Parental Perception about Climate Change and the Consequences of Climate Change on Children in Early Years

By

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A thesis submitted to Brac Institute of Educational Development in partial fulfillment of the requirements for the degree of
Master of Science in Early Childhood Development

Brac Institute of Educational Development
Brac University
December, 2022

Declaration

It is hereby declared that

1. The thesis submitted is my/our 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/We have acknowledged all main sources of help.

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Approval

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Ethics Statement

Title of Thesis Topic: Parental Perception about the Climate Change and the Consequences of Climate Change on Children in Early Years

Student name: Jessica Helen Corraya

1. Source of population: Parents of children aged between 0 to 8 years

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)
   c) Physical risk (N/A)
   d) Sensitive questions (Yes)
   e) Benefits to be derived (Yes)
   f) Right to refuse to participate or to withdraw from the study (Yes)
   g) Confidential handling of data (Yes)
   h) Compensation and/or treatment where there are risks or privacy is involved (N/A)

4. Will Signed verbal consent for be required (yes or no)

   a) from study participants (N/A)
   b) from parents or guardian (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) Questionnaire or interview schedule (Yes)

Ethical Review Committee:

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Abstract

To develop to their greatest potential, young children must be allowed to live in an environment free of pollutants and hazards. For children in developing nations, it is essential that their parents are informed of climate change, its effects on children's health, and how to help their children grow and develop. A survey was conducted using hybrid modality to explore parents' understanding of climate change and their awareness of the effects it has on children's learning and development in early years. A total of 60 parents with children aged 0 to 8 years participated in this survey. A self-rated questionnaire was developed and used to collect data. Findings reveal that 100% parents from urban areas are aware of the climate change issue. About 85% of the parents have been exposed to some kind of climate change related situation or disasters. They have also reported that families suffer different types of problem like loss of job, domestic animals, home etc. due to climate change. It is also found that 63%, 95%, 96% 39% 16% and 14% parents think that climate change effects children's physical health, mental health, learning, immunity, cognitive development and disability respectively. More awareness is needed among parents on how climate change is affecting children's lives indirectly from the early years and how to prevent their children from this situation. Therefore, this research emphasizes the need for more research, awareness-building, and policy changes to assure the service and lessen the harmful effects of climate change on children.

Keywords: Climate change, Consequences, Development, Learning, Mental health, Physical health.

Dedication

This thesis is dedicated to my dear parents and siblings, who have supported and inspired me during this Master's degree.

Acknowledgement

I want to thank BRAC Institute of Educational Development, Brac University (BRAC IED, BracU) first and foremost for enabling me to accomplish my post-graduate degree in Early Childhood Development. Dr. Erum Mariam, Director of the Brac Institute of Educational Development, has my sincere thanks for choosing me for this course.

I would also like to express my deepest appreciation and gratitude to my Supervisor, Ms. Sakila Yesmin, Senior Lecturer, BRAC IED, BracU for all her support and supervision to complete my thesis. Her words of encouragement and relentless patience in me has given me the strength to believe in myself during this whole process. Without her guide, support and persistent help this dissertation would not have been possible. I also want to express my sincere appreciation to all of my respective faculty for their support and advice while I worked toward earning my degree and the thesis committee members for their valuable feedback.

In addition to my faculty, I would want to express my sincere thanks to my family members, who have helped me throughout by encouraging me and having faith in me. Particularly, my parents and siblings have consistently loved, supported, and blessed me throughout my life. I also want to thank my friends for staying with me and supporting me on my path.

Finally, I'd want to express my appreciation to all the parents who took the survey and helped me finish the thesis.

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List of Acronyms

UNICEF	The United Nations International Children's Emergency Fund
WHO	World Health Organization
ECD	Early Childhood Development
UNISDR	United Nations Office for Disaster Risk Reduction
FCCC	Framework Convention on Climate Change
IPCC	Intergovernmental Panel on Climate Change
ARI	Acute Respiratory Infections
APA	American Psychological Association
SDG	Sustainable Development Goals
FAO	Food and Agriculture Organization
PTSD	Post Traumatic Stress Disorder

Chapter I

Introduction & Background

Introduction:

One of the biggest health risks of our time is climate change, which is especially harmful to children. For a child's overall development, a secure environment with all positive stimuli is required. Part of the secured environment is to ensure the proper environment for a child to grow up in. In the early years it is essential for children to be able to live in a pollution free environment to reach their full potential.

According to research, climate change poses one of the greatest risks to human health in the twenty-first century (Watts et al., 2015), is the biggest hazard to mankind as a whole (World Economic Forum, 2018), and poses an existential risk to our planet. Children and young people are more susceptible to its effects. The rise in global average temperatures and the changing climate pose substantial and escalating risks across multiple domains, such as; emotion regulation, cognition, learning, behavior, language development, and academic performance (Burke et al., 2015). Climate-sensitive health risks are disproportionately felt by the most vulnerable and disadvantaged, including women, children, poor communities, older populations, and those with underlying health conditions (WHO, 2021).

Young children need clean, safe and secure environments to develop their full potential. Their future depends on nurturing and sustainable environments they are in at the household and community levels. Children are at greater risk than adults from the many adverse health effects of climate change owing to a combination of behavioral environmental and physiological factors (Anand, 2021). The largely accumulated evidences indicate that children's health and development is adversely affected by changes in the environment due to climate change. Hence parents need to be aware of

the consequences of the environmental changes; in this case climate change in general affects the health, development, learning and overall wellbeing of their children.

Statement of the Problem:

Climate change is one of the greatest threats to human health in the 21st century (Watts et al., 2019). According to research, Children are more physiologically susceptible than adults to the impacts of excessive heat, drought, and natural catastrophes. Children's developmental trajectories can be derailed by climate change's indirect consequences, such as conflict, sickness, economic upheaval, undernutrition, or migration, making it more difficult for them to realize their full potential (Currie et al., 2016).

Disasters brought on by hazard-induced climate change can harm or completely destroy educational systems and school buildings, endangering the physical and mental health of communities and disrupting the continuity of education. Disasters have a negative economic impact on education because more kids are kept out of school to help support their families. According to research, females and kids with disabilities are likely to be disproportionately affected by such consequences in every case (Anderson, 2010).

According to an article in the Financial Express, UNICEF's Children's Climate Risk Index (UNICEF, 2021), which looks at how exposed children are to climate and environmental shocks, ranks Bangladesh 15 out of 163 countries. One in three children in Bangladesh, nearly 20 million children in total, are victims of extreme weather, floods, river erosion, sea level rise and other environmental shocks driven by climate change (Shahriar, 2021). Many of these children end up adrift in city slums, their health and educational prospects shattered (The Financial Express, 2022).

For the children living in developing countries, it is imperative for their parents to have knowledge and awareness on climate change and its consequences on the health and

development of the children from an early age. Most often parents are not aware of how adversely these factors can affect the children in the early age and consequently have negative effect on their overall development. This also has an effect on their adult life and how they contribute to the society and the country's economy at large.

Purpose of the Study:

The purpose of this study is to understand the knowledge of parents on climate change and to explore their awareness on the consequences it has on the learning and development of the children.

According to the Lancet countdown on climate change, "trends in climate change effects, exposures, and vulnerabilities reveal an unacceptable high risk for the current and future health of communities around the world" unless immediate and crucial action is done (Watts et al., 2018). The consequence of climate change is notable when comes to child health and it has been well documented through many researches. However, frequent changes in lifestyle, due to climate change disasters, also impacts mental health, learning and developmental process of children. Since this impact is not directly visible, often it gets overlooked by adults and caregivers.

Children are exposed to ongoing environmental risks to their health and wellbeing starting in the prenatal stage. These threats existing all environments in developing and industrialized countries, in rural and urban areas, and everywhere children live, learn and play (Nazir et al., 2019). An estimated 36 per cent of deaths in children younger than 14 years are attributed to illness and conditions related to poor environments. The largest burden is attributed to diarrhea, which kills at least 1.9 million children under five annually and sickens tens of millions more (UNICEF, November 2008). During any climate hazards, children mainly face food scarcity, lack of housing, clothing,

suffer from many diseases, many physical injuries along with losses of relatives and other resources they may suffer from mental sickness (Nazir et al., 2019). School going children are unable to attend school as a consequence of different natural hazard caused by climate change. This deeply impacts their learning process and mental wellbeing.

Children needs support and empowerment from parents to respond adaptively to the climate change consequences. If parents are aware of the climate change and its consequences, they can support their children through actively engaging with the issue themselves and through communication and other strategies that help build children's hope, efficacy, resilience, and engagement, and in the process can support their children's health, developmental and learning needs (Sanson et al., 2018).

The study intends to explore if parents from middle-class to upper-middle-class families are aware of the subject of climate change and how it is impacting their children generally.

Significance of the Study:

Many studies suggest Despite having a considerably greater interest in the result than adults do, children are frequently excluded from talks about the best ways to combat climate change. Instead, children should play a prominent role in these discussions (Currie et al., 2016).

For the past two decades, more than 200 million people have been suffering from natural disasters annually, with 90% of related deaths occurring in poor countries (UNISDR, 2005). The capacity to deal with climate change induced events is heavily dependent on people's socio-economic condition (Mercer et al., 2010). Communities who are poor, special in nature, more susceptible to any change and marginalized get severely affected by disaster. Climate change exacerbates the challenges of human

development by imposing burden on such communities like children. Even though children are least responsible to climate change, their present and future livelihood and well-being are now overwhelmingly threatened by climate change (Islam, 2014). Statistical evidences reveal more than 600 million children are living in world's ten most vulnerable countries to climate change (UNICEF, 2013). Moreover, climate change costs in future will account a significant part of world's GDP and will put children into more vulnerable situation.

The impacts of climate change are worldwide. For Bangladesh, they are most critical as large part of the population is chronically exposed and vulnerable to a range of natural hazards. Already, the human suffering and cost to development is massive to this country and its people who are victims of human induced global warming. (Biswas et al., 2009).

As climate change is expected to only increase the number and intensity of extreme events, the incidence and intensity of diseases are expected to be more prevalent (Sheffield and Landrigan 2011; Ragavan, Marcil & Garg, 2020). Children's health, particularly acute respiratory infection (ARIs) and diarrhea diseases, are prominent causes of death in low-income countries (Ullah et al., 2019). Bangladesh- the largest delta in the world- is one of these places and, to add to the problem, one of the most vulnerable to climate change effects due to its geographical position. Climate change is affecting directly (through changes in precipitation and temperature) and indirectly ARIs and diarrhoea incidence. It disproportionately affects developing nations, lower-class people within the social structure and particularly children (Benevolenza & DeRigne, 2019).

This study will extend existing knowledge about consequences of climate change on children's development and learning in early years as well as help to explore the

awareness among parents. This study will be beneficial for the policymakers while developing strategies for supporting the child overall development by addressing the environmental issues. This study will also be beneficial for the health professionals, caregivers & other family members, students, and researchers.

As there are very few studies could be found in the Bangladeshi context, in identifying the parents' perception on the consequences of climate change on the development of children, this study could be helpful to gain the idea about the awareness level and knowledge of parents in this area.

Research questions:

RQ1: What do parents know about climate change?

RQ2. What is the parents' understanding about the consequences of climate change on children in their early years?

Operational Definitions:

1. **Climate Change:** The Framework Convention on Climate Change (FCCC), focused on international policy, defines climate change as "a change of climate that is attributed directly or indirectly to human activity, that alters the composition of the global atmosphere, and that is in addition to natural climate variability over comparable time periods." The Intergovernmental Panel on Climate Change (IPCC), focused on scientific assessment in support of the FCCC, defines climate change as "any change in climate over time whether due to natural variabilities or as a result of human activity." (Pielke, 2004). In this study we will define climate change as the changes in climate due to human activities.

2. **Consequences of Climate Change on Children:** According to UNICEF's report on impact of climate change on children published in 2015, there may be no greater, growing threat facing the world's children-and their children-than climate change. many evidences show that children suffer in multiple areas of their lives due to climate change. Since climate change results into disastrous environmental hazards, it creates food insecurity, rising air pollution, ARI (acute respiratory infections), malnutrition etc. among children (UNICEF, 2015). Climate change threatens children's survival, development, nutrition, education, mental wellbeing, and access to health care (UNICEF 2015).
3. **Child Development:** Child development refers to the sequence of physical, language, thought and emotional changes that occur in a child from birth to the beginning of adulthood. During this process a child progresses from dependency on their parents/guardians to increasing independence (what is child development, n.d.).
4. **Child Mental Health:** According to American Psychological Association (APA) child Mental health is an essential part of children's overall health which has a complex interactive relationship with their physical health and their ability to succeed in school, at work, and in society (APA, September 2009).
5. **Child learning:** Learning refers to 9the behavioral changes caused by environmental influences (Charlesworth, 2015).
6. **Early years:** Childhood (usually defined as 0-8 years old) is a period of remarkable physical, cognitive, socio-emotional, and language development. During this period children reach their developmental milestones (Early Childhood Care and Education, 2017). In the first few years of life, more than 1 million new neural connections are formed every second that build brain

architecture which is the foundation of future learning, behavior, and health (The Importance of the Early Years,2017). In this study, children from this age group are focused.

Chapter II

Literature Review

The effects of climate change on children are the main topic of this section. The literature is separated into sections that address different facets of children's developmental domains in both the global and Bangladeshi contexts.

Global Context:

The consequences and costs of climate change on our world will define the 21st century. Climate change will pose economic, social, and political predicaments that will challenge the successful implementation of the Sustainable Development Goals (SDGs) (Koubi, n.d.). By 2100, the average global temperature will have risen 1.5 °C. There is indisputable proof that the current climate catastrophe will result in an increase in catastrophic effects for a while. There will be a rise in the frequency and intensity of extreme weather events (such as hurricanes and typhoons), air and land pollution, UV radiation, ocean acidification, and rising sea levels. These will increase heat waves, droughts, and wildfires, as well as crop yield reductions, food insecurity (due to decreased livestock, aquaculture, and agricultural output), and floods, which will encourage more people to leave cities that are underwater near seacoasts (Olson et al., 2020). It is estimated that 88% of the existing global burden of disease attributable to climate change occurs in children younger than 5 years old in both industrialized and developing countries (Zhang, 2007).

Climate change consequences on children globally:

Climate change is the long-term shift in average weather patterns across the world. Since the mid-1800s, humans have contributed to the release of carbon dioxide and other greenhouse gases into the air. This causes global temperatures to rise, resulting in long-term changes to the climate (UN Foundation, 2022).

According to UNICEF report focusing on impact of climate change on which puts every child at risk, published in August 2021, globally children from different countries are severely affected due to disasters caused by the change in climate. According to the report, children in Kabul, Afghanistan are at increased risk of respiratory infections from burning fossil fuels, where children in Dhaka, Bangladesh are more prone to health complications like asthma, allergies, lung cancer due to air pollution. The report also shared, in 2020, children in Cambodia were at higher risk of getting affected with waterborne disease due to the flood which affected the livelihood of 900,000 people. Heavy flood in 2020 in Congo created food crisis for the families as 80% of the fields were damaged and livestock and food stocks were washed away (UNICEF, 2021).

In Fiji, due to the tropical Cyclose Yasa in 2021, children were not able to start their school year and a Hurricane in 2020 in Guatemala caused landslides and flooding affecting nearly 1.9 million people. Due to heavy seasonal rains and flooding in several parts of South Sudan in 2020, families were suffering from lack of clean water, sanitation and nutrition. The eastern parts of Zimbabwe suffered the combined effects of Cyclone Idai in 2019 and severe drought in 2020. The drought led to food insecurity where it was estimated that 1.1 million women and children would require humanitarian nutrition assistance, while 98,000 children under 5 would require immediate life-saving nutrition assistance (UNICEF, 2021).

Consequences of climate change on child health:

Children are uniquely vulnerable to these changes. Their immature physiology and metabolism; incomplete development; higher exposure to air, food, and water per unit body weight; unique behavior patterns; and dependence on caregivers' place children at much higher risk of climate-related health burdens than adults. (Sheffield, 2011).

Even though there has been a global decline in child malnutrition over the previous few decades, there has been a rise in undernourishment after 2015, which is partly attributed to the climate and severe occurrences (FAO, 2018). Climate change is currently affecting child health through increased heat stress, decreased air quality, altered disease patterns of some climate-sensitive infections, physical and mental health effects of extreme weather events, and food insecurity in vulnerable regions (Ahdoot et al., 2015).

Increases in precipitation have long-term implications on children's health because of poor nutrition, the development of infectious illnesses, and an overall rise in death rates. (Mrema et al., 2012). Droughts and drought-associated wildfires can significantly damage the respiratory health and can cause infectious diseases among children (Bandyopadhyay et al., 2012). Rapidly occurring severe weather conditions like heatwaves, freezing temperatures, and heavy rains make kids more susceptible to a variety of pathogens that may cause diseases, according to research from Australia and China. (Xu et al., 2014).

Consequences of climate change on child mental health:

The implications of climate change on mental health of children have been poorly researched, although it has come under increased scrutiny during the last decade (Burke

et al., 2018). Climate change leads to extreme events that bring an immediate and direct impact on the population in terms of mental health. However, changes also occur slowly, as in the case of temperature increase (Paolo et al., 2020).

Research has shown that peritraumatic experience is highly related to acute stress during and immediately after a disaster, which is expected to lead to the onset of PTSD (Gruebner, 2017). In addition to diagnosable mental health problems, other psychological effects of traumatic experiences in climate-related disasters and their ensuing disruptions can include negative impacts on children's capacity to regulate emotions, increased cognitive deficits, learning problems, behavioral problems, adjustment problems, impaired language development, and an undermining of academic performance (Jacobs et al., 2017, Dean et al., 2010, Garcia et al., 2016). As climate change undermines children's mental health, it increases this global burden (Burke et al., 2018).

Consequences of climate change on Child Development:

The rise in global average temperatures and the changing climate pose substantial and escalating risks across multiple domains, such as; emotion regulation, cognition, learning, behavior, language development, and academic performance (Burke et al., 2018). Newborns who are victims of climate change, either directly or indirectly by being the conceptuses/fetuses of women and men affected by climate change, may have an entire lifetime of chronic disease or lost capacity ahead of them (Olson, 2020). 25,000 infants per year between 1969 and 1988 were born earlier than normal (39–40 weeks' gestation) as a result of heat exposure, with a total loss of 150,000 gestational days per year (Barreca and Schaller, 2020).

These early life experiences have a long-lasting impact on the developmental trajectories also known as “life-course effects” (Barker, 1990). The longer-term effect of early childhood stress is the precocious development of non-communicable diseases. They account for 71% of deaths in the world and 75% of premature deaths in low- and middle-income countries (WHO, 2020).

Consequences of climate change on Child Learning:

Young children are at greater risk from asthma, diarrheal illness, heat-related, vector-borne and other infectious illnesses, and malnourishment, each of which is exacerbated by climate change and result in millions of missed school days each year (Epstein, 2011). When exposed to heat during the prenatal and early life period, adolescents show lower academic attainment and fewer years of schooling (Randall and Gray, 2019).

Climate change may negatively impact education among children via exposure to extreme temperature and heavy rainfall conditions. Exposure to higher-than-average temperatures during the prenatal and early-life period is associated with fewer years of schooling in Southeast Asia. In this region, a child who experiences temperatures 2 SDs above average is predicted to attain 1.5 fewer years of schooling than one who experiences average temperatures (Randall and Gray, 2019).

As the effects of climate change intensify, children in the tropics will face additional barriers to education. Climatic conditions in early childhood, given the strong evidence that exposure to adverse environmental, political, and socioeconomic conditions during this period negatively impacts long-term human capital outcomes including educational attainment and earnings (Alderman, 2011; Glewwe et al., 2001; Isen et al., 2017).

Bangladesh Context:

Climate change and its consequences:

Extreme climate events such as floods, cyclones, and droughts are common in Bangladesh which have serious impacts on the livelihoods of vulnerable populations (Salauddin, 2012). Despite producing only 0.56% of the global emissions changing our climate, Bangladesh ranks seventh on the list of countries most vulnerable to climate devastation, according to Germanwatch's 2021 Global Climate Risk Index (CRI). The data shows that from 2000 to 2019, Bangladesh suffered economic losses worth $3.72 billion and witnessed 185 extreme weather events due to climate change (Rojas, 2021). Children from these poor families displaced by erosion and struggling with security face the danger of being forced into labour or marriage at an early age. According to experts, climate change is disrupting the overall development of children by putting their health, nutrition and education at risk while the safety of fetuses in the womb are also compromised (Ha. 2022).

Around 12 million of the children most affected live in and around the powerful river systems which flow through Bangladesh and regularly burst their banks. Another 4.5 million children live in coastal areas regularly struck by powerful cyclones. A further 3 million children live further inland, where farming communities suffer increasing periods of drought. (UNICEF, 2019). Climate change is deepening the environmental threat faced by families in Bangladesh's poorest communities, leaving them unable to keep their children properly housed, fed, healthy and educated (UNICEF, 2019).

Bangladesh is susceptible to infectious, waterborne, and other illness epidemics. According to records, the number of cases of malaria rose from 30,282 in 1991 to 42,012 in 2004 (WHO, 2007). Diarrhea, dysentery, and other illnesses are also on the

rise, particularly during the summer. According to forecasts made by the Ministry of Environment and Forests (MoEF) of Bangladesh, the combination of rising temperatures and a possible rise in summer precipitation may lead to the development of several infectious illnesses. Dehydration, hunger, and heat-related illness are further pressures brought on by climate change, particularly for children and the elderly (Rahman, 2008).

Perception of parents on climate change:

Few studies have particularly looked at public climate worry, and even fewer have looked precisely at how parents perceive climate change in general (Semenza, et. al., 2008). It is imperative to prepare individuals and communities to adapt to the consequences of climate change, especially in vulnerable regions of the world such as the tropics, which have begun to experience the consequences of climate change (Boon, 2014). According to evidence, young people's pro-environmental orientation appears to be connected to their parents' pro-environmental beliefs, attitudes, and actions (Grønhøj and Thøgersen 2009), indicating that family socialization has a significant impact on young consumers' pro-environmental orientation.

A study found that parents who believe that climate change exists or were worried it could impact their children's health (Ragavan et al., 2021). According to another study, many parents indicated that their children will experience the impacts of climate change during their lifetime, while some also mentioned that the impacts are already occurring, particularly referencing extreme and abnormal weather events (Gaziulusoy, 2020). Furthermore, another study also revealed that not all parents were actively preparing or planning to prepare their children to cope with the impacts of climate change that they might encounter during their lifetime due to lack of information and ambiguity

regarding climate change issue (Ekholm et al., 2017). It is very important for parents to be aware of the concept of climate change and also acknowledge the consequences it brings to their children's lives.

Chapter III

Methodology

Research Approach

In order to gain a comprehensive understanding and in-depth knowledge of parents' perspectives on climate change and its effects on young children, a quantitative approach was applied in this study. A quantitative research approach, according to Apuke (2017), deals with quantifying and analyzing variables in order to obtain findings. It entails the use of numerical data and statistical tools to analyze that data in order to provide answers to queries like who, how much, what, where, when, how many, and how. The information demonstrates the participants' perception on climate change and its impact, including their degree of knowledge on the subject, their comprehension of how it affects children's growth and learning, and their level of awareness on the consequences of climate change on the children in early years.

A survey questionnaire was developed for the research purpose. Survey research is defined as "the collection of information from a sample of individuals through their responses to questions" (Check & Schutt, 2012). Survey is a very useful approach when a researcher aims to describe or explain features of a very large group. The method is also used as a way of quickly gathering some general ideas and details about the population.

The supervisor and academic committee of BRAC IED, BracU assessed the entire study proposal.

A self-administered questionnaire was shared with the participants where they were be given a semi-structured questionnaire which they had to answer.

Research Participants

This study included parents of children from 0-8 years. The research was done through structured questionnaire interview. Due to time limitation, there was a small sample size containing only 60 parents in total. Both mothers and fathers participated in the survey. The survey was conducted via both virtual platform and in-person interviews. The participants were parents from middle to upper middle class socio-economic background in Dhaka City. According to Bangladesh Bureau of Statistics (BBS, 2021), In Bangladesh almost 25% of total population of the country belong to middle class socio-economic background where the average family earning in terms of salary is between BDT 40,000 to BDT 80,000.

Research Site

The participants were from Dhaka city. The socio-economic background for the participants were middle and upper-middle class parents with children aged 0-8 years.

Sampling/ Participant Selection Procedure

The survey was conducted based on a purposive sampling method because there is a specific purpose to guide the sample selection to reach a target sample and represent the population. The parents were selected purposively following inclusion criteria:

- Parents with children of 0-8 years
- Parents from middle to upper-middle class socioeconomic background in Dhaka city

- Parents have an email account

Data Collection Methods:

Considering the context and possible challenges due to the time limitation, a survey was conducted. There were two parts of this study- tool development and data collection. Based on the literature review and research questions of the study initially a question bank was developed by the researcher. Based on the questions of the question bank, a self-administered and semi-structured questionnaire was developed focusing on the purpose and objective of the study which is to explore parent's knowledge on climate change and its consequence on their children of early years. Then it was reviewed by the experts for face validity. Afterwards a small field study was conducted to pilot the questionnaire among 3-4 participants to check if the questions are clear and easy to understand. After the piloting, the questionnaire then was distributed using hybrid modality including both digital platform and in-person interview to collect the data. The questionnaire was sent to the participants prior with the consent forms. The researcher took consent from all participating parents. Internet links was supplied to the participants with a reasonable amount of time in hand to respond. It was ensured that respondents' identity remains secured and confidential along with their given responses. They were also assured that the survey will be solely used for study purposes. Informed consent was obtained from the respondents.

The participants were ensured that all the information will be maintained with confidentiality and their names or any of the given information will not be disclosed anywhere apart from the research purpose.

Data Management and Analysis

To analyze the data, Microsoft Excel (MS EXCEL) was employed. To arrange, examine, and display data in a meaningful way, descriptive statistics (mean, standard deviation) was employed. All the data were stored in google spreadsheet (Excel Sheet). After the collection of data, the data was cleaned. The accuracy of the data will be checked manually. The researcher analyzed the data by employing descriptive analysis. Frequency distribution and percentage of data was calculated. Tables and Graphs were used to represent the results for better understanding.

Validity and Reliability of the Research Tool

The survey was checked by ECD experts to check the face validity. Data was kept to preserve researcher's credibility. The data was continuously reviewed by the researcher herself utilizing sources to assure correctness. Additionally, piloting was carried out to keep the research tool's credibility, and after piloting, the research tool was finalized. The initial phase in research technique is piloting, which aids in the planning and revision of the major study.

Ethical Issues

Informed consent

Ethical approval of this study has been taken from BRAC IED, Brac University. Each participant received a detailed explanation and specific information that enabled them to allow themselves to decide whether or not to participate in the research project. Participants were given the assurance that they are free to leave the interview at any time and without giving a reason.

Parents' voluntary participation

The parents agree to take part in the study. No phrases were used to compel them or influence them.

Anonymity and Confidentiality

Strong efforts were made to preserve confidentiality and anonymity. Their identify and the data they submitted were not disclosed or utilized for anything except the research. They were given the assurance that the data they supply was utilized accurately and without manipulation of any sort.

Limitations of the Study:

Some circumstances or effects were out of the researcher's control due to restrictions in the data gathering process which created some limitations to the study.

- One of the main limitations of the study was time constraint.
- A small sample size was selected for the survey since the participants were required to have an email ID to fill in the survey form online.
- Since the survey was conducted in a small scale, the educated population of urban socio-economic background was selected, which limited the scope of exploring diverse knowledge base.
- The survey population did not have proper exposure with climate change disasters due to living in urban areas.

Chapter IV

Results & Discussion

Findings:

The purpose of this study was to understand the perspective of parents on climate change and its consequences on children's overall development. Descriptive statistics was used to analyze the data. The findings are explained in 2 different areas focusing on parent's understanding on the climate change issue and the consequences of climate change focusing on 4 different sub-areas of children's developmental domains.

The survey was conducted on 60 parents with children from 0-8 years. Toral 60 individuals participated the survey conducted via email and face to face interview starting from 5th October to 20th October 2022.

Demographics Information:

A total of (n=60) responses were recorded in this study. Out of the 60 parents, majority of them were female which is almost 71.67% and 28.33% fathers participated in the survey. The age of the participants were in between 27- 43 years. The average age of the participants was 35 years (mean). On an average, 28.33% of the participants were service holders and 18.33% were teachers. The remaining participants were from various professions, including housewife, architects, psychologist, developmental professional, scientists, researchers, software engineers etc.

Table 1: Demographic characteristics of the respondents

Population	Variables	Frequency	Percentage
Mother	**Age**		
	25-29	3	15%
	30-34	12	60%
	35-39	3	15%
	40-45	2	10%
	Educational Qualification		
	Graduate	10	16.67%
	Post Graduate	33	55%
	Occupation		
	Teacher	9	15%
	Researcher	4	6.67%
	Private service	6	10%
	Housewife	8	13.33%
	Mental Health Professional	5	8.33%
	Architect	2	3.33%
	Others	9	15%
Father	**Age**		
	31-35	8	13.33%
	36-40	5	8.33%
	41-45	3	5%
	Educational Qualification		
	Graduate	5	8.33%
	Post Graduate	12	20%
	Occupation		
	Teacher	1	1.67%
	Private service	11	18.33%
	IT Professional	3	5%
	Others	3	5%

Table-2 shows, among children, 52% of the children were boys and 48% of the children were girls. The children all belong to 0-8 years old age group, where 38.33% children are from 0-3 years age cohort, 35% children are from 4-6 years age cohort and 26.67% children are from 7-8 years age cohort.

Table 2: Demographic characteristics of the respondents' children

Population	Variables	Frequency	Percentage
Children	**Age**		
	0-3	23	38.33%
	4-6	21	35%
	7-8	16	26.67%
	Gender		
	Boy	31	52%
	Girl	29	48%

1. Understanding the concept of climate change and its importance

The findings regarding the parent's understanding about climate change in present state is the main emphasis of this section. The parents answered question on if they have heard of climate change and what do they understand by climate change in this section. Additionally, the sources of information on climate change along with the importance of climate change in their lives were explored with the survey questionnaire.

1.1 Understanding of climate change:

Out of the 60 respondents, 100% responded yes when asked if they have heard of climate change. Table no 3 demonstrates, almost 3.33% (2 out of 60 participants), associate climate change with flood or heavy rainfall, almost 9% (5 participants) associate climate change with heatwave, another 3.33% (2 participants) thinks climates change causes sea level rising and majority of the participants (85%, 51 participants) believes climate change causes all kinds of disasters, such as heavy rainfall, forest fire, draught, river erosion, sea level rising and heatwave etc.

Table 3: Parent's understanding of climate change

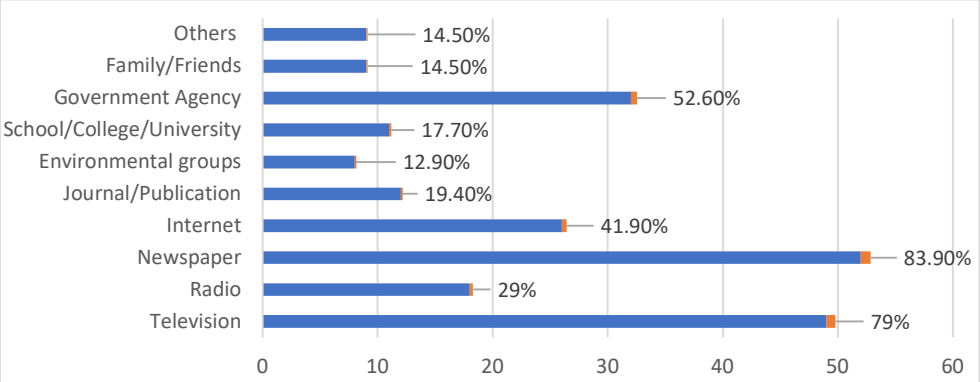
Variables	Scoring Criteria	Frequency	Percentage
Climate change is related with	Draught	0	0%
	Flood/ Heavy Rainfall	2	3.33%
	Heatwave	5	8.33%
	Forest fire	0	0%
	River erosion	0	0%
	Sea level rising	2	3.33%
	All of the above	51	85%

Table 4: Parent's understanding of demography affected most by climate change

Variables	Scoring Criteria	Frequency	Percentage
Seriously affected by Climate change	Children	11	18.33%
	Elderly	1	1.67%
	All of the above	48	80%

The diagram represents the no of primary sources of information parents had to learn about climate change. Figure 1 shows that most of the parents (almost 84%) heard about climate change from newspapers. Another popular source of information is television, 79% parents shared that they heard or learned about climate change from television. Other sources of information were government agencies, internet, radio, educational institutions, journals etc. The lowest no of parents (almost 13%) shared that they learned about the concept of climate change from environmental groups.

Figure 1: Distribution of information sources on climate change



1.2 Parent's experience on climate change:

100% of the population agreed that the climate change is an important issue among which 5% (f=3) shared that the issue is quite important for them and 95% (f=57) shared that the issue of climate change is very important for them.

Table 5: Parent's experience on climate change related disasters

Variables	Scoring Criteria	Frequency	Percentage
Exposed to climate change situation	Yes	51	85%
	No	9	15%
Exposed to which type of climate change situation	Forest fire	2	3.6%
	River erosion	2	3.6%
	Sea level rising	4	7.3%
	Heatwave	41	74.5%
	Storm/Thunderstorm	27	49%
	Flood/heavy rainfall	30	54%
	Draught	12	22%

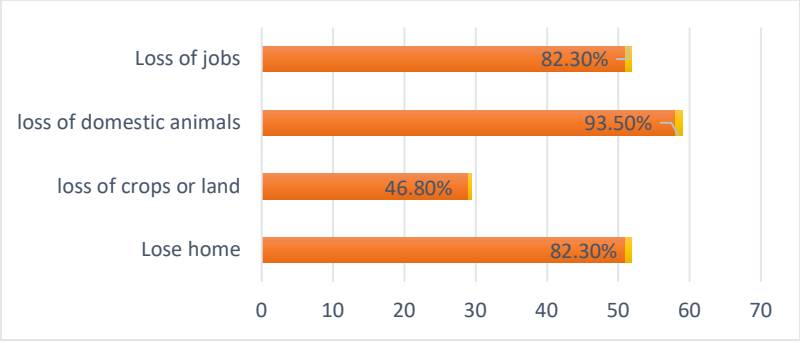
Table 5 demonstrates almost 85% of the parents (f=51) have been exposed to some kind of climate change related situation or disasters, and 15% (f=9) parents have not been exposed to any kind of climate change situation. Out of the 51 parents, 74.5%, 49%,

54% and 22%, parents have been exposed to heatwaves, storm, flood and draught respectively. It is also showed that 3.6%, 3.6% and 7.3% of parents have been exposed to forest fires, river erosion and sea level rising. About 98% of parents agreed that humans are responsible for the rapid changes in climate.

1.3 Effects of climate change on families:

Families suffer through different types of adversities during any disaster. Figure 2 illustrates the types of problems families suffer from due to climate change according to the participants. 93.5% of the parents agreed that climate change causes loss of domestic animals and only 46.80% thinks that families suffer through loss of lands due to climate change events. As a response to loss of jobs or losing home, 82.30% parents responded yes to climate change event causing them.

Figure 2: Distribution of types of problems families suffer from due to climate change



2. Understanding on the consequences of climate change on children's development

The objective of the research was to explore parent's understanding on the consequences climate change has on children's overall development. Parents were asked several questions to explore their knowledge on the consequences climate change has on children's health, mental health, learning and development process.

2.1 Consequences of climate change on children's physical health

According to Table 6, 37% of respondents (f=22) believe that climate change has no impact on children's health, whereas 63% of parents (f=38) think it will have an adverse effect on children's health.

To further explore if the parents were asked questions of risks of different diseases. Out of the 38 parents, 87% of them agreed that climate change causes an increase in injuries and death among children and 13% parents responded negatively to this question. Though a small percentage of parents do not believe that climate change has direct impact on children's health, a significant number of parents agreed that the risk of vector borne diseases (such as; malaria, dengue etc.) and water borne diseases (such as; diarrhea, cholera, typhoid etc.) has increased. In case of vector borne diseases, 93% parents (f=56) responded yes to increased risk due to climate change whereas only 7% responded negatively to this question. For water borne diseases, 100% of the parents believe that climate change increased the risk of getting infected for children.

The findings also suggest that 93% of the parents believe that heatwaves caused by extreme heat in the atmosphere, increases the risk of getting heatstroke among children. Only 7% parents believes that children are not at increased risk of getting heatstroke.

Table 6: Distribution of types of affect climate change has on children's physical health

Variables	Responses	Frequency	Percentage
Climate change has direct impact on children	Yes	38	63%
	No	22	37%
Extreme weather events (floods, heatwave, storms, cyclones etc.) causes more injuries and deaths among children	Yes	33	87%
	No	5	13%
Climate change increases risk of vector borne diseases among children	Yes	56	93%
	No	4	7%
Climate change increases risk of water borne diseases among children	Yes	60	100%
	No	0	0%
Heatwaves increases risk of heat stroke among children	Yes	56	93%
	No	4	7%

2.2 Consequences of climate change on children's mental health:

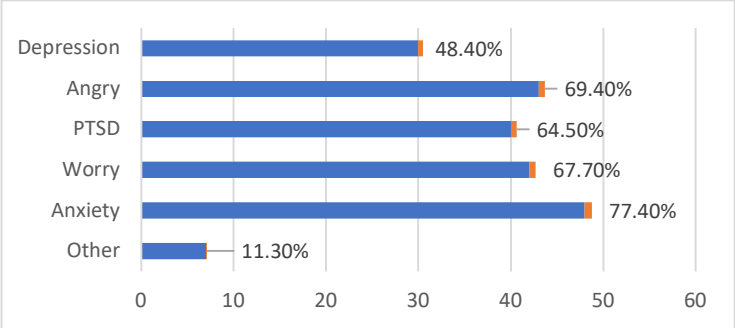
Parents were questioned on a number of occasions on how children's mental health is impacted by the effects of climate change. The majority of parents, as shown in Table No. 7, think that traumatizing circumstances such child displacement brought on by climate change events. Only 5% of the participants (f=3) gave a negative response to this question, whereas 95% of the participants (f=57) gave a favorable response.

Table 7: Distribution of parents' opinion on displacement due to climate change events causes trauma in children

Variables	Scoring Criteria	Frequency	Percentage
Displacement causes trauma in children	Yes	57	95%
	No	3	5%

The findings captured the parent's understanding on what types of psychological distresses are caused by climate change among children. As shown in figure 3, according to parents, children suffer through different types of psychological distresses. Majority of the children suffer through anxiety, anger, worry as demonstrated in the diagram. 77.4% parents think children suffer from anxiety, 69.4% thinks they suffer from anger and 67.7% thinks they suffer from worrying. No tools were used to measure the distresses, these data only represent parents' opinion.

Figure 3: Distribution of types of psychological distress caused by climate change



2.3 Consequences of climate change on children's learning:

According to Table No. 8, 98.33% (f=59) of parents believe that it is difficult for kids to focus in class when it is too hot, whereas just one parent (1.67%) disagreed. Another 88.33% of parents (f=53) reported that they believed children missed school because to

torrential rain, flooding, and heatwaves. Nearly 87% of parents feel that kids who experience academic loss are unable to properly contribute to the national economy.

Table 8: Distribution of types of affect climate change has on children's learning

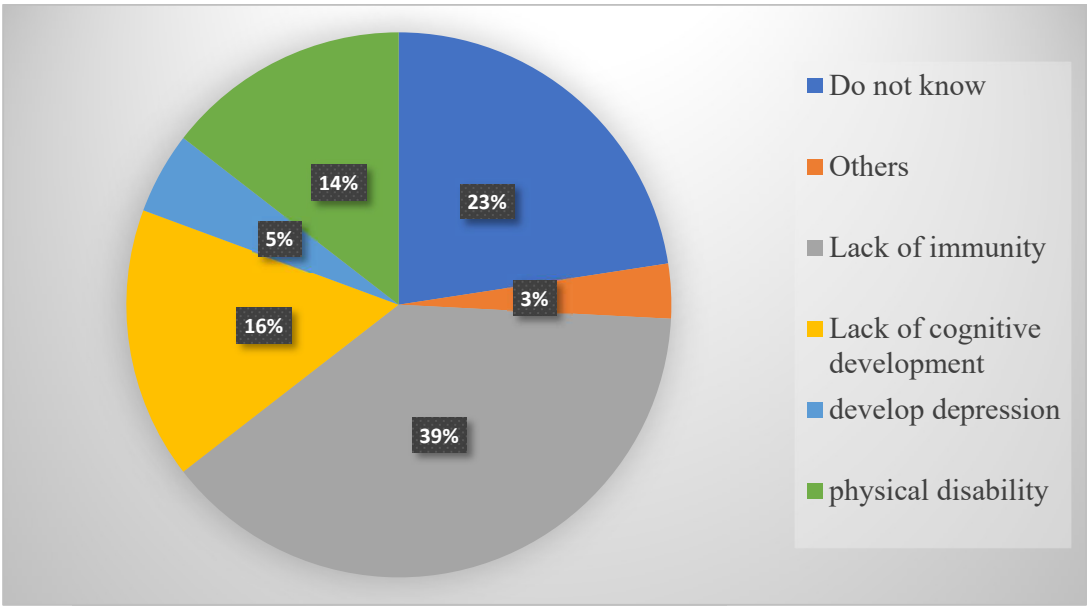
Variables	Scoring Criteria	Percentage
Children's learning process is affected by climate change	Yes	96%
	No	4%
Excessive heat due to climate change makes classroom environment difficult to learning	Yes	98.33%
	No	1.67%%
Children misses school days due to heavy rainfall, heat waves or floods	Yes	88.33%
	No	11.67%
Learning process is interrupted as the classrooms are used for shelters	Yes	90%
	No	10%
Children suffering from study loss cannot contribute to the country's economy	Yes	86.67%
	No	13.33%

2.4 Consequences of climate change on children's overall development process:

In addition, parents were asked to express their views on the direct and indirect consequences of climate change on children. To the best of their knowledge, parents were asked to describe the sorts of effects that climate change has on children during pregnancy in order to determine whether they are aware of the indirect consequences. Figure 4 shows that 39% parents believe that children's early lack of immunity is due

to the shorter gestation time brought on by climate change catastrophes and anguish. 16% of parents think this has an impact on their child's cognitive development, and 14% think it results in physical problems. However, 23% of parents are unaware of the potential effects that pregnancy may have on the children's lives.

Figure 4: Distribution of shortened gestation (pregnancy) period caused by climate changes causes which long-term risks for children



Discussion:

The survey was conducted on 60 parents of children from 0-8 years. The study aimed to understand parent's knowledge on climate change and the consequences of it on children's lives in early years.

The findings help to offer a basic understanding of the wide-ranging, many harmful effects of climate change on children and parents perceive the concept of climate change and its effects. Due to many inequalities in terms inclusion, education, and

health, this study accentuated the elevated risk factors for children. Parents were questioned about their understanding of this situation and its effects.

1. Understanding the concept of climate change and its importance

This section centered on how parents see climate change. It also concentrated on the sorts of climate change experiences that parents have had and their sources of climate change knowledge.

1.1 Understanding of climate change

The study reveals that almost all parents are aware of climate change as an important issue. They associated climate change with the weather changing events such as; heavy rainfall, draught, river erosion etc. Since all participants were educated parents, it can be understood that they have some knowledge on the issue and have heard of climate change through different media such as; television, newspaper, internet, environmental groups, various publications etc. This can be stated from the study that generally the parents with a higher educational background have knowledge on climate change and its importance in their lives.

The study also shares that parents believe that climate change has an adverse effect on children and elderly people. In related research, many parents said that throughout their children's lifetimes, they will feel the effects of climate change; however, several also said that these effects are already happening, especially in reference to extreme and unusual weather occurrences (Gaziulusoy, 2020). According to a different survey, parents who think that climate change is real are concerned about how it can affect their children’s' health (Ragavan et al., 2021).

1.2 Parent's experience on climate change

The study shows that 100% of the parents have experienced some type of climate change related weather emergencies in their lives. Since the parents were selected from the urban areas, 74.5% parents shared they were exposed to extreme heatwave and 54% of them were exposed to heavy rainfall. In accordance with a World Bank assessment from 2018, Bangladesh is particularly vulnerable to several natural disasters, such as floods, droughts, cyclones, and earthquakes due to its flat terrain, low-lying, and climatic characteristics, as well as its population density and socioeconomic environment. Floods, earthquakes, and droughts might affect more than 80% of the population, while cyclones could affect more than 70% of people.

Since the parents surveyed for this study are from urban areas, the population of Bangladesh who suffer of climate change related weather extremities, was not represented. However, it is evident that even in urban areas, people are suffering from extreme weather conditions and find it concerning for their lives. Particularly in sensitive parts of the world like the tropics, which have already started to feel the effects of climate change, it is critical to get people and communities ready to adapt (Boon, 2014).

1.3 Effect of climate change on families

The study shares that parents are aware of the fact that due to climate change families face different types of losses in their lives which have implications on both their financial, mental and physical health. 93.5% of the parents shared that families can lose domestic animals due to weather extremities. And 46.8% parents think that families suffer through loss of crops. It can be speculated from the study that though the parents who participated in the survey are from urban areas, they believe that due to climate

change related weather events, mostly people from the rural or semi-rural area (with possession of land, domestic animals etc.) are mostly affected.

2. Understanding on the consequences of climate change on children's development

This section of the study mainly focused on the consequences climate change has on different developmental domains of children's lives in early years. It focused on both direct and indirect consequences of climate change along with parent's knowledge and understanding on this issue.

2.1 Consequences of climate change on children's physical health

The findings indicated that 63% parents are aware of consequences of climate change on the children's physical health. Although a tiny portion of parents do not think that climate change directly affects children's health, a sizable portion of parents concurred that the danger of vector-borne illnesses like malaria and dengue fever as well as water-borne illnesses like diarrhea, cholera, and typhoid has increased. 93% of parents believe that climate change will raise the danger of contracting vector-borne illnesses. 100% of parents think that climate change has made it more likely for children to contract water-borne infections. According to research from Australia and China, sudden occurrences of extreme weather, such as heatwaves, freezing temperatures, and heavy rains, increase children's susceptibility to a range of infections that may cause illnesses. (Xu et al., 2014).

This can be derived from the findings that since extreme weather conditions such as; heavy rainfall, draught, floods etc. causes rise in vector borne and water borne diseases among children in early years which can have an direct effect on their physical

development. Since children do not have a strong and fully developed immune system, these diseases can derail their developmental progress.

2.2 Consequences on children's mental health

The study also discovers that parents believe that climate change has an effect on children's mental health. 95% of the parents think that displacement causes trauma among children which can hamper the mental wellbeing of the children. There were no tools used during the survey to measure the types of psychological distress children suffer through due to climate change related activities. However, parents shared their views and understanding on the consequences of the issue on children's mental health. 77.4% parents think children suffer from anxiety, 69.4% thinks they suffer from anger and 67.7% thinks they suffer from worrying. Parents and teachers both noted that children display anxiety and show interest in talking about climate change in a similar survey that was performed in Australia among parents and teachers to explore their impression of the issues. (Baker, et. al. 2021).

It is crucial for parents to be aware of how climate change affects children's mental health and to start a conversation with them about it. Children's mental health is indirectly impacted by climate change, which may have an impact on their well-being and cognitive and emotional growth. Parents must be aware of the repercussions and take steps to promote their children's wellbeing.

2.3 Consequences on children's learning

Parents shared their concerns regarding the effect of climate change on children's learning through this study. Though the effect is long-term, parents still shared their concern on the fact that extreme weather conditions hinder children's learning. 98.33%

parents indicated that due to excessive heat or heatwaves, children are unable to concentrate and sit in the classroom. They also shared concerns on children not being able to attend schools during heavy rainfall. In a country where flood and cyclones are a common occurrence, it is very difficult to ensure that children are being able to attend schools and develop their learning skills.

Given the overwhelming evidence that exposure to unfavorable environmental, political, and socioeconomic conditions during this time negatively impacts long-term human capital outcomes, such as educational attainment and earnings, climatic conditions in early childhood are particularly important (Alderman, 2011; Glewwe et al., 2001; Isen et al., 2017).

The research revealed that 86.67% of parents think that children who don't finish school won't be able to contribute much to the economy of their nation. Understanding how long-term climate change will effect children's education is crucial for parents. Children are compelled to work physically to support their family when they are unable to finish their schooling. This not only negatively affects their quality of life but also a nation's economic development.

2.4 Consequences on children's overall development

According to the study, many parents are ignorant of how climate change is having an indirect negative impact on children's overall development. Mothers experience stress and have shorter gestation periods as a result of weather occurrences brought on by climate change. A shortened gestation time carries several concerns for the early life and development of the children.

According to the report, 39% of parents believe that children lack immunity, and 16% believe that climate change is to blame for their children's delayed cognitive

development. However, 23% of parents stated that they were not aware that climate change has such an impact on children's development.

The majority of the participants in this research were parents from urban regions with a good educational background. The number of parents in this sample reflects those who are more conscious of the problems that have a detrimental influence on their children's life. Nevertheless, roughly a quarter of the participants were ignorant of how climate change is influencing fetal development. Parents need to be aware of this issue because this is the time at which children begin to grow.

Conclusion

From the study it is apparent that parents living in urban area with a good educational background are aware of the issue and that it affects their children's lives regularly. However, because they have not experienced enough extreme weather events, they are not completely aware of the terrible consequences that these weather events may have on children's life. Bangladesh has one of the fastest-growing economies in the world, yet a sizable portion of its people are living in poverty. Extreme climate change events might have an impact on this people. There are crucial knowledge gaps within this demography about the connection between exposure to extreme weather events, and the likelihood of negative health effects, particularly in children which has not been explored vastly yet.

The aim of the study was to determine if parents believe that children between the ages of 0 and 8 are not able to reach their full potential because climate change events are likely to have an impact on their development in a variety of ways. Children's learning systems are disrupted when schools are closed due to severe weather or when students are unable to focus on their studies because they are exposed to the elements. The study

made a connection between the loss of the learning process and the future economic health of a nation because children who lack an education are compelled to work physically from an early age to support their family, which limits their ability to contribute much to the economy.

The study also shows that parents are more aware of the direct effects of climate change than they are of how those effects may affect their children's development in indirect ways. Parents may experience developmental delays in their children during the early years of their life if they are unaware that pregnant mothers who suffer through climate change events can have an impact on a child's development. Additionally, parents believe since many of them go through a significant amount of distress due to suffering from losses causes by weather events, children living with their parents also develops stress and anxiety among them and suffer through psychological distress.

Recommendation:

This study's conclusions and analysis revealed certain problems that may be remedied by means of some important potential recommendations.

- **Raising Awareness:**

  Children are at higher risk of getting affected by climate change disasters. The majority of individuals who live in climate change-affected regions are ignorant of how it affects children's ability to develop to their full potential. This is taking place because people are not aware of the severe effects that climate change is having on people's lives. It is important to raise awareness among people specially parents and caregivers of children on the consequences of climate change on the development of children. A variety of media platforms, including print media, social media, radio, television, community theater, etc., may be

utilized to enlighten the public about the issue and how it may affect their life. Media outlets should pay particular attention to the effects on children's life and how they represent a larger risk to individuals and the country as a whole.

- **Conduct more researches**

  There is always a plethora of important data and knowledge on the climate change topic. The majority of them are concerned with how people's resources are affected by climate change and the various negative consequences it has on people's lives. The research on the perspective and comprehension of those who directly interact with children, such as parents, caregivers, teachers, and family members, on climate change is, however, lacking. There is a need of conducting more thorough study because Bangladesh is more vulnerable to the consequences of climate change and more research is needed to examine how people perceive those effects and how they might cooperate to address the problem. In recent years, it has become essential to ensure that children may grow up in a secure environment by increasing public knowledge of the climate change issues and offering safe strategies to address them.

- **Reforming the climate change strategies**

  To enhance the standard of education and provide accessible teaching strategies, environments, and resources, changes in the climate change strategies must be launched.

  Bangladesh's climate change policy is mainly concerned with developing strategies to deal with the effects of climate change. In order to motivate people to engage in climate change action plans, government initiatives should place more emphasis on the effects that climate change has on individuals,

particularly children. Effective strategies should be developed to allocate budget to initiate intervention for the people in the rural areas and from lower socio-economic background to inform them about the climate change issues and its effect in all parts of their lives.

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Appendix: 1: Survey Questionnaire (English)

Consent Form

TITLE OF STUDY

Exploring the Parental Perception about the Consequences of Climate Change on Children in early years.

PURPOSE OF STUDY

As a part of my degree requirements from the Institute of Educational Development-BRAC University, I am doing this explorative study to understand the knowledge of parents on climate change and their perception on consequences of climate change on children in early years.

RISKS

There is no threat to you for contributing in this study and directly or indirectly. Parents of children from 0-8 years will be contributing to the study results which will be primarily used as a degree requirement.

BENEFITS OF THE STUDY

Parents of children in early years (0-8 years) will be benefitted with this study results. This study will be beneficial for the policymakers while developing strategies for supporting the child overall development by addressing the environmental issues. This study will also be beneficial for the health professionals, caregivers & other family members, students, and researchers.

PRIVACY, ANONYMITY AND CONFIDENTIALITY

All information gathered from participants will stay strongly confidential. It would be a great joy for us to answer your queries about the study and you are welcome to contact.

FUTURE USE OF INFORMATION

Some of the information gathered from this work may be saved for future experiments yet in such scenario information and data provided to other researchers, will not conflict with or interrupt the maintenance of privacy, anonymity and confidentiality of information finding participants in any way.

VOLUNTARY PARTICIPATION

Your participation in this study is voluntary. It is up to you to decide whether or not to take part in this study. If you decide to take part in this study, you will be asked to sign a consent form. After you sign the consent form, you are still free to withdraw at any time and without giving a reason. Withdrawing from this study will not affect the relationship you have, if any, with the researcher. If you withdraw from the study before data collection is completed, your data will not be used.

Thank you very much for your cooperation

CONSENT

I have read and I understand the provided information and have had the opportunity to ask questions. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason and without cost. I voluntarily agree to take part in this study.

Participant's signature _____ Date _____

Investigator's signature _____ Date _____

Survey on Parent's Perception on climate change and its consequences of climate change on children of early years

Demographic information:

1. Your name: _____

2. Please mention your gender:
   - ☐ Male
   - ☐ Female
   - ☐ Prefer not to say

3. Your age: _____

4. Your child's age_____

5. Child's gender
   - ☐ Male
   - ☐ Female

6. Your educational background
   - ☐ SSC/O-Level/GCSE
   - ☐ HSC/ A-Level
   - ☐ Vocational
   - ☐ Graduate
   - ☐ Post-graduate
   - ☐ No formal education

7. Your profession: _____

8. Please indicate your approximate income bracket:

☐ BDT 30000- BDT39999
☐ BDT 40000- BDT 49999
☐ BDT 50000- BDT 59999
☐ BDT 60000- BDT 69999
☐ BDT 70000- BDT 79999
☐ BDT 80000- BDT 89999
☐ BDT 90000- BDT 99999
☐ Above BDT 100000

Section: A: Knowledge on climate change

1. Have you ever heard of "Climate Change"?
   Yes
   No
2. Where have you heard about climate change? (*Tick as many as you feel apply):*
   ☐ Television
   ☐ Radio
   ☐ Newspaper
   ☐ Internet
   ☐ Specialist publications/academic journals
   ☐ Environmental groups (e.g., Worldwide Fund for Nature)
   ☐ School/ college/ university
   ☐ Government agencies/ information
   ☐ Public libraries
   ☐ Friends/ family
   ☐ Other (*Please write in*
   _____)

3. Which one of the following you think is caused by climate change?
   ☐ Draught
   ☐ Heavy rainfall
   ☐ River erosion
   ☐ Heat waves
   ☐ Forest fires
   ☐ Sea level rising
   ☐ All of the above
   ☐ None of the above

4. How important is the issue of climate change to you personally?
   ☐ Very Important (go to question 5)

☐ Quite Important (go to question 5)
☐ Not very important (go to question 6)
☐ Not important at all (go to question 6)

5. Why is it important to you?

_____

_____

_____

_____

6. In your opinion, who are the people seriously affected by climate change?
   ☐ Adults
   ☐ Children
   ☐ Elderly people

7. Have you ever been exposed to any climate change situation?
   ☐ Yes (go to question 8)
   ☐ No (go to question 9)

8. Which climate change situation have you been exposed to?
   ☐ Draught
   ☐ Flood
   ☐ Heavy Rainfall
   ☐ Heatwave
   ☐ River erosion
   ☐ Thunderstorms and lightning
   ☐ Other _____

9. Do you think human is responsible for the changes in climate situation?
   ☐ Yes
   ☐ No

10. Peoples' awareness on climate change needs to be raised to prepare them for the effects of climate change and ways to combat this situation?
    ☐ Strongly agree
    ☐ Agree
    ☐ Neutral
    ☐ Disagree
    ☐ Strongly disagree

Section: B: Consequences on child health:

11. Climate change is an environmental issue and it has direct impact on children's health.
    Strongly agree
    Agree
    Neutral
    Disagree
    Strongly disagree

12. Do you think decrease of food production due to draught or floods results in widespread malnutrition in children.
    Yes
    No

13. Changes in the frequency of extreme weather events such as cyclones, floods, storms and heat waves increase the risk of injuries and death among children.
    Strongly agree
    Agree
    Neutral
    Disagree
    Strongly disagree

14. Climate change increases the risk of vector borne disease such as; malaria, dengue etc. Do you think your child is at higher risk of getting infected by dengue or malaria comparing to 5 years ago?
    Yes
    No

15. Climate conditions strongly affect water-borne diseases (such as; diarrhea, cholera, typhoid etc.).
    Yes
    No

16. Why do you think the children are at higher risk of getting infected?

    _____

    _____

    _____

    _____

17. Has your child been affected by diarrhea in recent times more than previous years.
    Yes
    No

18. An increase in the number of heat waves threatens children directly by exposing them to higher temperatures and increase their risk of heatstroke.

Strongly agree
Agree
Neutral
Disagree
Strongly disagree

Section: C: Consequences on children's mental health

19. Displacement of population due to disasters caused by climate change such as; river erosion, cyclone, flood etc. can cause stress and trauma among children.
    Strongly agree
    Agree
    Neutral
    Disagree
    Strongly disagree

20. Children are dependent on adults from their families for stress relief and support in developing a sound mental health. Do you think that when an adult family member is suffering from depression, anxiety due to loss of employment opportunity or economic productivity due to climate change disasters, it affects children's mental health?
    Yes
    No

21. Children living in areas with high climate risk, lives a high-stressed life? (Since they constantly need to be either relocated to shelters or lacks access to sufficient food and clean water etc.).
    Strongly agree
    Agree
    Neutral
    Disagree
    Strongly disagree

22. According to you, a child can suffer from which one of the following psychological distress due to climate change?

    Depression
    Anxiety
    Worry
    PTSD (Post Traumatic Stress Disorder)
    Anger
    Others _____
    None (go to question 24)

23. Why do you think children can suffer from psychological distress from climate change disaster event?

    _____

    _____

_____

_____

_____

24. Have you seen any behavioral changes in your children during extreme heat waves?
    Yes (go to question 25)
    No (go to question 26)

25. What kind of behavioral changes have you noticed in your child during extreme heat waves?

    _____

    _____

    _____

    _____

Section: D: Consequences on children's learning process

26. Do you believe children's learning depends on supportive and social and physical environments?
    Yes
    No

27. Excessive heat due to climate change makes classroom environment difficult to learning.
    Strongly agree
    Agree
    Neutral
    Disagree
    Strongly disagree

28. Does your child misses school days due to heavy rainfall, heat waves or floods?
    Yes
    No

29. According to you, if your child misses school days due to environmental reasons, does it have any negative impact on their learning or education?
    Yes (go to question 30)
    No (go to question 31)

30. Why do you think that the impact is negative?

_____

_____

_____

_____

_____

31. Since schools are used as shelters during natural disasters, do you think this interrupts children's education and learning process?
    Yes
    No

32. Children who suffer from natural disasters caused by climate change has lesser chances to complete their education due to lack of resources and opportunities. Do you agree with this statement?

    Strongly agree
    Agree
    Neutral
    Disagree
    Strongly disagree

33. Children who have lack of opportunity to complete their education has lesser chances to contribute effectively to a country's economy. Do you agree with this statement.

    Strongly agree
    Agree
    Neutral
    Disagree
    Strongly disagree

Section: E: Consequences on children's development

34. Do you think climate disasters (such as extreme heat) causes shortened pregnancy period?
    Yes
    No

35. According to your opinion, shortened gestation (pregnancy) period can causes which of the following long-term risks?
    Lack of immunity
    Lack of cognitive development
    Developing depression
    Autism
    ADHD

Other

_____

36. Increased heat exposures and the stress associated with it increases the risk of delivery for pregnant women; especially shorter pregnancy period.

    Strongly agree
    Agree
    Neutral
    Disagree
    Strongly disagree

37. Pregnant mother in the high climate risk areas is at higher risk of having which of the following:
    Eclampsia
    Child with a low birth weight
    Preterm birth
    Child with low immunity
    Other _____

38. Did you experience a pre-term birth?
    Yes (go to question 39)
    No (go to question 40)

39. Please share if you have noticed any of the following developmental delays in your children due to preterm birth?

    Lack of emotional regulation
    Low cognition level
    Speech delay
    Delay in walking

40. Chronically malnourished children are at a risk of being physically and mentally stunted.

    Strongly agree
    Agree
    Neutral
    Disagree
    Strongly disagree

Appendix: 2: Survey Questionnaire (Bangla)

জলবায়ু পরিবর্তন এবং প্রাথমিক বছরগুলিতে শিশুদের উপর জলবায়ু পরিবর্তনের ফলাফল সম্পর্কে পিতামাতার অনুভব বিশ্লেষণ |

উদ্দেশ্য:
ইনস্টিটিউট অফ এডুকেশনাল ডেভেলপমেন্ট- ব্র্যাক ইউনিভার্সিটি থেকে আমার ডিগ্রির প্রয়োজনীয়তার অংশ হিসেবে, আমি এই অন্বেষণমূলক গবেষণা করছি জলবায়ু পরিবর্তনের বিষয়ে পিতামাতার জ্ঞান এবং তাদের প্রাথমিক বছরগুলিতে জলবায়ু পরিবর্তনের পরিণতি সম্পর্কে তাদের অনুভব বোঝার জন্য।

ঝুঁকি
এই গবেষণায় অবদান রাখার জন্য এবং প্রত্যক্ষ বা পরোক্ষভাবে আপনার জন্য কোন হুমকি নেই। ০- ৮ বছর বয়সী শিশুদের পিতামাতারা অধ্যয়নের ফলাফলগুলিতে অবদান রাখবে যা প্রাথমিকভাবে একটি ডিগ্রি প্রয়োজন হিসাবে ব্যবহৃত হবে।

অধ্যয়নের সুবিধা
প্রাথমিক বছরগুলিতে (০- ৮ বছর) শিশুদের পিতামাতারা এই গবেষণার ফলাফলের সাথে উপকৃত হবেন। পরিবেশগত সমস্যাগুলি মোকাবেলা করে শিশুর সামগ্রিক বিকাশে সহায়তা করার জন্য কৌশলগুলি তৈরি করার সময় এই গবেষণা নীতিনির্ধারকদের জন্য উপকারী হবে। এই গবেষণাটি স্বাস্থ্য পেশাদার এবং পরিবারের অন্যান্য সদস্য, ছাত্র এবং গবেষকদের জন্যও উপকারী হবে।

গোপনীয়তা
অংশগ্রহণকারীদের কাছ থেকে সংগৃহীত সমস্ত তথ্য দৃঢ়ভাবে গোপন থাকবে।

তথ্যের ভবিষ্যৎ ব্যবহার
এই কাজ থেকে সংগৃহীত কিছু তথ্য ভবিষ্যত পরীক্ষা-নিরীক্ষার জন্য সংরক্ষণ করা যেতে পারে তবে এই ধরনের পরিস্থিতিতে অন্যান্য গবেষকদের দেওয়া তথ্য এবং ডেটা, অংশগ্রহণকারীদের তথ্যের গোপনীয়তা, পরিচয় গোপন রাখা এবং গোপনীয়তার রক্ষণাবেক্ষণের সাথে বিরোধ বা বাধা সৃষ্টি করবে না।

স্বেচ্ছায় অংশগ্রহণ
এই গবেষণায় আপনার অংশগ্রহণ স্বেচ্ছাকৃত। এই অধ্যয়নে অংশ নেবেন কি না তা আপনার উপর নির্ভর করে। আপনি যদি এই গবেষণায় অংশ নেওয়ার সিদ্ধান্ত নেন, তাহলে আপনাকে একটি সম্মতি ফর্মে স্বাক্ষর করতে বলা হবে। আপনি সম্মতি ফর্মে স্বাক্ষর করার পরে, আপনি যে কোন সময় এবং কারণ না জানিয়ে আপনার অংশগ্রহণ প্রত্যাহার করতে পারবেন। এই গবেষণা থেকে প্রত্যাহার করা গবেষকের সাথে আপনার সম্পর্ককে প্রভাবিত করবে না। ডেটা সংগ্রহ শেষ হওয়ার আগে আপনি যদি অধ্যয়ন থেকে প্রত্যাহার করেন তবে আপনার ডেটা ব্যবহার করা হবে না।

আপনার সহযোগিতার জন্য আপনাকে অনেক ধন্যবাদ |

_____

সম্মতি

আমি পড়েছি এবং আমি প্রদত্ত তথ্য বুঝতে পেরেছি এবং প্রশ্ন জিজ্ঞাসা করার সুযোগ পেয়েছি। আমি বুঝি যে আমার অংশগ্রহণ স্বেচ্ছাকৃত এবং আমি কোনো কারণ ছাড়াই এবং কোনো খরচ ছাড়াই যে কোনো সময় প্রত্যাহার করতে স্বাধীন। আমি স্বেচ্ছায় এই গবেষণায় অংশ নিতে সম্মত। সম্মত নই

অংশগ্রহণকারীর স্বাক্ষর: _____ তারিখ: _____

গবেষকের স্বাক্ষর: _____ তারিখ: _____

<u>জলবায়ু পরিবর্তনের উপর পিতামাতার উপলব্ধি এবং প্রাথমিক বছরের শিশুদের উপর জলবায়ু পরিবর্তনের ফলাফলের উপর জরিপ</u>

<u>জনসংখ্যার তথ্য:</u>

1. আপনার নাম: _____
2. অনুগ্রহ করে আপনার লিঙ্গ উল্লেখ করুন:
☐ পুরুষ
☐ মহিলা
☐ না বলতে পছন্দ করেন
3. আপনার বয়স: _____
4. আপনার সন্তানের বয়স: _____
5. শিশুর লিঙ্গ
☐ ছেলে
☐ মেয়ে

6. আপনার শিক্ষাগত পটভূমি
☐ এসএসসি/ও-লেভেল/জিসিএসই
☐ এইচএসসি/ এ-লেভেল
☐ বৃত্তিমূলক
☐ গ্রাজুয়েট(ডিপ্লোমা/ ডিগ্রী/ অনার্স)
☐ পোস্ট গ্রাজুয়েট
☐ কোন প্রাতিষ্ঠানিক শিক্ষা নেই

7. আপনার পেশা: _____

8. অনুগ্রহ করে আপনার আনুমানিক মাসিক আয় নির্দেশ করুন:

☐ ৩০০০০ টাকা- ৩৯৯৯৯ টাকা
☐ ৪০০০০ টাকা- ৪৯৯৯৯ টাকা
☐ ৫০০০০ টাকা- ৫৯৯৯৯ টাকা
☐ ৬০০০০ টাকা- ৬৯৯৯৯ টাকা
☐ ৭০০০০ টাকা- ৭৯৯৯৯ টাকা
☐ ৮০০০০ টাকা- ৮৯৯৯৯ টাকা
☐ ৯০০০০ টাকা- ৯৯৯৯৯ টাকা

□ ১০০০০০ টাকার উপরে

<u>সেকশন : ক: জলবায়ু পরিবর্তনের প্রভাবের উপর আপনার মতামত</u>

১. আপনি কি কখনো জলবায়ু পরিবর্তনের কথা শুনেছেন?

হাঁ

না

২. আপনি কোথা থেকে এই জলবায়ু পরিবর্তনের কথা শুনেছেন? (টিক চিহ্ন দিন যতগুলোতে প্রযোজ্য হবে)

- টেলিভিশন
- রেডিও
- খবরের কাগজ
- ইন্টারনেট
- জার্নাল বা পাবলিকেশন্স
- পরিবেশ সংক্রান্ত দল
- স্কুল/কলেজ/বিশ্ববিদ্যালয়
- সরকারী দফতর
- লাইব্রেরী
- পরিবার/বন্ধু বান্ধব
- অন্যান্য

৩. আপনার মতে নিম্নোক্ত কোনটি জলবায়ু পরিবর্তনের ফলে ঘটছে?

- খরা
- বন্যা/অতি বন্যা
- নদী ভাঙ্গন
- তাপদাহ
- বনাঞ্চলে আগুন
- সমুদ্র পৃষ্ঠ উঁচু হওয়া
- উপরের সবগুলো
- উপরের একটিও নয়

৪. আপনার নিকট জলবায়ু পরিবর্তনের বিষয়টি কতটুকু গুরুত্বপূর্ণ?

- খুবই গুরুত্বপূর্ণ
- মোটামোটি গুরুত্বপূর্ণ
- খুব একটা গুরুত্বপূণ নয়
- একেবারেই গুরুত্বপূর্ণ নয়

৫. বিষয়টি কেন আপনার কাছে গুরুত্বপূর্ণ?

৬.আপনার মতে কারা বেশী জলবায়ু পরিবর্তনের শিকার হচ্ছে বলে আপনি মনে করেন?

- প্রাপ্তবয়স্ক
- শিশু
- বৃদ্ধ/বৃদ্ধা

৭. আপনি কি কখনো জলবায়ু পরিবর্তনজনিত পরিস্থিতির শিকার হয়েছেন?
হাঁ (আট নম্বর প্রশ্ন দেখুন)
না (নয় নম্বর প্রশ্ন দেখুন)

৮. আপনি কোন ধরনের জলবায়ু পরিবর্তনজনিত পরিস্থিতির শিকার হয়েছেন?

- খরা
- বন্যা/অতি বন্যা
- নদী ভাঙ্গন
- তাপদাহ
- বনাঞ্চলে আগুন
- সমূদ্র পৃষ্ঠ উঁচু হওয়া
- ঝড়/ বিদ্যুৎ সহ বজ্রপাত
- অন্যান্য _____

৯. আপনি কি মনে করেন জলবায়ু পরিবর্তনজনিত পরিস্থিতির জন্য মানুষ দায়ী?

- হাঁ
- না

১০. জলবায়ু পরিবর্তনজনিত পরিস্থিতির সাথে মোকাবেলা করার প্রস্তুতির জন্য এবং মোকাবেলা করার জন্য জলবায়ু পরিবর্তন এর উপর জনগনকে সচেতন করতে হবে।

- দৃঢ়ভাবে একমত পোষন করি
- একমত
- একমত বা দ্বিমত কোনটিই নয়
- দ্বিমত পোষন করি
- দৃঢ়ভাবে দ্বিমত পোষন করি

সেকশন বি: শিশু স্বাস্থ্যের উপর জলবায়ু পরিবর্তনজনিত প্রভাবের উপর আপনার মতামত

১১. জলবায়ু পরিবর্তন একটি পরিবেশগত বিষয় এবং শিশু স্বাস্থ্যের উপর জলবায়ু পরিবর্তন এর সরাসরি প্রভাব রয়েছে।

- দৃঢ়ভাবে একমত পোষন করি
- একমত
- একমত বা দ্বিমত কোনটিই নয়
- দ্বিমত পোষন করি
- দৃঢ়ভাবে দ্বিমত পোষন করি

১২. আপনি কি মনে করেন যে বন্যা ও খরার কারনে খাদ্য উৎপাদন হ্রাস পাচ্ছে এবং তার ফলে শিশুরা ব্যাপক হারে পুষ্টিহীনতার শিকার হচ্ছে?

হাঁ
না

১৩. ঝড়,বন্যা, ঘূর্নিঝড়,তাপ প্রবাহ ইত্যাদি ঘন ঘন মাত্রাতিরিক্তি বাড়ার কারনে শিশুদের আঘাত ও মৃত্যুহার বৃদ্ধি পাচ্ছে।

- দৃঢ়ভাবে একমত পোষন করি
- একমত
- একমত বা দ্বিমত কোনটিই নয়
- দ্বিমত পোষন করি
- দৃঢ়ভাবে দ্বিমত পোষন করি

১৪. জলবায়ু পরিবর্তন এর ফলে বিভিন্ন ধরণের সংক্রামক রোগের সংখ্যা বাড়ছে যেমন ডেঙ্গু ,ম্যালেরিয়া ইত্যাদি। আপনি কি মনে করেন আপনার সন্তান পাঁচ বৎসর আগের তুলনায় অনেক বেশী এসব রোগে আক্রান্ত হওয়ার ঝুঁকিতে রয়েছে?

হাঁ
না

১৫. জলবায়ু পরিবর্তনের এই প্রভাব মারাত্মক ভাবে পানি বাহিত রোগের উপর পড়ছে যেমন ডায়রিয়া,কলেরা,টাইফয়েড?

- হাঁ
- না

১৬. আপনি কেন মনে করেন যে আপনার শিশু রোগে আক্রান্ত হওয়ার উচ্চ মাত্রার ঝুঁকিতে রয়েছে?

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১৭. বিগত বৎসরগুলোর তুলনায় আপনার শিশু কি অনেক বেশী ডায়রিয়ায় আক্রান্ত হয়েছে?

- হ্যাঁ
- না

১৮. তীব্র তাপদাহের কারনে শিশুরা বাইরে বের হলে তীব্র তাপমাত্রার কারনে হিটস্ট্রোক এর ঝুঁকিতে রয়েছে।

- দৃঢ়ভাবে একমত পোষন করি
- একমত
- একমত বা দ্বিমত কোনটিই নয়
- দ্বিমত পোষন করি
- দৃঢ়ভাবে দ্বিমত পোষন করি

সেকশন সি : জলবায়ু পরিবর্তনের ফলে শিশুদের মানসিক স্বাস্থ্যের পরিনতি/অবস্থা

১৯.জলবায়ু পরিবর্তনের ফলে বন্যা, নদী ভাঙ্গন, ঘূর্নিঝড়,খরা ইত্যাদির কারনে মানুষ নিজেদের বসতবাটি ছেড়ে অন্য জায়গায় আশ্রয় নিতে বাধ্য হচ্ছে এবং এর ফলে শিশুরা মানসিকভাবে চাপে পড়ছে এবং ট্রমার শিকার হচ্ছে।

- দৃঢ়ভাবে একমত পোষন করি
- একমত
- একমত বা দ্বিমত কোনটিই নয়
- দ্বিমত পোষন করি
- দৃঢ়ভাবে দ্বিমত পোষন করি

২০.শিশুরা তাদের মানসিক বিকাশ,গঠন এবং চাপমুক্ত থাকার জন্য বড়দের উপর নির্ভরশীল আপনি কি মনে করেন যে জলবায়ু পরিবর্তনের ফলে পরিবারে বড়রা যখন চাকুরি হারিয়ে এবং ফসল হারিয়ে মানসিক ভাবে বির্পযস্ত থাকে তার প্রভাব শিশুদের মানসিক স্বাস্থ্যেও উপর পড়ে?

- হ্যাঁ
- না

২১. জলবায়ু পরিবর্তনের ঝুঁকিতে আছে এমন এলাকার পরিবারের শিশুরা উচ্চ মানসিক চাপের মধ্যে থাকে।(যেহেতু তাদের সবসময়ই বাসস্থান পাল্টাতে হয় অথবা খাদ্য ,সুপেয় পানির সংকটে পড়ে)

- দৃঢ়ভাবে একমত পোষন করি
- একমত
- একমত বা দ্বিমত কোনটিই নয়
- দ্বিমত পোষন করি
- দৃঢ়ভাবে দ্বিমত পোষন করি

২২. আপনার মতে শিশুরা জলবায়ু পরিবর্তনের কারনে নিন্মোক্ত কোন ধরণের মানসিক অবস্থার শিকার হতে পারে

- দুশ্চিন্তা
- বিষন্নতা
- হতাশা
- পোস্ট ট্রমাটিক ডিসঅর্ডার
- রাগ
- অন্যান্য

২৩. আপনি কেন মনে করেন যে শিশুরা জলবায়ু পরিবর্তনের কারনে যে সকল দুর্যোগ হয় তাতে মানসিকভাবে ভেঙ্গে পড়তে পারে?

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২৪. আপনি কি আপনার শিশুর আচরনের মধ্যে কোন পরিবর্তন দেখতে পান?

হ্যাঁ (২৫ নম্বর প্রশ্ন দেখুন)

না (২৬ নম্বর প্রশ্ন দেখুন)

২৫. তীব্র তাপ প্রবাহের সময় আপনি আপনার শিশুর আচরনে কোন পরিবর্তন দেখতে পান?

সেকশন ডি: জলবায়ূ পরিবর্তনের ফলে শিশুদের শিখন প্রক্রিয়ার অবস্থা

২৬. আপনি কি বিশ্বাস করেন যে শিশুদের শিক্ষা একটি সহায়ক শারিরীক ,মানসিক ও সমাজিক পরিবেশের উপর নির্ভর করে?

- হ্যাঁ
- না

২৭. জলবায়ূ পরিবর্তনের ফলে অতিরিক্ত গরমের কারনে শ্রেণীকক্ষে শিশুদের ক্লাস করতে খুব কষ্ট হয়।

- দৃঢ়ভাবে একমত পোষন করি
- একমত
- একমত বা দ্বিমত কোনটিই নয়
- দ্বিমত পোষন করি
- দৃঢ়ভাবে দ্বিমত পোষন করি

২৮. আপনার সন্তান কি স্কুলে যেতে পারেনা অতিবৃষ্টি ,বন্যা এবং তীব্র তাপদাহের কারনে।

- হ্যাঁ
- না

২৯. আপনার মতে আপনার সন্তান যদি অতিবৃষ্টি ,বন্যা এবং তীব্র তাপদাহের কারনে স্কুলে যেতে না পারে তাহলে কি তার শিখন প্রক্রিয়ায় কি কোন নেতিবাচক প্রভাব পড়ে?

হ্যাঁ (৩০ নম্বর প্রশ্ন দেখুন)

না (৩১ নম্বর প্রশ্ন দেখুন)

৩০. আপনার কাছে কেন মনে হয় প্রভাবটা নেতিবাচক?

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৩১. যেহেতু স্কুলগুলোকে প্রাকৃতিক দূর্যোগের সময় আশ্রয়কেন্দ্র হিসাবে ব্যবহার করা হয় আপনার কি মনে হয় তাতে কি শিশুদের শিক্ষা ক্ষেত্রে এবং শিখন প্রক্রিয়া বাধাগ্রস্ত হয়?
হ্যাঁ
না
৩২. জলবায়ূ পরিবর্তনের ফলে দুর্যোগে দূর্ভোগের শিকার যেকল শিশুরা তারা খুব কমসংখ্যকই সুযোগ ও সম্পদের অভাবে পড়াশুনা শেষ করতে পারে আপনি কি এই বর্ণনাটির সাথে একমত পোষন করেন?

- দৃঢ়ভাবে একমত পোষন করি
- একমত
- একমত বা দ্বিমত কোনটিই নয়
- দ্বিমত পোষন করি
- দৃঢ়ভাবে দ্বিমত পোষন করি

৩৩. জলবায়ূ পরিবর্তনের ফলে দুর্যোগে দূর্ভোগের শিকার যেসকল শিশুরা পড়াশুনা শেষ করার সুযোগ পায়না তারা কার্যকরীভাবে দেশের অর্থনীতিতে অবদান রাখতে পারেনা। আপনি কি এই বর্ণনাটির সাথে একমত পোষন করেন?

- দৃঢ়ভাবে একমত পোষন করি
- একমত
- একমত বা দ্বিমত কোনটিই নয়
- দ্বিমত পোষন করি
- দৃঢ়ভাবে দ্বিমত পোষন করি

সেকশন ই: জলবায়ূ পরিবর্তনের ফলে শিশুদের উন্নয়নে প্রভাব

৩৪. আপনি কি মনে করেন যে জলবায়ূ পরিবর্তনের ফলে দুর্যোগের কারনে মায়ের গর্ভকালীন সময় কমে যাচ্ছে?
হ্যাঁ
না
৩৫. আপনার মতে মায়ের গর্ভকালীন সময় কমে গেলে নিম্নোক্ত কোন ধরণের সমস্যা হতে পারে বা গর্ভবতী মায়েদের প্রসব ঝুঁকি বাড়িয়ে দিতে পারে?
রোগপ্রতিরোধক ক্ষমতার অভাব

জ্ঞানীয় বিকাশের অভাব

বিষন্নতা

অটিজম

ADHD
অন্যন্য
৩৬. অতিরিক্ত গরম এবং গর্ভকালীন জটিলতার চাপ প্রসবের ঝুঁকি বিশেষভাবে বাড়িয়ে তুলে বিশেষ করে স্বল্প গর্ভকালীন সময়:

- দৃঢ়ভাবে একমত পোষন করি
- একমত

- একমত বা দ্বিমত কোনটিই নয়
- দ্বিমত পোষন করি
- দৃঢ়ভাবে দ্বিমত পোষন করি

৩৭. জলবায়ূ পরিবর্তনের ঝুঁকিপূর্ণ এলাকার গর্ভবতী মায়েরা নিম্নোক্ত কোন ধরণের ঝুঁকিতে রয়েছেন?

- একাল্াম্পশিয়া
- কম ওজনের শিশু
- সময়ের আগে শিশুর জন্ম
- কম রোগপ্রতিরোধ ক্ষমতা নিয়ে জন্মানো শিশু
- অন্যান্য

৩৮. আপনার কি পূর্ণ গর্ভকালীণ সময়ের আগে শিশু প্রসবের অভিজ্ঞতা রয়েছে?

হ্যাঁ (৩৯ নম্বর প্রশ্ন দেখুন)
না (৪০ নম্বর প্রশ্ন দেখুন)

৩৯. পূর্ণ গর্ভকালীণ সময়ের আগে যেসব শিশুর জন্ম হয়েছে তারা নিম্নোক্ত কোন ধরণের ঝুঁকিতে

রয়েছে যা আপনার দৃষ্টিগোচর হয়েছে?

- মানসিক নিয়ন্ত্রেনর অভাব

- স্বল্প বুদ্ধির অধিকারী

- দেরীতে কথা বলা

- দেরীতে হাঁটা

৪০. ক্রমাগত অপুষ্টির শিকার শিশুরা শারিরীক ও মানসিকভাবে অপরিপক্কতার/stunted ঝুঁকিতে রয়েছে।

- দৃঢ়ভাবে একমত পোষন করি
- একমত
- একমত বা দ্বিমত কোনটিই নয়
- দ্বিমত পোষন করি
- দৃঢ়ভাবে দ্বিমত পোষন করি

Appendix: 3

Consent Form

TITLE OF STUDY

Exploring the Parental Perception about the Consequences of Climate Change on Children in early years.

PURPOSE OF STUDY

As a part of my degree requirements from the Institute of Educational Development-BRAC University, I am doing this explorative study to understand the knowledge of parents on climate change and their perception on consequences of climate change on children in early years.

RISKS

There is no threat to you for contributing in this study and directly or indirectly. Parents of children from 0-8 years will be contributing to the study results which will be primarily used as a degree requirement.

BENEFITS OF THE STUDY

Parents of children in early years (0-8 years) will be benefitted with this study results. This study will be beneficial for the policymakers while developing strategies for supporting the child overall development by addressing the environmental issues. This study will also be beneficial for the health professionals, caregivers & other family members, students, and researchers.

PRIVACY, ANONYMITY AND CONFIDENTIALITY

All information gathered from participants will stay strongly confidential. It would be a great joy for us to answer your queries about the study and you are welcome to contact.

FUTURE USE OF INFORMATION

Some of the information gathered from this work may be saved for future experiments yet in such scenario information and data provided to other researchers, will not conflict with or interrupt the maintenance of privacy, anonymity and confidentiality of information finding participants in any way.

VOLUNTARY PARTICIPATION

Your participation in this study is voluntary. It is up to you to decide whether or not to take part in this study. If you decide to take part in this study, you will be asked to sign a consent form. After you sign the consent form, you are still free to withdraw at any time and without giving a reason. Withdrawing from this study will not affect the relationship you have, if any, with the researcher. If you withdraw from the study before data collection is completed, your data will not be used.

Thank you very much for your cooperation

CONSENT

I have read and I understand the provided information and have had the opportunity to ask questions. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason and without cost. I voluntarily agree to take part in this study.

Participant's signature _____ Date _____

Investigator's signature _____ Date _____