participants. Ethical clearance is obtained from the Ethics Review Committee of Brac Institute of Educational Development, Brac University. All participants were informed about the purpose of the research, their voluntary participation, and their right to withdraw at any point without any consequences. Written informed consent was collected using forms provided in both English and Bangla. Confidentiality and anonymity were ensured by using pseudonyms and securely storing all data, including audio recordings and transcripts. Participants' identities are not disclosed in any part of the

report. The study takes special care to avoid psychological discomfort by using respectful, non-invasive, and open-ended interview questions. Overall, the research upholds the ethical principles of respect, dignity, and safety for all participants.

### ***Limitations of the Study:***

While this study provides valuable insights into parental perspectives on climate change and its influence on children's outdoor play, several limitations must be acknowledged. First, the study is limited to urban areas of Bangladesh, specifically Dhaka and Chittagong. Due to logistical constraints and the researcher's residence in Dhaka, a larger number of participants were selected from Dhaka (20 participants) compared to Chittagong (4 participants), which may affect the representation of Chittagong parents' experiences. Second, the study included fewer fathers (7) compared to mothers (17). In FGD-2, the balance between the number of mothers and fathers was not maintained and the total number of participants was only 5 from lower-income group, which was not enough according to the requirement of any FGD. This uneven distribution was partly due to time constraints and fathers' engagement in work or other responsibilities, which limited their availability for interviews and focus group discussions. Third, as a qualitative study with a small sample size, the findings are not intended to be generalized to the entire population but are aimed at providing an in-depth, context-specific understanding. Additionally, the data relies on self-reported perceptions collected through interviews and discussions, which may be subject to social desirability bias, where participants respond in ways they believe are expected or acceptable. External factors such as noise, interruptions, or environmental conditions during fieldwork may also have influenced the quality of data collected. Despite these limitations, the study is expected to make a meaningful contribution to understanding how climate-related

concerns influence parenting practices and children's outdoor play opportunities in urban Bangladesh.

## **Chapter-4**

### **Findings and Discussions:**

#### ***Findings:***

This section presents the key findings derived from 12 In-Depth Interviews (IDIs) and 2 Focus Group Discussions (FGDs) conducted with parents of children aged 3-5 years residing in various urban neighborhoods across Dhaka and Chittagong - including Rampura, Banasree, Gulshan, Aftabnagar, Paribagh, Shantinagar, Haliashahar, and Patenga BAF. Participants were selected from diverse socio-economic backgrounds to capture a wide range of perspectives and experiences related to climate change, urban environmental hazards and early childhood play.

The purpose of this section is to present and interpret the findings that emerged from the qualitative data collection, addressing the two central research questions of the study. The analysis focused on how parents perceive climate change-related risks and urban environmental constraints, and how these perceptions shape children's outdoor play opportunities in urban Bangladesh. Data were analyzed using thematic analysis, which identified six major themes and their corresponding subthemes. These themes represent interrelated aspects of parents' understanding, attitudes, and adaptive practices in response to environmental changes affecting their children's play and wellbeing. Participant quotations are included throughout to illustrate key ideas and lived experiences.

The findings are also interpreted through the lens of multiple developmental and ecological theories, notably Bronfenbrenner's Ecological Systems Theory (1979), Vygotsky's Sociocultural Theory (1978), Piaget's Cognitive Development Theory (1952), Self-Determination Theory (Deci & Ryan, 1985), and the Risk Perception Theory (Slovic, 1987). Together, these frameworks offer a comprehensive understanding of how parents perceive and respond to the environmental and social implications of climate change, and how these perceptions shape children's opportunities for outdoor play, learning, and development.

Overall, the findings reveal a complex interplay between ecological, social, and psychological factors. Parents' perceptions of climate change and associated risks are influenced by their immediate living conditions, awareness levels, and socio-economic realities, which in turn affect how they negotiate safety, health, and play opportunities for their children. The integration of theoretical perspectives provides deeper insight into how macro-level environmental challenges intersect with micro-level parental behaviors and child development processes. These findings have important implications for parents, educators, policymakers, and urban planners - focusing the need for safe, accessible, and climate-resilient play environments that support healthy early childhood development in Bangladesh's rapidly urbanizing situation.

The findings of the research are briefly outlined in the following table.

**Table-1: Overview of Major Themes Emerging from the Study**

| Theme No. | Theme Title                                | Key Focus                                                                                |
|-----------|--------------------------------------------|------------------------------------------------------------------------------------------|
| Theme 1   | Changing Climate and Weather Variability   | Irregular weather, heat, pollution, and extreme events affecting children's outdoor play |
| Theme 2   | Environmental Safety and Urban Constraints | Unsafe urban conditions (pollution, traffic, lack of play spaces) limiting outdoor play  |
| Theme 3   | Parental Attitudes and Adaptive Practices  | Protective strategies prioritizing safety over outdoor exposure                          |
| Theme 4   | Children's Play Behavior and Preferences   | Strong interest in outdoor play despite environmental and parental restrictions          |
| Theme 5   | Benefits of Outdoor Play and Its Absence   | Developmental benefits of outdoor play and negative effects of restricted exposure       |
| Theme 6   | Community and Policy-Level Expectations    | Demand for climate-resilient planning, green spaces, and policy enforcement              |

### ***Theme 1: Changing Climate and Weather Variability***

#### **Sub-theme 1.1: Perceived Loss of Seasonal Regularity and Environmental Balance**

Most parents expressed that the familiar rhythm of Bangladesh's seasons has changed noticeably in recent years. They mentioned that summer and winter now feel unpredictable, with either prolonged heat or sudden rainfall, making it difficult to plan children's outdoor activities. One mother shared, "*The seasonal patterns have become irregular. Basically, the changes in temperature, air quality, and the unpredictable weather patterns are very noticeable now compared to our childhood experiences.*"(IDI-3, Date: 29.9.25)

Another father from Chittagong remarked, "*Seasons used to be clear and enjoyable during our childhood, but now the weather behaves oddly. For last several years you*

*will see that, now we hardly need to wear a jacket during winter season, but suddenly it feels like freezing during winter, but its rare and lasts hardly for 1 or 2 days.” (IDI-4, Date:2.10.25)*

This perceived irregularity echoes the findings of Bronfenbrenner’s Ecological Systems Theory (1979) - the macrosystem, including climatic and environmental conditions, directly affects children’s microsystem experiences such as playtime. Parents’ awareness of this environmental imbalance demonstrates how climate variability is indirectly reshaping early childhood play opportunities and routines.

### **Sub-theme 1.2: Rain, Dust, Pollution, and Extreme Heat Affecting Play Opportunities**

Parents repeatedly linked extreme weather and urban environmental hazards with reduced outdoor play. A parent from Shantinagar noted, *“During monsoon, heavy rain makes playgrounds muddy and unsafe. In extreme heat, children get tired and dehydrated very quickly, so we avoid outdoor play.” (IDI-12, Date: 06.10.25)*

Another participant from Dhanmondi added, *“Even when there’s no rain, dust and smoke make it impossible to let children play outside for long time. My son starts coughing after ten minutes.” (FGD-1, Participant-4, Date: 12.9.25)*

These experiences illustrate how urban pollution and climate-related stressors at the exosystem level influence parental decisions at the microsystem level, reinforcing protective behaviors and limiting outdoor exposure.

### **Sub-theme 1.3: Awareness and Understanding of Climate Change**

Most of the parents recognized that “something is wrong with the weather”, But only educated parents demonstrated conceptual clarity about climate change. One scholarly father expressed,

*“Hearing the term climate change, what comes to my mind that is – ozone layer is getting holes, UV rays are entering to the surface of earth, the ices are melting, the world is getting hotter, global warming is occurring, water level is rising, and everyone is sweating.” (IDI-4. Date: 2.10.25)*

In contrast, a mother from low-income group shared, *“I don’t know the science, but I can feel the changes. Too much rain, flooding, and long heatwaves make outdoor play difficult for children.” (IDI-10, Date: 10.10.25)*

The participants’ responses reveal varying levels of awareness and understanding of climate change, largely shaped by their educational background and social context. While almost all parents acknowledged noticeable shifts in weather patterns which could articulate a conceptual understanding of climate change and its broader scientific implications. This variation reflects how cognitive awareness of environmental issues is influenced by one’s exposure to knowledge, media, and education - elements situated within the exosystem and macrosystem levels of Bronfenbrenner’s Ecological Systems Theory (1979).

From the father’s detailed description, it is evident that his understanding encompasses global environmental processes such as ozone depletion, global warming, and rising sea levels indicating his cognitive connection to the scientific discourse around climate change. This aligns with Risk Perception Theory

(Slovic,1987), which suggests that individuals with greater access to scientific or educational resources tend to perceive environmental risks more rationally and with broader awareness.

In contrast, the mother from the slum area reflects an experiential rather than conceptual awareness. Her perception is grounded in direct, lived experiences of environmental changes affecting daily life - such as increased rainfall, flooding, and excessive heat disrupting children's outdoor activities. This resonates with Bronfenbrenner's microsystem, where immediate environmental conditions directly influence children's daily experiences. Her account illustrates that, even without formal scientific understanding, parents can still perceive the tangible consequences of climate change through their sensory and emotional engagement with the environment.

## ***Theme 2: Environmental Safety and Urban Constraints***

### **Sub-theme 2.1: Lack of Safe Playgrounds and Open Spaces**

Parents consistently identified the absence of safe, accessible play spaces as a major barrier. A parent from Rampura Mohanagar Project, who works as a driver, explained, *"In our area, there isn't any proper playground. Children usually play on the street in front of our house because there is no open field suitable for playing."* (IDI-11, Date: 23.10.25)

A contrasting view emerged from more affluent areas, *"In Dhanmondi, we have parks nearby. They are crowded, but at least children have a safe place to play."* (FGD-1, Participant-4, 12.09.25)

Another parent residing in the Air Force Base area shared, *“Inside the base, children have access to secure playing fields. We don’t face the same difficulties as many other families in Dhaka.”* (IDI-9, Date: 10.10.25)

These contrasting experiences highlight a significant urban spatial disparity, while some neighborhoods offer safe, accessible, and child-friendly spaces, a large proportion of urban families remain deprived of such basic amenities. Parents from middle- and lower-income areas repeatedly pointed out how the absence of playgrounds confines their children to unsafe streets, rooftops, or congested alleys.

In addition, according to Bronfenbrenner’s Ecological Systems Theory (1979), the exosystem, which includes community environments and urban planning decisions, strongly shapes children’s developmental opportunities. When this system lacks child-friendly infrastructure, it limits children’s interactions within their microsystem (family, peers) in natural outdoor settings - ultimately influencing their physical, social, and emotional well-being.

Taken together, the findings show that inequitable urban resource distribution results in a clear contrast of play opportunities: children in affluent zones like Gulshan, Dhanmondi, or Air Force Base benefit from planned and well-maintained outdoor spaces, while those in crowded middle- and lower-income neighborhoods encounter environmental and social barriers that restrict healthy play. This disparity reinforces spatial inequality and contributes to differences in early childhood experiences among urban children in Bangladesh.

## **Sub-theme 2.2: Urbanization, Rapid Construction, and Environmental Degradation**

Rapid urban expansion emerged as a critical factor limiting outdoor play. Participants emphasized that ongoing construction generates dust, noise, and traffic hazards. One father participant stated, *“In Aftabnagar, there are many ongoing construction projects, which cause a lot of dust and pollution, and this is not good for children’s health, if they play outside in such situation.”* (IDI-1, Date: 28.9.25)

Another mother from Uttara added,

*“When we all use the AC frequently for our own comfort, it releases the CFC gas to the environment, which creates greater danger outside and pollutes the air badly. As a result, people from lower-income groups are getting harmed with increased hardship in their life.”* (FGD-1, Participant-1, Date: 12.9.25)

The participants’ views reflect how rapid urban development and construction activities have contributed to increased pollution, and unsafe environments, directly limiting children’s opportunities for outdoor play. Dust, noise, and air pollution from construction sites pose serious health risks, discouraging parents from allowing children to play outside.

Through the lens of Bronfenbrenner’s Ecological Systems Theory (1979), these environmental stressors belong to the exosystem and macrosystem, where urban policies, industrial growth, and community infrastructure indirectly affect children’s well-being. The mother’s awareness of CFC emissions and their unequal effects on low-income groups further indicates environmental injustice - where privileged lifestyles exacerbate climate and health burdens for the less privileged. This reflects

Risk Perception Theory (Slovic, 1987), showing how individuals interpret environmental threats differently based on their socio-economic context and awareness levels. Overall, unregulated urbanization is diminishing both environmental quality and safe play opportunities for young children in urban Bangladesh.

### **Sub-theme 2.3: Traffic and Security Concerns**

Parents perceived traffic and security as serious threats to children's safety. Many expressed fears of road accidents or child abduction. One parent from Aftabnagar slum area stated,

*“When we go outside, there are lots of auto-rickshaws on the roads, I get really scared to take my child out because, accident happens so easily. Now the city is full of vehicles and chaos which is just not safe, So I never let my child go alone.” (IDI-10, Date: 10.10.25)*

Another Father from low-income group added, *“Sometimes strangers roam near the playing area near our home and vehicles passes frequently; we can't take risk sending children alone. I or my wife always stays with them while they are playing outside” (IDI-11, Date: 23.10.25)*

It highlights how increasing traffic congestion and safety threats have become major deterrents to outdoor play among young children in urban areas. Parents' fears of road accidents, kidnapping, and exposure to unsafe surroundings restrict children's independent mobility. The chaotic traffic conditions - especially in densely populated and underdeveloped neighborhoods create a constant sense of insecurity.

Even parents with lower socioeconomic status, such as those living in slum areas or working as drivers, share similar safety concerns, demonstrating that these worries cut across social classes. Parents' protective instincts lead them to either accompany their children during outdoor play or entirely restrict such activities. Consequently, children's opportunities for spontaneous play, exploration, and social interaction outside are significantly reduced.

This finding aligns with studies conducted in other urban contexts, which suggest that increased vehicular movement and perceived neighborhood insecurity limit children's freedom to play outdoors (Carver et al., 2008; Valentine & McKendrick, 1997). It also resonates with Bronfenbrenner's *Ecological Systems Theory* (1979), which emphasizes that the *exosystem*, including neighborhood safety and traffic conditions. These safety concerns also reinforce the protective orientation of parents - consistent with the Risk Perception Theory, where perceived danger outweighs developmental benefits.

#### **Sub-theme 2.4: Parental Supervision and Risk Avoidance**

Due to fears related to road accidents, danger from strangers, unsafe play environments, and the presence of harmful objects in the air, or traffic, parents described increased supervision or complete avoidance of outdoor play. One mother from the Dumni slum expressed,

*"Our children don't go very far from home, there is a small open-field like space in front of our home where we can look after them easily with our busy work-schedule at home, that's enough. Because in remote area people are unknown there." (IDI-12, Date: 10.10.25)*

A mother shared from Rampura, *“When my children go outside, I always make sure someone accompanies them as it is not safe to let them go alone.”* (IDI-7, Date: 6.10.25)

Another mother from Niketon stated,

*“I don’t feel comfortable with outdoor play for my child as safety issues play a significant role here. So, if I take my child to indoor activities, I can supervise and monitor my child keeping my eyes on him easily in an enclosed area.”* (FGD-1, Participant-5, Date: 12.9.25)

These statements reveal how parental fear and safety concerns have fostered an overprotective approach, leading to constant supervision or complete avoidance of outdoor play. Parents prefer enclosed or nearby areas where they can easily monitor their children, reflecting a deep-rooted sense of insecurity in urban neighborhoods. Such practices limit children’s freedom, social interaction, and exploration - key elements of holistic development. Modern urban lifestyles, combined with safety anxiety, contribute to a culture of risk avoidance, where parents prioritize safety and control over children’s autonomy and playful learning opportunities.

### ***Theme 3: Parental Attitudes and Practices***

#### **Sub-theme 3.1: Preference for Indoor vs. Outdoor Play**

Many parents showed a shifting preference toward indoor play. Some justified it by citing comfort and safety. One participant from Chittagong said, *“Honestly, I prefer indoor play as it’s more convenient for me and my child both. Though I know,*

*outdoor play is important, but I find indoor play more manageable in our daily routine”(IDI-9, Date: 10.10.25)*

Another mother from slum area said, *“Play inside the house is good as outside you always need someone to accompany them.” (IDI-10 Date:10.10.25)*

Alongside, another mother from Niketon explained, *“I like both types of play depending on the situation, however since my daughter enjoys outdoor play more, I also prefer that.” (IDI-3, Date: 29.9.25)* – few more parents also explained this phenomenon in the same way.

These speeches illustrate a growing tendency among parents to favor indoor play due to convenience, safety, and ease of supervision within busy urban lifestyles. Although parents recognize the developmental benefits of outdoor play, many still prioritize indoor options to avoid risks and manage time effectively. However, a few parents value outdoor play for their children’s enjoyment and socialization, showing that preferences vary based on context, safety perception, and children’s interests. Overall, this shift reflects how urban living patterns are reshaping traditional play habits and limiting children’s outdoor engagement.

### **Sub-theme 3.2: Encouragement of Physical Activity at Home**

Despite limited outdoor exposure, parents attempt to compensate with indoor physical activities. For instance,

*“My husband takes the lead in engaging our son in indoor physical activities. Usually my son, his father and grandfather – they all play together such as running around,*

*jumping on the bed, or pretending to be horses while my son rides on them.” (IDI-2, Date: 29.9.25)*

Another mother mentioned, *“Sometimes my daughter runs around the dining area with full joy and energy. We also encourage her playing simple physical games which help in her motor skill development.” (IDI-5, Date: 5.10.25)*

A father also stated from Chittagong, *“When he stays at home, he cycles, runs around, plays catch or football with me, and builds forts. Basically, he gets a lot of physio-motor and sensory-motor activities even indoors.” (IDI-4, Date: 2.10.25)*

These practices highlight parents’ proactive efforts to promote children’s physical activity indoors through playful family interactions. Such engagement reflects their awareness of the importance of movement and motor development. However, these indoor alternatives are though beneficial - lack the sensory richness, social interaction, and environmental stimulation of outdoor or nature-based play are apparent, which are essential for children’s overall growth and well-being.

### **Sub-theme 3.3: Awareness of Benefits of Outdoor Play**

Parents generally acknowledged the developmental value of outdoor play. As one said from lower-income group, *“Playing outside helps them eat well, sleep better, and stay cheerful.” (FGD-2, Date: 2.10.25)*

Another father added from Chittagong, *“Getting involved in outdoor activities and getting not – it’s like a gulf of difference. To ensure their holistic growth it’s inevitable.” (IDI-4, Date: 2.10.25)*

All these concepts regarding play benefits show parents' clear understanding of outdoor play's vital role which connects to the microsystem benefits children's physical health, emotional well-being, and social development. Although these insights often remain unacted upon due to safety and environmental constraints, creating a gap between knowledge and practice in everyday parenting.

### **Sub-theme 3.4: Reduced Exposure to Outdoor Hazards**

Parents intentionally limit exposure to perceived outdoor hazards such as pollution, mosquitoes, and infections. One doctor mother from Dhanmondi stated, *"Another thing is related to climate change which is happening now, is vector-borne-disease like dengue which is truly a great concern to ensure preventive measures to save our children."* (FGD-1, Participant-4, Date:12.9.25)

Another parent in Dhaka said, *"During July and august, the number of dengue cases usually rises, I make sure my child uses mosquito repellent cream, otherwise I don't allow her to play outside."* (IDI-5, Date: 5.10.25)

*Regarding air pollution problem, one father shared his opinion,*

*"Different germs attack them just by being exposed to the air, and this is mainly due to the poor air quality in Dhaka city. Additionally, during the rainy season in Bangladesh, the alarming rise of dengue cases creates fear among parents, which also prevents us from letting children play outside."* (IDI-7, Date: 6.10.25)

These views indicate parents' growing caution toward environmental health risks such as pollution and vector-borne diseases like dengue. Guided by preventive health awareness, they restrict outdoor play to protect their children from perceived dangers.

This behavior aligns with the *Health Belief Model*, where perceived vulnerability and illness severity shape protective parenting choices.

### **Sub-theme 3.5: Health Concern and Risk Management**

Many parents equated health protection with restricting outdoor time. One mother shared, *“Environmental changes have led to more health problems like coughs, colds, and other respiratory illness. My son falls sick with tonsillitis, cold, or allergy issues frequently related to his adenoids. So now I stop him from going outdoor plays often.”* (IDI-6, Date: 6.10.25)

A small number of parent parents also demonstrated another perception regarding health concerns and risk. One of them expressed that from Pink city Model Town area near 300 feet road in Dhaka, *“As parents, we often get too worried about our child’s health, but in reality, they don’t feel as much discomfort as we assume. We need to expose them to outdoor to increase their immunity and to grow vitamin D level.”* (FGD-1, Participant-2, Date: 12.9.25)

Here, it highlights contrasting parental attitudes toward health and outdoor play. While most parents limit outdoor activities to prevent illness. This overprotection may unintentionally reduce resilience and developmental growth, showing a conflict between safety versus exploration. However, few parents recognize that moderate exposure can strengthen immunity and support overall health. These differing views reflect a tension between protective parenting and health-promoting risk management, influenced by personal experiences and awareness levels.

## **Theme 4: Child Play Behavior and Preference**

### **Sub-theme 4.1: Indoor vs. Outdoor Play**

Children's play habits are now more indoor-centric due to parents' preferences.

However, many children show enough interest in engaging in outdoor plays. One of the parents from Rampura conveyed, *"My son enjoys playing outside much more. He wants to go out to play almost every day. His playmates outside make him more eager to go out and meet his friends. He doesn't like playing alone that much."* (IDI-11, Date: 23.10.25)

Another mother from Chittagong shared,

*"My son spends time at home watching cartoons and playing games on the phone, what he enjoys most. However, taking him outdoors also makes him energetic and delighted. But, to ensure his comfort and mine as well, I prefer to keep him indoors most of the time."* (IDI-9, Date: 10.10.25)

These perceptions uncover children's strong inclination toward outdoor play, driven by social interaction and enjoyment, yet constrained by parental preferences and environmental limitations. Despite children's enthusiasm, urban lifestyles and safety concerns keep play largely confined indoors, highlighting a gap between children's natural play interests and parental comfort zones. So, it suggests children's latent desire for outdoor engagement, suppressed by environmental and parental barriers.

Here, the micro–mesosystem interactions within Bronfenbrenner's Ecological Systems also become evident by children's desire to play with friends (microsystem) is influenced by parents' rules, routines, and safety concerns (another part of the

microsystem), as well as the connection between home and peer environments (mesosystem). This theory explains why children's natural motivation for outdoor play can be constrained by parental restrictions and environmental challenges, even when children express strong intrinsic interest.

#### **Sub-theme 4.2: Play Activities**

Children's current play routines include puzzle games, drawing, or pretend play indoors. Outdoor options, when available, include cycling or playing in small compounds. In this regard of parent shared, *"My son rides small cycles in the garage of our house because there's no open field," mentioned a parent. (IDI-2, Date: 29.9.25)*

Play often occurs within confined home spaces or with siblings. One participant said, *"Often my elder daughter spends time with her younger brother, they play with bat and ball indoors and enjoy it very much, though there is little space inside home." (IDI-11, Date: 23.10.25)*

This finding highlights how limited outdoor opportunities have led children to adapt their play practices within indoor and family contexts. Playing with siblings serves as an important alternative to outdoor social interactions, helping children develop social, emotional, and cooperative skills even in restricted spaces. However, the statement also reflects the spatial limitations common in urban homes of Dhaka. Despite this, children display creativity and resilience by utilizing available household areas for shared play. This aligns with Vygotsky's (1978) *Sociocultural Theory*, which emphasizes that learning and development occur through social interactions. In this

case, through sibling play children can promote cognitive and emotional growth within the family setting.

### ***Theme 5: Benefits of Outdoor Play and Drawbacks of Its Absence***

#### **Sub-theme 5.1: Cognitive and Physical Development**

Parents recognized that outdoor play enhances children's stamina, creativity, and problem-solving, and motor skill development. In this regard one father asserted from Chittagong,

*"Outdoor play helps children develop physically and mentally. It makes them stronger, happier, and more confident. Without getting exposed to outdoor opportunities, children become more dependent on screens, which affects their eyesight, sleep, and behavior. I have noticed that my children become restless when they stay indoors for too long, and covid-19 is a great example here." (IDI-8, Date:3.10.25)*

Conversely, from another participant's discourse it was stated, *"Without regular activities, children miss the chance to grow properly and develop essential skills." (IDI-2, Date: 29.9.25)*

Parents acknowledged the crucial role of outdoor play in promoting children's cognitive, physical, and emotional growth. They observed that limited outdoor exposure leads to screen dependency and behavioral issues. This reflects parents' awareness of play as an essential developmental need rather than a leisure activity.

### **Sub-theme 5.2: Emotional Well-being and Enjoyment**

Parents emphasized that outdoor play brings happiness and emotional relief. *“When my child plays outside, I can see pure joy on her face.”* (IDI-10, Date:10.10.25) - One mother shared from slum area.

In contrast, staying indoors was associated with irritability or boredom. Here, one parent stated, *“If it rains for days and we can’t go out, my daughter becomes cranky.”* (FGD-2, Participant-1, Date: 12.9.25)

Parents perceived outdoor play as vital for children’s emotional well-being, offering joy, stress relief, and positive mood regulation. Prolonged indoor confinement often led to frustration and irritability. This aligns with the *Self-Determination Theory* (Deci & Ryan, 1985), which suggests that fulfilling children’s innate need for freedom and exploration enhances emotional satisfaction and overall happiness.

### **Sub-theme 5.3: Socialization with Peers**

Outdoor play promotes social bonding and communication. *“When they play outdoors, they meet other children and people, which helps develop their social skills.”* (IDI-3, Date: 29.9.25) - said one parent from Niketon, Dhaka.

Similar viewpoints were expressed by most of the parents. So, these reflections support research showing that peer play fosters social-emotional competence, a key aspect of early development emphasized in Bronfenbrenner’s mesosystem (child-peer-family interaction).

## **Theme 6: Community and Policy Recommendations**

### **Sub-theme 6.1: Establishing Safe Playgrounds and Greenery**

Parents urged for clean, secure, and accessible playgrounds in every urban neighborhood. In this regard one father expressed, *“I hope that city planners and local authorities should take necessary steps creating more safe, green and accessible play spaces for young children.”* (IDI-8, Date: 3.10.25)

Similar ideas were generated from most of the parents about ensuring safe play areas. It indicates parents’ growing concern for safer and greener play environments in urban areas. They emphasize the need for city planners to prioritize child-friendly spaces in community design. This reflects a public demand for child-centered urban planning.

### **Sub-theme 6.2: School and Community Initiatives to Support Outdoor Play**

Many suggested that schools can play a stronger role. One mother stated, *“There should be designated places in schools for children’s recreation and activities. Schools can organize workshops, outdoor study tours, tree plantation programs, picnics on the school premises.”* (IDI-7, Date: 6.10.25)

Another mother said, *“I strongly feel there should be a government regulation ensuring that every housing development includes proper outdoor facilities for children and the community.”* (FGD-1, Participant-7, Date: 12.9.25)

Parents emphasized the joint responsibility of schools and government authorities in ensuring children’s access to outdoor spaces. They highlighted that both educational institutions and urban policies should actively support children’s outdoor play and community well-being.

### **Sub-theme 6.3: Urban Planning Consideration**

Parents highlighted that proper urban planning should prioritize decentralization and allocate spaces for children's outdoor activities within neighborhoods and schools.

One parent remarked, *"If the city areas were not so centralized and overcrowded, there would be more open places for children to play safely. Everything being concentrated in one place creates chaos and limits space."* (FGD-1, Participant-2, Date: 12.9.25)

Another participant extended this concern to school environments, emphasizing that the absence of dedicated play spaces in many urban schools further restricts children's opportunities for physical activity. As she explained, *"Many schools do not have proper playgrounds. Children need such spaces to move freely and engage in physical activities during school hours."* (IDI-3, Date: 29.9.25)

Here, parents' reflections highlight a significant concern about inadequate urban spatial planning and its impact on children's outdoor play. They perceive that excessive centralization and overcrowding in city areas restrict the availability of safe, open spaces for play. Beyond neighborhood-level limitations, parents also note that many urban schools lack dedicated playgrounds, further reducing children's opportunities for daily physical activity. These insights collectively underscore the need for child-centered urban development strategies that ensure accessible and safe play spaces both within residential communities and educational institutions, supporting children's holistic growth and well-being.

## **Sub-theme 6.4: Policy Intervention, Government Application with Public**

### **Awareness**

Parents recommended stronger policy enforcement regarding public parks, air quality control, and children's rights to play. Here, one parent suggested, *"The government should control pollution and allocate safe spaces for kids; it's their basic right,"* one participant stressed from Dhaka, Rampura area. (IDI-7, Date: 6.10.25)

Another mother said, *"Small changes can lead to big impacts. Public awareness is crucial – without it, government efforts alone will not be enough. Strict rules should be enforced to keep localities clean, and those who violate them should face fines."* (IDI-5, Date: 5.10.25)

A father also asserted,

*"In Bangladesh necessary actions should be taken to reduce pollution and to keep our environment healthy & safe. For example - regarding car taxes, fitness checks, and even having factories near residential areas there should be controlled guidelines or rules, as still there are no proper regulations."* (FGD-1, Participant-3, Date: 12.9.25)

Parents' views highlight the urgent need for effective policy enforcement and public awareness to ensure children's right to safe play environments, as emphasized in UNCRC Article 31. They believe that government regulations on pollution control, urban planning, and public cleanliness should be strictly implemented alongside active community participation. Applying Bronfenbrenner's Ecological Systems Theory, these findings show how Chrono and macro-level factors (policies, environmental conditions) and micro-level parental concerns jointly shape children's outdoor play opportunities. The study thus underscores the importance of coordinated

policy actions, community-based initiatives, and awareness campaigns to balance protection with children's holistic development.

## ***Discussion***

Overall, the findings of this study indicate that children's outdoor play opportunities in urban Bangladesh are formed by the combined influence of climate change, urban environmental hazards, and parental risk perceptions, rather than by parental choice alone. Parents reported experiencing noticeable climatic changes such as extreme heat, irregular rainfall, dust, and air pollution, which they perceived as continuing barriers to safe outdoor play. These perceptions are consistent with existing literature that identifies climate change as a growing threat to children's daily activities and well-being, particularly in urban contexts of low- and middle-income countries (Bartlett, 2008; UNICEF, 2022). Similar to previous studies, parents did not always frame these changes using scientific terminology, but their lived experiences reflected a clear awareness of environmental instability (Ahsan et al., 2011).

From an ecological perspective, these findings align with Bronfenbrenner's Ecological Systems Theory, demonstrating how macro- and chronosystem-level environmental changes manipulate children's microsystem experiences, such as daily play routines. Rapid urbanization, lack of safe play spaces, ongoing construction, and traffic congestion further exaggerated parental concerns, reinforcing findings from earlier research that unplanned urban development restricts children's access to outdoor play (UN-Habitat, 2020; Chowdhury, 2019). However, this study extends existing literature by emphasizing spatial inequality within urban settings, where children from affluent or planned neighborhoods experience greater play opportunities than those from densely populated or low-income regions.

Parental restriction of outdoor play was primarily driven by risk perception, including fears related to pollution, road accidents, dengue outbreaks, and personal security. This finding supports Risk Perception Theory (Slovic, 1987) and aligns with studies showing that increased environmental and safety concerns lead to reduced outdoor activity among young children (Carver et al., 2008; Valentine & McKendrick, 1997). Importantly, the findings suggest that these protective practices should be understood as contextually rational responses to unsafe urban environments, rather than as parental neglect or lack of awareness.

Despite these restrictions, parents demonstrated a strong understanding of the developmental benefits of outdoor play, including its role in children's physical health, emotional well-being, and social development. This confirms earlier research highlighting outdoor play as a critical component of early childhood development (Brussoni et al., 2015; Ginsburg, 2007). However, a clear gap between knowledge and practice emerged, as environmental and infrastructural constraints limited parents' ability to act on this understanding. While some parents attempted to compensate through indoor physical play, these alternatives were insufficient to replace the sensory richness, peer interaction, and exploratory learning provided by outdoor environments (Fjørtoft, 2004).

Children's expressed preference for outdoor play further reinforces developmental theories emphasizing the importance of autonomy, social interaction, and exploration in early childhood (Vygotsky, 1978; Deci & Ryan, 1985). Persistent indoor confinement was associated with irritability and reduced social engagement, raising concerns about the long-term developmental implications of limited outdoor exposure in climate-vulnerable urban contexts.

Taken together, the findings underscore the need for integrated urban planning, climate-responsive policies, and child-centered interventions. Urban development strategies should prioritize safe, accessible, and climate-resilient outdoor play spaces within neighborhoods and educational institutions. In addition, raising parental awareness about the developmental importance of outdoor play, alongside improving environmental safety may help balance protection with children's developmental needs. Addressing climate change impacts and urban environmental hazards through a child-sensitive lens is essential to ensuring equitable and healthy outdoor play opportunities for young children in Bangladesh.

## ***Conclusion***

In summary, this study demonstrates that children's outdoor play in urban Bangladesh is hampered by the combined effects of climate change, urban environmental risks, and parental safety concerns. Their concerns encompass not only immediate safety issues such as traffic, pollution, and extreme weather but also broader implications for children's health, social interaction, and overall development. These perceptions shape daily routines and parenting strategies, often resulting in limited outdoor exposure despite parents' awareness and knowledge of its developmental benefits. The findings underscore a critical gap between the recognized importance of outdoor play and the practical realities of urban living in a climate-vulnerable context. Children's opportunities for exploration, physical activity, and social engagement are controlled by environmental, infrastructural, and societal factors, directing the urgent need for supportive and needful interventions. Addressing these challenges requires collective efforts from families, communities, and policymakers, and most importantly from related ministries of the Government. Ensuring access to safe, well-

planned, and climate-resilient play spaces can help mitigate the adverse consequences of environmental risks while promoting children's holistic development in urban Bangladesh. The findings highlight a clear disconnect between developmental needs and the realities of urban living in a climate-vulnerable context. By prioritizing child-friendly urban environments, stakeholders can support not only recreational needs but also the holistic growth of young children, fostering healthier and more robust urban generations in Bangladesh onwards.

### ***Recommendations:***

Drawing on the key findings of this research, it is clear that ensuring safe and meaningful outdoor play for young children in urban Bangladesh requires coordinated efforts across multiple levels. Addressing parental concerns, climate-related risks, and urban environmental constraints is essential to safeguard children's right to play and to support their physical, cognitive, and socio-emotional development. The following recommendations are therefore proposed for parents, educators, urban planners, communities, and policymakers.

- ❖ Increase parental awareness about the importance of outdoor play for children's physical, cognitive, and emotional development, even under changing climatic conditions. Conduct workshops, awareness campaigns, and community programs to guide parents on safe outdoor play practices, including appropriate timing, hydration, and heat or pollution protection.
- ❖ Encourage climate-responsive urban planning by developing and maintaining child-friendly green spaces in residential areas. Incorporate shaded zones, trees, safe walking and cycling paths, and environmentally sustainable designs in public parks to support outdoor play throughout the year.

- ❖ Integrate climate education and play-based learning in preschools. Use outdoor and nature-based activities to teach children about the importance of environment, coping strategies for heat, rain, or pollution, and create safe, shaded play areas within school premises to alleviate parental concerns.
- ❖ Promote community-based initiatives such as family play sessions, tree planting, and neighborhood clean-up drives. These activities strengthen social bonds, foster environmental stewardship, and support children's right to play safely.
- ❖ Formulate and implement policies that prioritize child-centered and climate-resilient urban spaces. National guidelines and inter-ministerial collaboration between the Ministries of Environment, Education, and Women and Children Affairs can ensure equitable access to safe play spaces for children across all socioeconomic backgrounds.
- ❖ Conduct further research to explore how factors such as socioeconomic status, gender, and neighborhood infrastructure influence parental perceptions and practices regarding outdoor play. Longitudinal and mixed-method studies can provide deeper insights into how families adapt to climate-related challenges over time.
- ❖ Foster collaboration among parents, schools, policymakers, and communities to create resilient, safe, and engaging environments that support holistic childhood development despite environmental challenges.

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## **Appendices:**

### ***Appendix – 1a***

#### **IDI Guide - English**

##### **Purpose:**

The IDI guideline aims to explore individual parents' perceptions, concerns, and decision-making processes regarding outdoor play in the context of climate change in urban Bangladesh. It will allow deep, personalized insights into each parent's lived experience.

##### **Format:**

**Language** - Bangla or English (based on participant preference)

**Estimated Time** - 40-60 minutes

**Mode** - Face-to-face or Online (if necessary, due to environmental/health restrictions, or long distance)

**Consent** - Written informed consent will be obtained prior to interview

**Recording** - Audio recording with permission

**Probing** - Used when participants' answers require clarification or elaboration

**Target Participants** - Parents (mothers & fathers) of children aged 3–5 years in Dhaka & Chattogram.

##### **IDI Questionnaire:**

- Could you tell me a little about yourself and your family? (e.g., number of children and their ages, where you live, your occupation, and how long you have been living in your current urban area)
- How would you describe your neighborhood in terms of space and facilities for young children to play?
- How do your children usually spend their free time, and where do they most often play?
- When you hear the term “climate change,” what comes to your mind?
- How climate changing factors and play are related to each other, share your opinion.
- Have you noticed any changes in the weather or environment in your area over the past few years? If yes, what are they, and how do they affect children aged 3–5 years?
- Compared to previous years, have you noticed any difference in how often your child plays outside? If yes, what factors influenced this change?
- Can you share a specific example of when weather or environmental conditions affected your decision about your child's outdoor play?

- What concerns do you have about your child playing outside, and are there certain times of the year or weather conditions when you prefer your child to stay indoors? Why?
- Which do you prefer for your child – indoor or outdoor play? why?
- What strategies do you use to reduce climate or environment-related risks while still allowing your child to play outside?
- Do you encourage indoor activities as an alternative to outdoor play, and how do you ensure your child gets enough physical activity if outdoor play is limited?
- What do you think could be done in your locality to make outdoor play safer for children in a changing climate?
- How can parents, communities, and schools work together to support children's outdoor play and health despite climate change challenges?
- Is there anything else you would like to share about how climate change affects your child's play or well-being?

## ***Appendix – 1b***

### **IDI Guide - Bangla**

#### **বিস্তারিত সাক্ষাৎকার নির্দেশিকা (IDI)**

#### **উদ্দেশ্য:**

IDI নির্দেশিকা ব্যবহার করে শহুরে বাংলাদেশে শিশুদের বাইরের খেলাধুলা এবং জলবায়ু পরিবর্তন সম্পর্কিত পিতামাতার দৃষ্টিভঙ্গি, উদ্বেগ এবং সিদ্ধান্ত গ্রহণ প্রক্রিয়া অন্বেষণ করা হবে। এটি প্রতিটি পিতামাতার অভিজ্ঞতার গভীর ও ব্যক্তিগত দৃষ্টিভঙ্গি জানতে সাহায্য করবে।

#### **ফরম্যাট:**

- ভাষা: বাংলা বা ইংরেজি (অংশগ্রহণকারীর পছন্দ অনুযায়ী)
- আনুমানিক সময়: ৪০-৬০ মিনিট
- পদ্ধতি: মুখোমুখি সাক্ষাৎকার বা প্রয়োজনে অনলাইন (পরিবেশ/স্বাস্থ্যগত কারণে)
- সম্মতি: সাক্ষাৎকারের আগে লিখিত সম্মতি প্রয়োজন
- রেকর্ডিং: অনুমতি নিয়ে অডিও রেকর্ডিং
- প্রোবিং: অংশগ্রহণকারীর উত্তর স্পষ্ট করার জন্য অতিরিক্ত প্রশ্ন করা হবে
- লক্ষ্য অংশগ্রহণকারী: ঢাকা ও চট্টগ্রামের ৩-৫ বছর বয়সী শিশুর পিতামাতা (মা ও বাবা)

## IDI প্রশ্নাবলী:

- দয়া করে আপনার পরিবার এবং নিজের সম্পর্কে কিছু তথ্য শেয়ার করুন (যেমন, কতটি শিশু আছে এবং তাদের বয়স, আপনি কোথায় থাকেন, আপনার পেশা, এবং কতদিন ধরে বর্তমান শহরে এলাকায় বসবাস করছেন)।
- আপনার আশেপাশের এলাকা শিশুদের খেলার স্থান এবং সুবিধার ক্ষেত্রে কেমন?
- আপনার শিশুরা সাধারণত ফ্রি টাইমে কীভাবে সময় কাটায় এবং কোথায় সবচেয়ে বেশি খেলে?
- “জলবায়ু পরিবর্তন” শব্দটি শুনলে আপনার মনে কী আসে?
- গত কয়েক বছরে আপনার এলাকায় আবহাওয়া বা পরিবেশে কোনো পরিবর্তন লক্ষ্য করেছেন কি? যদি হ্যাঁ, তা কী এবং এটি ৩-৫ বছর বয়সী শিশুদের ওপর কীভাবে প্রভাব ফেলে?
- পূর্ববর্তী বছরের তুলনায় আপনার শিশুর বাইরের খেলার সময়ে কোনো পরিবর্তন লক্ষ্য করেছেন কি? যদি হ্যাঁ, কোন কারণগুলো এই পরিবর্তনের পেছনে প্রভাব ফেলেছে?
- এমন একটি উদাহরণ শেয়ার করুন যখন আবহাওয়া বা পরিবেশের শর্ত আপনার শিশুর বাইরের খেলার সিদ্ধান্তকে প্রভাবিত করেছে।
- আপনার শিশুকে বাইরে খেলতে দেওয়ার ক্ষেত্রে আপনার কী উদ্বেগ আছে? বছরের কোন সময় বা কোন আবহাওয়ার ক্ষেত্রে আপনি চান যে শিশুটি ঘরে থাকুক? কেন?
- আপনার শিশুদের জন্য আপনি কোনটি বেশি পছন্দ করেন – ঘরের ভিতরের খেলা না বাইরে খেলা? কেন?
- শিশুদের বাইরে খেলতে দেওয়ার সময় জলবায়ু বা পরিবেশ সংক্রান্ত ঝুঁকি কমানোর জন্য আপনি কী ধরনের কৌশল ব্যবহার করেন?
- আপনি কি বাইরে খেলার বিকল্প হিসেবে ঘরের ভিতরের কার্যক্রমকে উৎসাহিত করেন, এবং যদি বাইরের খেলা সীমিত হয়, তখন কিভাবে নিশ্চিত করেন যে আপনার শিশু পর্যাপ্ত শারীরিক ক্রিয়াকলাপে অংশ নিচ্ছে?
- আপনার এলাকার বাইরের খেলা শিশুদের জন্য নিরাপদ করার জন্য কী করা যেতে পারে বলে আপনি মনে করেন?
- পিতামাতা, কমিউনিটি এবং স্কুল কিভাবে একসাথে কাজ করতে পারে যাতে জলবায়ু পরিবর্তনের চ্যালেঞ্জ সত্ত্বেও শিশুদের বাইরের খেলা এবং স্বাস্থ্যের উন্নতি করা যায়?
- এছাড়াও, আপনার মনে হয় কি জলবায়ু পরিবর্তন আপনার শিশুর খেলা বা সুস্থতার ওপর কিভাবে প্রভাব ফেলে, সে বিষয়ে আর কিছু শেয়ার করতে চান?

## ***Appendix – 2a***

### **FGD Guide - English**

**Target:** Mothers, fathers, and early childhood educators (mixed or separate groups as needed).

**Group Size:** 5–7 participants per session.

**Estimated Time:** 60–90 minutes per discussion.

### **FGD Questionnaire:**

#### **Section A – Warm-Up**

- Please introduce yourself and share one memory of your child’s outdoor play that you really enjoyed.

#### **Section B – Shared Understanding of Climate Change**

- In your own words, what does “climate change” mean to you? How is it related to children’s outdoor play?
- Can you share any noticeable changes in your area’s weather or environment in recent years?

#### **Section C – Outdoor Play Opportunities & Challenges**

- How important do you think outdoor play is for children aged 3–5 years?
- What are the most common outdoor play spaces available in your area?
- What factors make it easy or difficult for your child to play outside? (Probe: weather, pollution, safety, traffic, green space availability)
- Can you share an example of when climate or weather conditions directly prevented children from playing outside?

#### **Section D – Perceived Risks & Parental Decision-Making**

- What environmental hazards are you most concerned about for your child?
- How do these concerns affect when and where you allow your child to play?
- Are there differences in how mothers and fathers’ approach outdoor play decisions in your community?

#### **Section E – Coping Strategies & Community Actions**

- What strategies or initiatives have you or your community used to ensure children still have opportunities for safe play?
- How could your community adapt play spaces to be more climate-resilient?

## Section F – Future Improvements & Policy Ideas

- What changes would you like to see from the government, city planners, or schools to protect and promote outdoor play for children?
- How can parents work together to address climate-related challenges to children's play?

## Section G – Wrap-Up

- If you could give one message to policymakers about climate change and children's play, what would it be?

## Appendix - 2b

### FGD Guide – Bangla

#### ফোকাস গ্রুপ ডিসকাশন

#### লক্ষ্য অংশগ্রহণকারী:

মা, বাবা এবং প্রাথমিক শিশু শিক্ষাবিদ (প্রয়োজন অনুসারে মিশ্র বা আলাদা গ্রুপ)।

গ্রুপ আকার: প্রতি সেশন ৬-৮ জন অংশগ্রহণকারী  
আনুমানিক সময়: প্রতি আলোচনায় ৬০-৯০ মিনিট

#### FGD নির্দেশিকা

### Section A – পরিচিতি ও ওয়ার্ম-আপ

- দয়া করে নিজেকে পরিচয় করান এবং আপনার শিশুর বাইরের খেলার এমন একটি স্মৃতি শেয়ার করুন যা আপনি সত্যিই উপভোগ করেছেন।

### Section B – জলবায়ু পরিবর্তন সম্পর্কে সাধারণ ধারণা

- আপনার ভাষায় “জলবায়ু পরিবর্তন” বলতে আপনি কী বোঝেন? এটি শিশুদের বাইরের খেলাধুলার সঙ্গে কীভাবে সম্পর্কিত?
- সম্প্রতি কয়েক বছরে আপনার এলাকার আবহাওয়া বা পরিবেশে কোনো উল্লেখযোগ্য পরিবর্তন লক্ষ্য করেছেন কি?

### Section C – বাইরের খেলাধুলার সুযোগ ও চ্যালেঞ্জ

- আপনার মতে ৩-৫ বছর বয়সী শিশুদের জন্য বাইরের খেলা কতটা গুরুত্বপূর্ণ?
- আপনার এলাকায় সবচেয়ে সাধারণ বাইরের খেলার স্থানগুলো কী কী?
- কোন কোন কারণ আপনার শিশুর বাইরে খেলার জন্য সহজ বা কঠিন করে তোলে? (প্রোবিং: আবহাওয়া, দূষণ, নিরাপত্তা, যানজট, সবুজ স্থান)

- এমন একটি উদাহরণ শেয়ার করুন যখন জলবায়ু বা আবহাওয়ার শর্ত শিশুদের বাইরে খেলতে বাধা দিয়েছে।

#### **Section D – অনুভূত ঝুঁকি ও পিতামাতার সিদ্ধান্ত গ্রহণ**

- আপনার শিশুর জন্য সবচেয়ে উদ্বেগজনক পরিবেশগত ঝুঁকি কী কী?
- এই উদ্বেগগুলো কখন এবং কোথায় আপনি শিশুকে খেলার অনুমতি দেন, তা কীভাবে প্রভাবিত করে?
- আপনার কমিউনিটিতে মা এবং বাবার বাইরের খেলা সংক্রান্ত সিদ্ধান্ত নেওয়ার মধ্যে পার্থক্য আছে কি?

#### **Section E – মোকাবেলা কৌশল ও কমিউনিটি উদ্যোগ**

- আপনার বা আপনার কমিউনিটি কী কৌশল বা উদ্যোগ নিয়েছে যাতে শিশুরা নিরাপদভাবে খেলতে পারে?
- আপনার কমিউনিটি কীভাবে খেলার স্থানকে জলবায়ু-সহনশীল করে তুলতে পারে?

#### **Section F – ভবিষ্যতের উন্নয়ন ও নীতি ধারণা**

- শিশুদের বাইরের খেলা রক্ষা ও প্রচারের জন্য সরকার, সিটি প্ল্যানার বা স্কুল থেকে আপনি কী পরিবর্তন আশা করবেন?
- পিতামাতারা কীভাবে একসাথে কাজ করে শিশুদের খেলার জলবায়ু-সংক্রান্ত চ্যালেঞ্জ মোকাবেলা করতে পারে?

#### **Section G – সমাপ্তি**

- যদি আপনি নীতি প্রণেতাদের কাছে জলবায়ু পরিবর্তন ও শিশুদের খেলাধুলা সম্পর্কে একটি বার্তা দিতে পারেন, তা কী হবে?

## *Appendix – 3a*

### **Participant Consent Form - English**

#### ***Consent Form***

**Thesis Proposal Title:** Exploring Climate Change & Associated Environmental Hazards and Its impact on Outdoor Play Opportunities for Children aged 3-5 years - Parental Perceptions of Urban Area in Bangladesh.

**Researcher:** Fauzia Sultana

**Research Purpose:** I am conducting this research as a part of my master's degree requirement from the Institute of Educational Development (IED), BRAC University. This research aims to explore parents' perspectives on climate change and examine how they perceive its impact on outdoor play opportunities for children aged 3–5 years in urban areas of Bangladesh. It seeks to identify gaps in awareness, misconceptions, and the key challenges parents face in ensuring safe and adequate outdoor play opportunities for young children in the context of changing environmental conditions.

**Expectation:** If you agree to participate in this study, you will be expected to share your perceptions, views, thoughts, and practices regarding your child's outdoor play and how climate change might influence it. This will include your personal opinions on outdoor play, child development, your child's play routines, and any changes you have observed due to environmental or weather-related factors. The interview is expected to take approximately **40-60** minutes, depending on your responses.

**Risks and Benefits:** There are no direct or indirect risks associated with participating in this study. Your participation may contribute to improving knowledge and awareness among parents, educators, policymakers, and other stakeholders, which could benefit children's well-being and play opportunities in the future.

**Anonymity:** All information you provide will remain confidential and will only be used for academic purposes. No personal identifiers will be disclosed. You may contact me at any time for any questions or clarifications about the study.

**Right Not to Participate and Withdraw:** Your participation in this research is entirely voluntary. You have the right to decide whether or not to take part, and you may withdraw at any time without any consequences or penalties.

If you agree to participate in this study, please indicate your consent by signing in the space provided below.

**Parent's Name:** \_\_\_\_\_ **Researcher's Name:** \_\_\_\_\_  
**Parent's Signature:** \_\_\_\_\_ **Researcher's Signature:** \_\_\_\_\_

Thank you for your cooperation. For any further queries, please contact: **01732604443**

## Appendix – 3b

### Participant Consent Form - Bangla

#### বিস্তারিত সাক্ষাৎকার সম্মতি ফর্ম

#### খিসিস প্রস্তাবনার শিরোনাম:

শিশুদের (৩-৫ বছর বয়সী) বাইরের খেলাধুলার সুযোগে জলবায়ু পরিবর্তনের প্রভাব:  
বাংলাদেশের শহরে এলাকার পিতামাতার দৃষ্টিভঙ্গি

গবেষক: ফৌজিয়া সুলতানা

#### গবেষণার উদ্দেশ্য:

আমি এই গবেষণাটি আমার মাস্টার্স ডিগ্রির অংশ হিসেবে ব্র্যাক ইউনিভার্সিটি, ইনস্টিটিউট অফ এডুকেশনাল ডেভেলপমেন্ট (IED) থেকে পরিচালনা করছি। এই গবেষণার মূল লক্ষ্য হলো পিতামাতাদের দৃষ্টিভঙ্গি অন্বেষণ করা এবং বোঝা যে, তারা কীভাবে শিশুদের (৩-৫ বছর বয়সী) বাইরের খেলার সুযোগে জলবায়ু পরিবর্তনের প্রভাবকে উপলব্ধি করেন। এছাড়া, এটি সচেতনতার ফাঁক, ভুল ধারণা এবং নিরাপদ ও পর্যাপ্ত বাইরের খেলার সুযোগ নিশ্চিত করার ক্ষেত্রে পিতামাতাদের সম্মুখীন প্রধান চ্যালেঞ্জগুলো চিহ্নিত করতে সহায়ক হবে।

#### অপেক্ষা/প্রত্যাশা:

আপনি যদি এই গবেষণায় অংশগ্রহণ করতে রাজি হন, তবে আপনার শিশুদের বাইরের খেলা এবং জলবায়ু পরিবর্তনের প্রভাব সম্পর্কিত আপনার দৃষ্টিভঙ্গি, মতামত, চিন্তা ও অভ্যাস শেয়ার করতে বলা হবে। এটি আপনার ব্যক্তিগত মতামত, শিশু বিকাশ, আপনার শিশুর খেলার রুটিন এবং পরিবেশ বা আবহাওয়া সম্পর্কিত যেকোনো পরিবর্তনের অভিজ্ঞতার উপর ভিত্তি করবে। সাক্ষাৎকারের আনুমানিক সময় ৪০-৬০ মিনিট।

#### ঝুঁকি এবং সুবিধা:

এই গবেষণায় অংশগ্রহণের কোনো সরাসরি বা পরোক্ষ ঝুঁকি নেই। আপনার অংশগ্রহণ পিতামাতা, শিক্ষক, নীতি নির্ধারক এবং অন্যান্য স্টেকহোল্ডারদের মধ্যে জ্ঞান ও সচেতনতা বৃদ্ধিতে অবদান রাখতে পারে, যা ভবিষ্যতে শিশুদের কল্যাণ ও খেলাধুলার সুযোগের জন্য উপকারি হবে।

#### গোপনীয়তা:

আপনার প্রদত্ত সমস্ত তথ্য গোপন রাখা হবে এবং শুধুমাত্র একাডেমিক উদ্দেশ্যে ব্যবহার করা হবে। কোনো ব্যক্তিগত পরিচয় প্রকাশ করা হবে না। গবেষণা সম্পর্কিত যেকোনো প্রশ্ন বা স্পষ্টীকরণের জন্য আপনি যে কোনো সময় আমার সাথে যোগাযোগ করতে পারেন।

#### অংশগ্রহণ না করার অধিকার এবং প্রত্যাহারের অধিকার:

আপনার অংশগ্রহণ সম্পূর্ণ স্বৈচ্ছামূলক। আপনি সিদ্ধান্ত নিতে পারেন যে আপনি অংশগ্রহণ করবেন কি না এবং যে কোনো সময় কোনো প্রকার প্রভাব বা শাস্তি ছাড়াই আপনার অংশগ্রহণ প্রত্যাহার করতে পারেন।

যদি আপনি এই গবেষণায় অংশগ্রহণ করতে রাজি হন, দয়া করে নীচের স্থানে স্বাক্ষর করে আপনার সম্মতি প্রকাশ করুন।

পিতামাতার নাম: \_\_\_\_\_

গবেষকের নাম: \_\_\_\_\_

পিতামাতার স্বাক্ষর: \_\_\_\_\_

গবেষকের স্বাক্ষর: \_\_\_\_\_

ধন্যবাদ আপনার সহযোগিতার জন্য।

যেকোনো অতিরিক্ত প্রশ্নের জন্য যোগাযোগ করুন: 01732604443