



ABSTRACT

Floods have proven devastating in Nigeria in the last few decades, destroying buildings, infrastructure, farmlands, and fatalities. While such impacts are easily quantified monetarily, the affected people are exposed to different psychosocial impacts which can last a lifetime, depending on their level of exposure to the disaster, their resilience level, and the availability of recovery facilities. This paper aims at assessing the management of psychosocial impacts of flood disasters in Nigeria. The objectives include identification of the impacts of flood disaster in human settlements, evaluation of the psychosocial impacts

MANAGING PSYCHOSOCIAL IMPACTS OF FLOOD DISASTER IN NIGERIA

***EDIDIONG USIP; **TIMOTHY EDEM; &
***NSEMO UKPONG**

Department of Urban & Regional Planning, Akwa Ibom State Polytechnic. **Department of Architecture, Akwa Ibom State Polytechnic. *Department of Building Technology, Akwa Ibom State Polytechnic*

Introduction

Flood is one of the most frequent type of disaster globally, and its impact is greatly influenced by the preparedness and resilience of the people affected. Flood leads to tremendous losses of property, infrastructure, businesses, increased risk of diseases and lives. Over 2.8 billion people worldwide have been affected directly and indirectly by flood, causing over 200,000 deaths over the past three decades (World Health Organization (WHO), 2020; Olanrewaju, Chitakira and Low, 2019).

Many governments' reports globally often present the impact of flood in monetary value, fatality and damages; emergency response mostly focuses on financial aids, food, and medical aids to the affected persons in the community. The actual impact of flood is beyond the destruction of buildings, infrastructure, farm lands and fatality. A sublime impact may never be evaluated financially, or redressed easily long after the flood incidence, and this is the psychosocial impact (Usip, 2020).

Disasters, conflicts and other challenges have severe psychosocial consequences. Flood, one of the major natural disasters affects people mentally, emotionally, socially, and even spiritually, and these cannot be measured financially. The loss of a loved one, a heritage site, permanent disability or exposure to scary scenes can affect an individual long after the flood event, irrespective of the material and financial aids given. These psychosocial impacts include grief, stress reactions, anxiety, emotional instability, traumas, and post-traumatic stress disorder.

Many human settlements in Nigeria have been affected severely by flood in recent times, and aids are primarily given inform of



of flood disaster and assessment the management strategies for psychosocial impacts of disaster. A Survey research design was adopted for the work, utilizing questionnaires, interviews and observations as primary data sources, and other secondary sources in communities in Itu L.G.A, Akwa Ibom State. Relative effective Index used for the analysis disclosed that psychosocial impacts - stress, grief, anxiety and post-traumatic stress disorder (PTSD) are experienced during, and after the flood disaster. Related literatures revealed how these impacts are managed globally, thereby forming bases for policy implication for Nigeria.

Keywords: *Flood, Disaster, Psychosocial Impacts, Resilience and Strategies.*

money, food stuff, blankets, clothing and medical intervention programmes. However, very little or no effort is channeled towards cushioning the psychological impacts. This paper therefore, aims at assessing the management of the psychosocial impacts of flood disasters in Nigeria.

Statement of Problem

The consequences of floods in human settlements and other places with anthropogenic presence such as farmlands and mining sites vary greatly depending on the location, duration, depth, speed and extent of flooding, and the vulnerability and value of the natural and constructed environments they affect (Queensland Government, 2018). Individuals and communities are sometimes affected beyond the physical damages experienced as social, economic, and environmental consequences accompany such events. Emotional instability, stress reactions, anxiety, trauma and other psychological symptoms are observed commonly after the disaster and different traumatic experiences. These psychological effects have a massive impact on the affected individuals. Physical and environmental interaction, social association and cultural relationships are sometimes altered, and sometimes strained beyond reconciliation. Response to community settings, family structures, socio-cultural ties, and recreations (such as clubs, peer – association, passive and active recreation) are sometimes withdrawn or disconnected permanently.

While some people recover immediately after the flood incidence due to less impact exposure level, emergency intervention aids and resilience, people with high impact exposure level (such as fatal and tragic experiences), insufficient preparedness, resilience and aids experience more difficulties. In extreme cases, this leads to a number of persistent psychotic symptoms which are often severe in nature. Post-Traumatic Stress Disorder (PTSD) is the most frequently encountered along with anxiety, depression and other behavioural and psychosocial abnormalities. (Makwana, 2019). At this point, responses beyond financial and medical aids is required to walk the affected individual(s) back to recovery, normalcy and sound re-integration to post disaster life. The management of these psychosocial impacts of flood therefore becomes a necessity in our settlements today (Mason, Andrews, and Upton 2017).

Whereas a lot of research have been done on the economic impacts of flood in Nigeria, only few literature exist on the psychosocial impact of flooding in Nigeria, particularly in Akwa Ibom State. This work therefore assesses the management of the psychosocial impact of flood



disaster in Nigeria, using 12 communities in Itu Local Government Area of Akwa Ibom State as case study.

Aim and Objectives

This paper aims at assessing the management of psychosocial impacts of flood disasters in Nigeria. The objectives include identification of the impacts of flood disaster in human settlements, assessment of the psychosocial impacts of flood disaster and assessment of management strategies for psychosocial impacts of disaster.

Impacts of Flood Disaster on Human Settlements

Flooding has become a major hazard in Nigeria in recent years due to a growing population, rapid urbanization and extreme weather events (Oladokuni and Proverbs, 2016). Different fabrics of human settlements are affected and these include health/wellbeing of the people, business operations, housing, access to clean water, food supply, power supply and transportation sector.

These impacts could be physical, medical, social and (or) economic in nature, and every flood disaster affects an individual or group of persons directly or indirectly, Mason et al (2017).

As observed by WHO (2017), direct impacts are those impacts that result from direct physical contact between floodwaters and humans, economic assets, or other objects. Examples of direct impacts are the destruction of houses, crops, or livestock by floodwaters, the loss of life caused by drowning or injuries and deterioration of health conditions owing to waterborne diseases. In contrast, indirect damages are induced by direct impacts. They may occur in space or time beyond the immediate limits or outside of the flood event, such as a loss in productivity resulting from a disruption in supply chains or interruptions to flows and linkages.

These impacts are further classified into tangible and intangible impacts. Tangible impacts are effects that can be expressed in monetary terms, with existing market value. These can be referred to as goods, and they include infrastructure element, buildings, agro- products, etc. On the contrary, intangible impacts are non saleable goods that cannot be easily quantified monetarily. Their actual true market value spans beyond monetary expressions, including medical, psychological, cultural, and social impacts. Examples include long term health effects, temporal and permanent disability, destruction of cultural heritage, and loss of a loved one.

Different fabrics of human settlements are affected by flood events. Waterborne diseases such as typhoid fever and cholera and vector-borne diseases such as malaria are rampant in the affected areas as clean water source is mainly contaminated, and contact with the polluted flood water is unavoidable. Infrastructures are always affected, and business operations and sources of livelihood are crippled during flood. Many buildings are affected during a flood, often leading to the displacement of people. According to The Punch (2013), 2504 households were affected in Itu, Oruk Anam and Uyo local government area in 2013 alone, leading to the camping of the displaced persons in churches and schools. Some homes are often washed off and destroyed, while the flood entirely denies accesses to others. (Adomi and Ephriam, 2015; Restoration SOS, 2014; Kennedy, Pottinger and Plimmer, 2006).

Psychosocial Impacts of Flood

The effects of flooding and disasters on people's health, relationships and welfare can be extensive and significant. Flooding can profoundly affect people's welfare, employment, mobility, wellbeing, psychosocial resilience, relationships and mental health. It can pose huge



social and welfare problems that may continue over extended periods because of not only being flooded (the primary stressor), but also because of the continuing secondary stressors that arise as people try to recover their lives, property and relationships (Health Protection Agency, 2011).

Emotional instability, stress reactions, anxiety, depression, somatization, post traumatic stress disorder (PTSD) and other psychological symptoms are observed commonly after flood disaster and different traumatic experiences. These psychological effects have a massive impact on the concerned individual and also on communities. (Usip, 2020).

Psychosocial impacts are categorized into immediate experience and post event experience. The immediate experience reflect the most horrifying dimensions of disaster related to severe physical injury, exposure to extreme danger, witnessing death of close ones or mass dead and injuries, traumatic experience of helplessness, hopelessness, separations, and the need to choose between helping others or fighting for one's own survival.

The Post Event Experience reflects post-disaster reactions which include intense feeling of anxiety, which may be accompanied by flashbacks or intrusions and frightening memories of the experience.

These symptoms are expected to settle over the first weeks. Where these reactions are maintained at a high level, and for over few weeks, they present a post-traumatic stress disorder (PTSD). Spontaneous recovery occurs in the majority of cases as observed in WHO documents, but in a small proportion, the conditions can last many years, and in very some cases a life time.

The major types of psychosocial impacts of flood include Post-Traumatic Stress Disorder, grief and anxiety, substance abuse, and secondary psychosocial stressors.

Factors that influence psychosocial impacts of disaster

Vulnerability: The psychological effects of the disaster are more drastic among children, women and dependent elderly population. After any sudden disaster or chronic disaster, they become the most vulnerable population. Thus, they have special needs, which needs to be taken care (Makwana, 2019).

Resilience Level: The ability to adapt to and recover quickly from casualty or disasters is influenced by so many factors including individual's level of preparedness and awareness of the potential disaster, flow of knowledge and information, skills, experience, technology, economic status, and infrastructure.

Intervention Programmes: The availability of both community – based, and conventional disaster intervention programmes to the affected individuals and communities greatly influenced the extent of flood impacts in Nigeria.

Disaster Exposure Level: The psychosocial impacts level of flood is mostly influenced by the level of exposure of an individual to the disaster. This is seen in terms of losses such as damage and loss of property, injuries, permanent disability, and ultimately loss of life of a loved one.

The Study Area

This study was conducted in twelve (12) communities in Itu Local Government area of Akwa Ibom State, Nigeria. The Local Government Area occupies a landmass of approximately 606.10 square kilometers. It is bounded in the North and North-East by Odukpani in Cross River State and Arochukwu in Abia State, in the West by Ibiono Ibom and Ikono Local Government



Areas, in the South and South-East by Uyo and Uruan Local Government Areas, respectively. Fig. 1 shows the location of Itu L. G. A in relation to other Local Government Areas in the state.

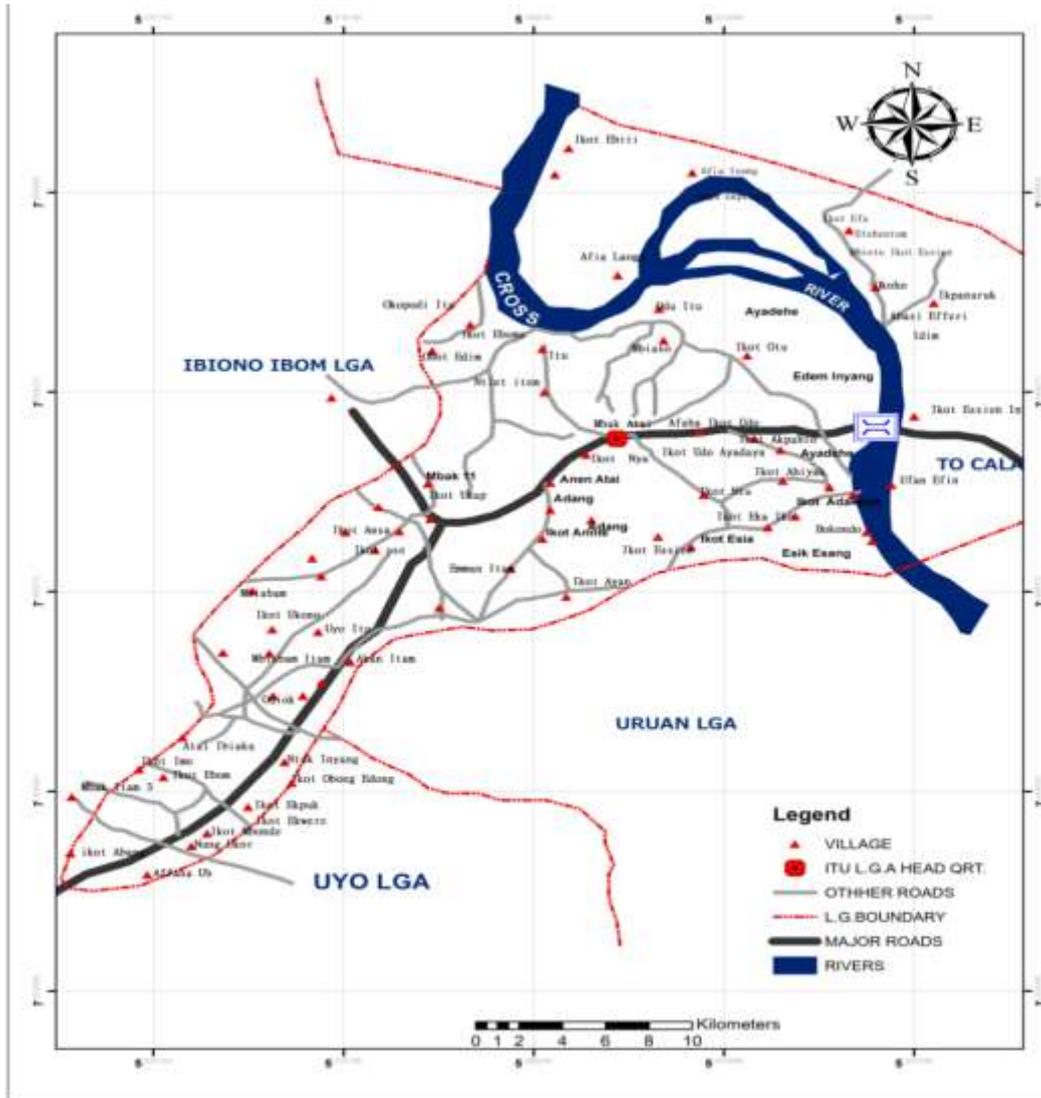


Fig. 1 Map of Itu Local Government Area
Source: Ministry of Lands, Surveys and Town Planning

The Case Study Community: The 12 communities selected for the study are Odu Itu, Okoho, Edem Inyang, Akpaekpeneton, Afia Isong, Ikot Otu, Etehentem, Mkpan Uruk, Mben Inyang, Mbiabo, Ikot Adakpan, and Ayadehe. All the communities are located in the North-Eastern Part of Itu by the Cross River.

Methodology

The Research design adopted for the study was the survey research design. This includes observations and interactions using various media with the affected people in the settlements investigated. The data needed for this study covers identifying the impacts of flood disaster in



human settlements, assessing psychosocial consequences of the food disaster, and finally assessing management strategies for psychosocial impacts.

The data were collected using both the primary source and the secondary data source. A Purposive sampling technique was adopted for the study. The Sample frame was determined by the official documents of the Akwa Ibom state government which outlined areas with persistent flood challenges. The settlements in table 1 formed the sample frame. Four hundred questionnaires were administered across the communities investigated, based on their population as presented in table 1 using a random sampling technique.

Table 1: Populations and Sampling Distribution

S/N	Settlements	Population	Sample Size	Percentage %	Rate of Return
1	Odu Itu	868	22	5.5	20
2	Okoho	798	20	5	19
3	Edem Inyang	1022	26	7.5	25
4	Akpaekpeneton	980	25	6.3	24
5	Afia Isong	1176	30	7.5	28
6	Ikot Otu	1099	28	7	27
7	Etehentem	854	22	5.5	21
8	Mkpan Uruk	728	19	4.7	18
9	Mben Inyang	672	17	5	15
10	Mbiabo	1358	36	9	35
11	Ikot Adakpan	1722	45	12	44
12	Ayadehe	3906	100	25	98
	Total	15,183	390	100	374

Source: Author (2021)

The data generated from the field work were presented using tables and chats, and analyzed using Relative Effective Index. The result of the study can be applied in other regions in assessing the impacts of floods and their psychosocial consequences.

Data Presentation and Analytical Discussion

Identification of the Impacts of Flood Disaster in Human Settlements

The impacts of flood in human settlements are deduced from investigations carried out in 12 communities in Itu L.G.A. Levels of damages experienced in the communities were categorized into very severe, severe, less severe. This revealed the impacts flood had on the communities. The table below presents the summary of impacts using The Relative Effective Index in each of the communities based on the seven sectors of the communities. These sectors are Business operations, Access to Clean Water, Power Supply, Food Supply, Transportation, Health and Housing.

Table 2: Impacts of Flood in Human Settlements

S/No.	Community	Business Operation	Drinkin Water	Power Supply	Food Supply	Transpoi ation	Healtf	Housin	Total Rank
1.	Odu Itu	3.96	3.70	3.70	3.65	3.70	3.65	3.70	3.68 5 th
2.	Okoho	3.95	3.84	3.63	3.79	3.74	3.74	3.68	3.77 2 nd



3.	Edem Inyang	3.88	3.80	3.76	3.92	3.72	3.96	3.68	3.82	1 st
4.	Akpaekpene	3.71	3.75	3.67	3.83	3.50	3.67	3.54	3.67	6 th *
5.	Afia Isong	3.79	3.89	3.61	3.82	3.71	3.75	3.68	3.75	3 rd
6.	Ikot Otu	3.85	3.78	3.59	3.81	3.63	3.74	3.70	3.73	4 th
7.	Etehentem	3.67	3.81	3.52	3.71	3.57	3.67	3.62	3.65	9 th
8.	Mkpan Uruk	3.72	3.56	3.33	3.67	3.28	3.83	3.50	3.56	12 th
9.	Mben Inyang	3.87	3.67	3.60	3.67	3.33	3.80	3.47	3.63	10 th
10.	Mbiabo	3.66	3.71	3.57	3.74	3.66	3.69	3.63	3.67	7 th *
11.	Ikot Adakpar	3.66	3.74	3.61	3.70	3.59	3.68	3.64	3.66	8 th
12.	Ayadehe	3.65	3.62	3.58	3.64	3.59	3.66	3.60	3.62	11 th
Total		3.76	3.74	3.60	3.75	3.59	3.74	3.62		
Rank		1 st	3 rd *	6 th	2 nd	7 th	4 th *	5 th		

Source: Authors (2021)

All the index scores for each sector in the 12 communities exceed the Relative Effective Index mean value of 2.5. The impact on Business operation came first with an index score of 3.76. This was followed by impact on food supply with 3.75. Impact on access to clean water, and health came 3rd and 4th with an impact value of 3.74. Impact on Housing and power supply came at the 5th and 6th spots with impact value of 3.62 and 3.60 respectively, while impact on transportation came at the 7th spot with an index value of 3.59. The level of damages caused by the flood disaster in human settlements is severe. All sectors are affected directly and indirectly.

Assessment of the Psychosocial Impacts of Flood Disaster

To thoroughly examine the psychosocial impact of flood in the study area, Severity of flood damages, the exposure to stress during and after the flood, the exposure to grief and anxiety during and after the flood event, and the duration of grief after the flood event is considered. The extent of severity is categorized into not severe, less severe, severe and very severe as presented in table 3.

Table 3: Severity of Flood

Communities	Not Severe	Less Severe	Severe	Very Severe	No of Respondents	of REI	Ranking
ODU ITU	1	1	2	16	20	3.65	6 TH
OKOHO	1	1	1	16	19	3.69	4 TH
EDEM INYANG	-	1	1	23	25	3.88	1 ST
AKPAEKPENETON	1	2	3	18	24	3.59	8 TH
AFIA ISONG	-	1	2	25	28	3.86	2 ND
IKOT OUT	-	1	4	22	27	3.77	3 RD
ETEHEMTEM	1	1	2	17	21	3.66	5 TH
MKPAN URUK	1	2	1	14	18	3.56	9 TH
MBEN INYANG	1	1	1	12	15	3.60	7 TH
MBIASO	2	3	5	25	35	3.51	11 TH
IKOT ADAKPAN	4	5	4	31	44	3.40	12 TH



AYADEHE	6	6	13	73	98	3.56	10 TH
TOTAL	18	25	39	292	374		

Source: Author (2021)

The severity of flood occurrences reflects the probability of such a flood becoming a disaster. From the table, the level of severity resulting from flood differed from one settlement to another. All the settlements recorded a very high severity level as their index score is higher than the 2.5 mean value of the Relative Effective Index, and psychosocial impact in such occurrence is inevitable. This information is illustrated in figure 2.

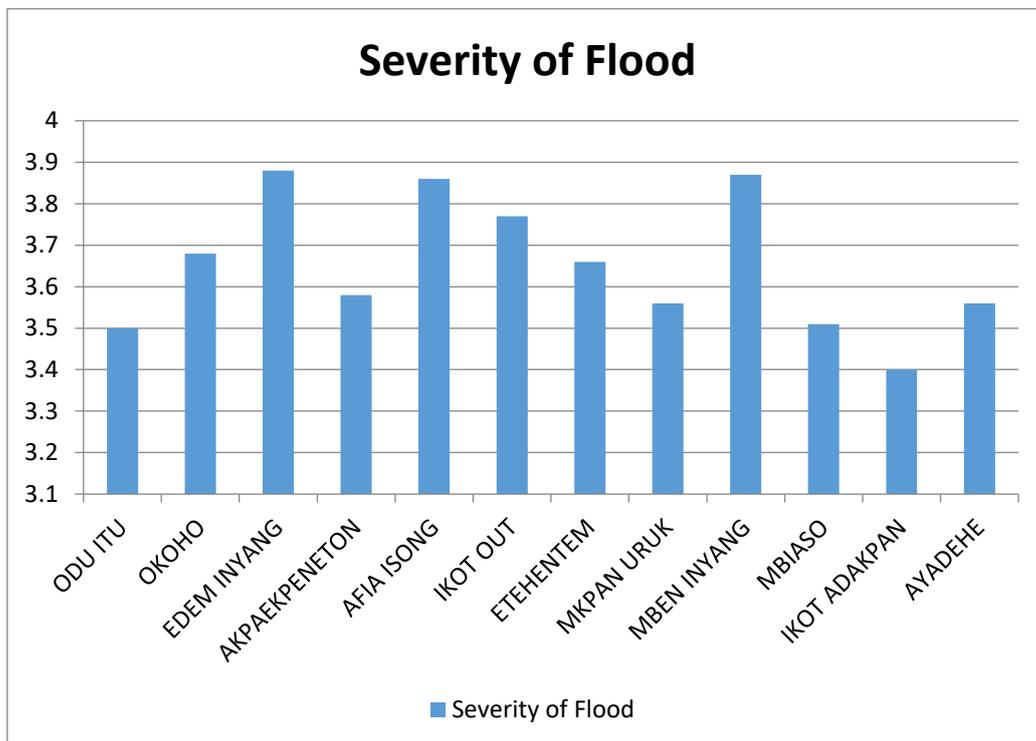


Figure 2: Severity of Flood in the settlements Investigated.

Source: Field Research (2021)

Exposure to Stress, Grief and Anxiety During and After the Flood Event

The exposure of the people to stress, grief and anxiety during, and after flood event was used to assess the psychosocial impacts of flood in the settlements. The table below reveals the level of exposure to stress, grief and anxiety experienced from flood event by the people in the various communities investigated.

Table 4: Exposure to Stress, Grief and Anxiety

Psychosocial Factors	Not Severe	Less Severe	Severe	Very Severe	No Respondents	of
Exposure to Stress	10 (2.7%)	32 (.6%)	68 (18.2%)	264 (70.5%)	374 (100)	
Exposure to Grief/Anxiety	30 (8%)	55 (14.7%)	93 (24.9%)	196 (52.4%)	374 (100)	

Source: Field Research (2021)



From the table, over 50 % of the respondents observed that exposure to stress, grief and anxiety during and after flood was very severe. Given the high level of damages which affects all sectors of the human settlements studied, stress level is high as people struggle to prevent damages and in some cases escape as buildings and other facets of the communities are destroyed. However, various people experience different severity level of grief and anxiety due to the level of damages experienced or witnessed.

Duration of Grief and Anxiety after the Flood Event

It is the period of grief and anxiety that transcends to fear, trauma, depression and post traumatic stress disorder (PTSD). Various psychosocial consequences are experienced during flood, however, the level of exposure to the flood, the level of preparedness, and the psychological disposition of an individual plays a vital role on the extent of the impact after the flood event. The table below shows the duration of grief during and after the flood event by individuals in the communities investigated.

Table 5: Duration of Grief/Anxiety

Communities	During-1 week after flood	2 weeks after flood	3weeks - 1 month after flood	More than Two month after flood	No. of Respondents
ODU ITU	4	6	5	5	20
OKOHO	1	4	6	8	19
EDEM INYANG	3	5	11	6	25
AKPAEKPENETON	1	7	9	7	24
AFIA ISONG	2	6	11	9	28
IKOT OTU	3	6	10	8	27
ETEHEMTEM	2	4	7	8	21
MKPAN URUK	2	1	8	7	18
MBEN INYANG	1	2	4	8	15
MBIASO	4	8	10	13	35
IKOT ADAKPAN	4	8	13	19	44
AYADEHE	8	21	37	32	98
TOTAL	35 (9.4%)	78 (20.9%)	131 (35%)	130 (34.7%)	374

Source: Field Work (2021)

Evidently, 34.7% of the respondents agreed that the duration of grief/anxiety last beyond two months after flood event. However 35% observed the duration of grief and anxiety last between 3 weeks to one month while 20.9% were of the opinion that it does not last beyond 2 weeks after the flood event. The remaining 9.4% only experience grief/anxiety during the flood, and at most one week after the event.

Assessment of management strategies for psychosocial impacts of disaster

The management of psychosocial consequences of any disaster is gradually gaining acceptance globally and Nigeria needs to key adopt the culture. It is evident that the



occurrence of any disaster potentially comes with psychosocial consequences. Management strategies for psychosocial impacts include:

Incorporation of psychosocial aid workers in National and State Emergency Response Agencies – This involves employing psychosocial aid workers as part of regular staff and first responders to disaster events. Identifying the impact exposure level and the behavioural pattern of an individual at the earliest stage during or immediately after flood event is very vital. These determine the quality of attention an individual will require in order not to degenerate to extreme case of psychological breakdown which will inevitably affect his social and physical disposition. Individual's recovery rate from such consequences is also influenced greatly by the help of psychosocial aids available (WHO, 1992; Mason, et al 2017).

Provision of Recreational Facilities – Recreation globally plays a vital part in recuperation from various challenges. Development and maintenance of secured park environment for recreation in neighbourhoods have been greatly encouraged in the develop world as affected individuals often recline there to recuperate. These public spaces are highly protected, maintained, and provided with adequate facilities for all classes of the people. In Nigeria however, priority has not been given to parks, open spaces and other recreational centres as a recuperation facility. The few parks available are highly inadequate, plagued with insecurity and dilapidation thereby rendering it unsafe for the public.

Community – Based Approach –Development of community-based systems such as social groups, religious association and other socio-cultural activities have been found to be very useful in Nigeria and many parts of Africa. Though mostly unprofessional in nature, these groups are involved in counseling, visitation and sometimes provision of physical and medical aids and (or) trado-medical needs to the affected members and individuals in the society. In some societies, youth, women and men organizations do organize programmes aimed at alleviating the physical, mental and social burdens of the affected individuals.

Timely Response by Emergency Agencies - Some psychosocial impacts are triggered by delayed emergency response. For instance, delayed medical attention can result in permanent disability, complicated health condition and even death. Furthermore, delayed sessions with a grieving victim can get complicated, leading to PTSD. Therefore timely emergency response is vital in abating and managing psychosocial consequences of flood.

Recommendation

Development of Flood Risk Management Plan should be urgently considered and implemented at the federal, state and local government levels to boost the preparedness and resilience of the people. Employment, integration and deployment of psychosocial aid workers and other professionals by both federal and state emergency management agency should be effected. Training of town planners at Area Planning Authorities on disaster emergency response will be very effective in community enlightenment programmes, data collection and planning by emergency management agencies.

Conclusion

Flood events come with psychosocial consequences, and mitigation of flood impacts can require more than financial and medical attention, especially were the impacts are intangible in nature. All sectors of human settlements are affected by flood events from the research and psychosocial impacts are rooted in stress, grief and anxiety which inevitably result in depression and post traumatic stress disorder if not properly handled. These were observed in



the communities studied. This therefore calls for the urgent response towards mitigating these impacts given the increased rate of flood events and other disasters in the country.

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