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EFFECT EXTREME WEATHER CONDITIONS ON CHILDREN BETWEEN 6 MONTHS TO 7 YEARS OF AGE IN SOUTH-SOUTH

1* Gbaranor K. B.
2 Umar A. A.
3 Barinua-Gbaranor N. P.,
4 Biralo P. K.
4 Nnadi N. O.
5Abdussalam F.,
6Akpan M. U.
7Biibaloo L. L.
8 Ogbonda N. P.
9 Mgbere M.
10 Nwogu H. C.
1 Odimabo M.
1 Department of Human Physiology, College of Medical Sciences, Rivers State University, Rivers State, South-South, Nigeria
2 Aminu Kano Teaching Hospital, Kano, Kano State, Nigeria
3 Department of Office and Information Management, Faculty of Administration and Management, Rivers State University, Rivers State, South-South, Nigeria
4 Department of Family Medicine, College of Medical Sciences, Rivers State University, Rivers State, South-South, Nigeria
5 KANO State Primary Health care Board, Kano, Kano State, Nigeria
6 Department of Paediatrics, University of Uyo Teaching Hospital, Uyo, Akwa Ibom State, South-South, Nigeria
7 Department of Surgery (ENT), College of Medical Sciences, Rivers State University, Rivers State, South-South, Nigeria
8Department of Public Health Sciences, College of Medical Sciences, Rivers State University, Rivers State, South-South, Nigeria
9 Department of Nursing Science, College of Medical Sciences, Rivers State University, Rivers State, South-South, Nigeria
10 Department of Anesthesia, College of Medical Sciences, Rivers State University, Rivers State, South-South, Nigeria

*Corresponding authors: Gbaranor K. B., Department of Human Physiology, College of Medical Science, Rivers State University, Rives State, South-South, Nigeria
Email: barinua.gbranor@ust.edu.ng

Abstract:
Extreme weather is a risk factor for the onset or outbreak of several diseases in our environment and whenever the disease surfaces, it may affect children. Extreme weather (hot weather) affects the skin texture of children. Body rashes is a current health issue

that affect children and adult mostly during dry season with high temperature. The aim of this study is to evaluate the Effect of Extreme Weather on Children between 6 Months to 7 years of age in South-South. This was a cross-sectional study involving 250 children (6months to 7 years). A well-structured questionnaire was administered to the children's mothers. Each participant had one questionnaire to fill appropriately and independently after instructions were given to them by the Research Assistants. The study lasted for a period of 6 months (November, 2023 to April, 2024). Exclusion criteria were children less than 6months and greater than 7 years. Inclusion criteria are children facing extreme weather. Data was analyzed with SPSS version 26 and P value < 0.05 was considered significant. The research findings revealed that 156(62.40%) of the children were between 6months-1 year of age, 60(24.00%) 2-3 years, 20(8.00%) 4-5 years, while 14(5.60%) were between 6-7 years of age. The results also shows that 150(60.00%) were females, 100(40.00%) were males, 200(80.00%) of the informants agreed that weather was extreme, 220(88.00%) of the children have body rash, 150(60.00%) sweat profusely, 150(60.00%) was dehydrated, 150(60.00%) had running nose, 200(80.00%) have skin pigmentation, 190(76.00%) were restless and 150(60.00%) bleeding nose

Keywords: Effect, Extreme, Weather, Conditions, Children, Age.

Introduction

Climate change is a change attributed directly or indirectly to human activity that alters the composition of the global atmosphere, in addition to natural climate variability observed over comparable periods (Proulx, et al., 2024). Climate change is mainly caused by greenhouse gas emissions from natural systems and human activities. This can result in more frequent and intensified extreme climate-related natural disasters, such as storms, floods, extreme heat and wildfires, and more gradual climatic and environmental changes, such as rising temperatures and drought (Proulx, et al., 2024). Climate change also relates to long-lasting changes to landscapes and physical environments caused by rising sea levels and altered ecosystems (Proulx, et al., 2024).

Human-induced activities have increased carbon emissions over the last century, accelerating climate change and raising the average global temperature to an alarming level. In 2022, the world encountered 387 climate-related disasters, including storms, floods, wildfires and droughts, which resulted in the loss of 30704 lives and affected 185 million individuals (Centre for Research on the Epidemiology of Disasters, 2022).

The world's changing climate affects the fundamental rights of children to survive, thrive and reach their full potential. Exposure to climate change-related events during childhood can have long-lasting effects throughout the lifetime (Maclean, et al., 2016).

Extreme weather events (EWEs), such as extreme heat, drought, flooding, wildfires, and storms, will continue to increase in frequency and severity as the planet becomes warmer (Pachauri, et al, 2014).

High heat makes everyone more irritable. High temperatures and Extreme heat have led to heat exhaustion, dehydration, heatstroke, and increased vulnerability to respiratory

illnesses. Most c hildren experience increased thirst, weakness, headache, dizziness or fainting, muscle cramps, nausea and/ or vomiting, irritability, prickly heat & heavy sweating. For children, excessive heat might be more harmful than it is for adults. Dehydration in children is more than just being thirsty (Kishanrao, 2024).

Hot days affect both directly and indirectly by increasing the risk to asthmatic children. Direct effect: Hot days contribute directly to asthma attacks through Dehydration, & associated lactic acidosis and electrolyte imbalance, resulting in more severe asthma (Kishanrao, 2024).

Hot weather increases the levels of air pollutants, including ozone, fine particulate matter, and sulfur dioxide. These pollutants trigger asthma attacks and increase the need for medical care. Heat fuels the creation of ground level ozone, or smog, formation (Clinical Guidance for Heat and Children with Asthma).

Hot weather creates conditions that can harm children's health, especially because children have unique sensitivities to heat exposure. Children's developing minds and bodies may be more sensitive to higher temperatures than adults. Contrary to common belief Heat can worsen asthma symptoms, hot days can worsen air quality, and breathing air with AQI >100 with unhealthy ozone levels for as short as 1 day can trigger asthma attacks (Clinical Guidance for Heat and Children with Asthma).

Materials and Method

This was a cross-sectional study involving 250 children who were within the age of 6months to 7 years. A well-structured questionnaire was administered to participants. Each participant had one questionnaire to fill appropriately and independently after instructions were given to them by the Research Assistants. The study lasted for a period of 6 months (November, 2023 to April, 2024). Exclusion criteria were children less than 6months and greater than 7 years.

Inclusion criteria are children facing extreme weather.

Data was analyzed with SPSS version 26 and P value < 0.05 was considered significant.

Informant: Mothers or guidance

Results

The results of age distribution of participants shows that 156(62.40%) were within 6months-1 year, 60(24.00%0 2-3 years, 20(8.00%) 4-5 years, while 14(5.60%) were within 6-7 years (Table 1).

The results of sex distribution of participants revealed that 150(60.00%) were females while 100(40.00%) were males (Table 2), 200(80.00%) of the participants attested that there were extreme weather conditions (Table 3), 200(80.00%) parents attested that they clothed their children with light cloth, 150(60.00%) exposed their children during the extreme weather period, 100(40.00%) lives in a well cross-ventilated apartment, 30(12.00%) used generator, 70(28.00%) used PHCD while 150(60.00%) used none, 70(28.00%) used air conditioner, while 180(72.00%) did not use, 220(88.00%) have

body rash as a result of extreme weather (Table 4), 150(60.00%) sweat profusely, 150(60.00%) of the children were dehydrated (Table 5), 150(60.00%) have running nose, 200(80.00%) have skin pigmentation (Table 6), 190(76.00%) were restless, 150(60.00%) have bleeding nose (Table 7), 160(64.00%) were weak. The results also shows several conditions experienced by he children through extreme weather conditions and these are 80(32.00%) fever, 30(12.00%) stiff neck, 75(30.00%) bulging fontanelles, 35(14.00%) irritability, and 25(10.00%) poor feeding (Table 8).

Table 1: Age Distribution of Participants

Age Group		**Percentage**
6months- 1year	156	62.4
2-3 years	60	24.00
4-5 years	20	8.00
6-7 years	14	5.60
Total	**250**	**100.0**

Table 2: Sex Distribution of Participants

Gender	**Frequency**	**Percentage (%)**
Female	150	60.00
Male	100	40.00
Total	**250**	**100.0**

Table 3: Extreme weather conditions

Response	**Frequency**	**Percentage (%)**
Yes	200	80.00
No	50	20.00
Total	**250**	**100.0**

Table 4: Children who have body rash due to extreme weather conditions

Response	**Frequency**	**Percentage (%)**
Body rash	220	88.00
No body rash	30	12.00
Total	**250**	**100.0**

Table 5: Dehydrated children

Response	Frequency	Percentage (%)
Yes	150	60.00
No	100	40.00
Total	**350**	**100.0**

Table 6: Children with skin pigmentation

Response	Frequency	Percentage (%)
Yes	200	80
No	50	20
Total	**250**	**100.0**

Table 7: Child bleeding nose during extreme weather conditions

Response	Frequency	Percentage (%)
Yes	150	60.00
No	100	40.00
Total	**250**	**100.0**

Table 8: Conditions experienced due to extreme weather conditions

Experience	Frequency	Percentage (%)
Fever	80	32.00
Stiff neck	30	12.00
Bulging fontanelles	75	30.00
Irritability	35	14.00
Poor feeding	25	10
Light sensitivity	5	2
Total	**250**	**100.0**

Discussion

Change in weather is a natural process that occur on the earth, and it happens every year. However, when this weather goes beyond its normal status, it becomes extreme or adverse and may cause havoc to both human and non-human. Apart from natural occurrences, extreme weather conditions may be caused by human activities. Extreme weather conditions are caused by greenhouse gas emissions that are emanated from either natural systems or human activities. This extreme weather conditions have led mothers to pass through psychosocial and economic situation.

The study revealed that majority of the children who experiences extreme weather conditions were within the 6 months to 1 year of age and female children were mostly affected during the extreme weather conditions. The informants (mothers or guidance of the children) attested to the fact that the weather conditions were extreme and it affects majority of the children. Due to this extreme weather conditions, most children were clothed with air penetrated cloth (light cloth) just to receive fresh air. Majority (60%) of the mothers exposed their wards to avoid unforeseen extreme weather conditions However, (40.00%) of the informants and their children lives in a well cross-ventilated apartment and 60% lives in apartment that has no cross ventilation and this situation may aggravate the extreme weather conditions children faced during change in weather, especially during dry season. It could be that these parents that do not lives in an apartment that is cross ventilated, may not be their choice but could be that they are not hardy. The study also revealed that 12.00% of the mothers and their children used generator, 28.00% used PHCD (formerly NEPA) and 60.00% have no generator or access to NEPA. This could be that the parents of those children can not afford generating set that will power light and as such may not even have standing fan or ceiling fan that will help in circulating air. Also, few parents were able to get air conditioning (AC) to cushion the effects of extreme weather conditions. Many children were living in their apartments without air conditioning (AC) probably due to lack of fund.

The study also revealed that majority (88.00%) of the children have body rash (heat rash) as a result of extreme dry weather. The body rash is rampant among these children and developed into different sizes. Of course, this may be possible because many of the children and their parents lives in apartments that is not well cross ventilated, no light to power fan and air conditioning and as such, majority of the children sweat profusely. Again, the research revealed that several of the children were dehydrated due to extreme dry weather and this a serious medical issue. The weather was tough and harsh on the children and as such several disease conditions that may emanated from extreme dry weather were meted on the children. The research revealed that the effects from extreme dry weather conditions on the children include running nose (60.00%), skin pigmentation (80.00%), restlessness (76.00%), bleeding nose 60.00%), and weakness (64.00%). Other conditions that the children faced during extreme dry weather conditions are fever (32.00%), stiff neck (12.00%), bulging fontanelles (30.00%), irritability, (14.00%), and poor feeding (10.00%). The fever could be from mosquito's bite because during dry season, mosquitos is always available to bite and transmit plasmodium that may cause malaria. All these conditions came as results of extreme dry weather on children.

Conclusion

Change in weather is a natural process that occur on the earth, and it happens every year. However, when this weather goes beyond its normal status, it becomes extreme or adverse and may cause havoc to both human and non-human. The study revealed

different effects especially body rash that occur on the children due to extreme dry weather condition.

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