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## GENDER, FLOODS AND MENTAL HEALTH: THE WAY FORWARD

# Leonard I Ugwu

Department of Psychology, University of Nigeria, Nsukka - Nigeria

# **Dorothy I Ugwu**

Department of Health and Physical Education University of Nigeria, Nsukka

#### ABSTRACT

Flood is the most frequently and devastating natural disaster that kills people in thousands. Its consequences are profound, particularly on people in the less developed countries as in Nigeria. Emerging evidence shows that women suffer disproportionately in all disasters as they are made more vulnerable because of their reduced access to sources of emergency intervention as well as their lack of decision-making power in disaster prevention and preparedness programs. The gender discrimination in climate change response activities is an impediment to the adoption of effective strategy, mitigation programs, and to the empowerment of victims to build their own resilience. Recognizing these differences is a necessary and important component of any prospective attempts to address the gendered health consequences of flood. Because women make more emotional investments in the home than men, it is most likely that women experience more posttraumatic stress disorders associated with flooding experience, and consequently become more devastated emotionally and psychologically. The mental health problems of the victims of flood remain an area that successive governments have paid limited attention to. The paper therefore recommends that the application of the principles of cognitive- behavioural therapy on the victims, irrespective of sex, will remove the ugly memories of the trauma, extinguish the fears associated with the stressful events, especially as it pertains to re-location, re-equip the victims' capacities such that they can appraise positively the vicissitudes of life challenges, and consequently develop resilience. The author concludes that an integrative approach, which involves experts from diverse fields of human endeavours, is required in pulling out the victims of flood disaster from the implosive anxiety and depression that are associated with flood-provoking trauma.

Keywords: Gender, Floods, Mental health

## INTRODUCTION

Over the last 20 years, climate change has become an increasingly high profile issue both from social, economic, and psychological viewpoints. Climate change is currently threatening the world order by causing significant economic and ecological dislocations and by bringing about greater water stress and scarcity, on one hand, and on the other hand, causing increased frequency of storm surges, and heavy rainfall of long duration or high intensity. Its potential consequences are profound, particularly on people in the less developed countries of the world, such as Africa, Asia, and Latin America (Odufuwa et al., 2012). Climate change has wide-ranging effects on the environment, and on socio-economic and related factors, including water resources, agriculture and food security, human health, terrestrial ecosystems and biodiversity and coastal zones (Kolawole et al., 2011). For the U.N. Secretary-General Ban Ki-moon (2009): "climate change affects every aspect of society, from the health of the global economy to the health of our children. It is about the water in our wells and in our taps. It is about the food on the table and at the core of nearly all the major challenges we face today" (p.1). Reacting to the magnitude of the negative impacts of climate change, Oyegbile (2008) expressed concern to the effect that the world maybe getting closer to extinction through natural disasters if immediate actions are not taken, and that the signs are just too apparent to be ignored.

One of the most frequently occurring and devastating natural disasters, occasioned by climate change, is flood (Potschin, 2009). Nelson (2001) views flood as a natural consequence of stream flood in a continually changing environment; while Sada and Odemerho (1998) define it as unusually high rates of discharging, often leading to inundation of land adjacent to streams, which is usually caused by intense or prolonged rainfall. Flood, simply put, refers to a flow of water over areas which are habitually dry. Sources of flood water can rise from the sea (in the form of storm surge or coastal degradation), and from glacier melt, snowmelt, rainfall and/or from failure of manmade water containment systems, such as dams, reservoirs and pumping system. It is noteworthy to mention that excess of water in and of itself is not a problem; rather it is when excess water interacts with natural and man-modified environments in a negative sense, causing damage, death and disruption to the ecosystem, that problem results. Commenting on the impacts of floods on national development, Action Aid (2006) reported that floods are a major natural disaster that prevent Africa's growing population of city dwellers from escaping poverty and stand in the way of United Nations 2020 goals of achieving significant improvements in the lives of urban slum dwellers. The recent reported cases of flood disasters across the globe buttressed the point being made by the Action Aid International. For instance, within the month of September 2012 alone, Nigeria witnessed the most devastating flood disaster in the past decade, which killed over 148 people, including a local chief in Delta State; displaced more than 64,000 people, and destroyed properties worth millions of Naira (Daily Sun, October 14,p.5)

In addition, more than two thirds of Nigeria's thirty-six states are under serious threat by floods to the effect that floods have divided the country into two parts as water flooded Lokoja-Abuja highway, which made it impossible for travellers to move from the southern part to the northern part of the country (Amaiz, 2011). Scientists, activists, and social commentators have come to the agreement that the current wide-ranging shifts in climate variables as well as the overflow of Lagdodam in Cameroun, occasioned by the upsurge of water from Atlantic Ocean, precipitated the devastating flood disaster experienced by Nigerians. But analysts, (e.g. Aderogba (2012), continue to argue that the environment was only responding to the abuses heaped on it by man's activities. Research conducted by Ajibola *et al.* (2012) showed that prominent causes of floods in Lagos metropolis are lack of drainage facilities and rise in the sea level. The result also indicated that there is disparity in rental values of properties in flooded and non-flooded areas with those in flooded areas being less expensive

Although all strata of the society suffer from the devastating effects of floods, majority of the victims are women and children (Olumide, 2008; Mordi, 2011). Women's disproportionate vulnerability to flood disasters, compared to men, indicates that they will also experience more flood-related health problems, such as diarrhoea, cholera and other water borne and water-related diseases or injuries, and mental health problems. The mental health status of women victims is more likely to degenerate because women make more emotional investments in the home than men and consequently become more devastated emotionally and psychologically. Recognizing these differences is a necessary and important component of any prospective attempts to address the gender-health consequences of floods.

For purpose of clarity, the paper will be discussed under the following sub-headings:

- (1) Human behaviour and floods;
- (2) Gendered-health consequences of floods; and
- (3) Adaptation strategies for managing flood-induced trauma.

## **Human Behaviour and Floods**

Urbanization is an end-product of man's interactions with physical environment. As more development and urbanization occur, more of the natural landscape is replaced by impervious surfaces such as roads, houses, parking lots, and buildings that reduce infiltration of water into the ground and accelerate run off to ditches and streams (Konrad and Booth, 2002). It goes beyond doubt that failure to manage the impacts of man's interactions with his environment threatens environmental quality and contributes immensely to global climate variability. Global climate change is responsible for an unpredictable weather condition and results to an increased occurrence of natural disasters, such as floods, storms, and forest fires.

Flood, though a natural phenomenon, is exacerbated by human activities such as abuse of urban land through lack of drainage maintenance, informal settlements in the flood-disaster prone areas, overcrowded houses constructed on flood-prone areas, and encroachment upon water-ways, which

may cause changes in the hydrological balance of water-ways, and a combination of physical development of unsuitable land (Nolan and Maron, 1995). Other activities of man that exacerbated flooding include, land reclamation, which is achieved through filling up of swamps and flood plains, while destruction of mangroves and wetlands have generally reduced the flood storage capacity of the urban land (Adelekan, 2009). Notwithstanding the contribution of human activities to flooding, natural factors such as solar radiation quality and quantity, and astronomical position of the earth, also precipitate unusual heavy rainfall, which may lead to flooding. The implication of man's activities in increasing the likelihood of flooding is that human-beings are the perpetrators and victims of floods. That is to say, our activities increase the occurrence of floods, which we, in turn fall victims to.

# **Gendered-health Consequences of Floods**

Flood disaster affects more people on annual basis than any other form of natural disaster but studies (e.g. (Foa and Kozak, 1986) have shown that men and women are not affected in an equal magnitude. Women are made more vulnerable than men because women have reduced access to education and are often excluded from disaster prevention and preparedness, including in emergency intervention programme (Young, 2008). The unequal impact of floods on women, compared to men, is not limited to natural disasters alone; rather, it also permeates in everyday life and opportunities. The gender inequality resulted from the socially constructed norms, expectancies, values, roles and relations, which till today guide our attitude and perceptions of gender roles. Men's stereotypical belief that women should continue to take charge of the domestic shores in the home domain, even in the face of overwhelming evidence that women have joined the workforce in thousands, has not ameliorated their sufferings. Symke (1991) reported that in the normal situation, women, in average, work one to three hours per day longer than men in the society, whatever the number of hours men put in, while Howard (1992) asserts that more women than men hold multiplicity of roles. In addition, women in formal employment are still expected to perform their roles as mothers, wives, and health and child care providers within the family, which cumulatively put them under immense psychological stress. Performing reproductive responsibilities in the flood disaster camps and keeping a continual vigilant eye on young children, even as they cry for food in such helpless situations, are emotion- provoking and stress- laden. When the flood victims were interviewed at Igga Camp-Enugu State, Nigeria, some of the women have this to say:

"Since we came here (flood camp) we are faced with myriad of problems; such as looking after our children, lack of clean water, poor toilet facilities as we have to use 'bush system'; no drugs or mosquito nets to shield us from mosquito bite, and above all, one of us delivered of a baby boy without the assistance of any midwife or traditional birth attendant."

The hardship facing women flood victims is not peculiar to those in Igga Camp. In Aguleri Camp in Anambra State, it was reported that more than 20,000 people were camped in one secondary school, out of which 5,000 of them are pregnant women. Within one week of their camping, 11 babies were delivered - triplets, 2 sets of twins, and 4 others, while 2,000 other women are set to put to bed before the next one week (Sunday Sun, 14<sup>th</sup> October, p.5). For men, their expected role as the economic providers of the family also places additional burdens on them in the aftermath of floods. Most of the men whose families are in the various flood camps move to the nearby communities to do one form of menial jobs or the other. Although men are also affected by flood disaster, most of them do not stay at the camp all day unlike women. Consequently, men do not face the emotional trauma of watching their children cry for food as do women. Furthermore, while disasters create hardships for everyone, irrespective of gender, flood disasters on average, kill more women than men in developing countries, where women have very low social, economic and political status. In Nigeria, for instance, it was reported that 148 people lost their lives to floods in the month of September, majority of them women and children. Duncan (2007) reported that in general, more women than men were killed by flood disasters, partly because they were less physically able to run, and partly because many of them were drowned trying to save their children.

Regarding the impacts of floods on the health of the victims, Ahern *et al.* (2005) reported that diarrhoea and other water-borne diseases, or drowning and snake bites are the major causes of deaths in flood affected areas, while Jonkman and Kelman (2005) included physical trauma and heart attack in their list. The picture of significant psychological trauma levels is repeated when considering the mental health status of the flood victims. Women and girls interviewed showed symptoms which are suggestive that they are immensely and, in comparison to men, disproportionately experiencing flood-related mental health problems. The mental and emotional trauma of flooding, caused by witnessing deaths, injuries and destruction of home and property, can result in severe psychological effects such as depression, anxiety, and learned helplessness (Ahern and Kovats, 2006).

Women also expressed concern on the safety of their husbands, many of who have gone back to the flooded areas in search of food items; and these worries manifest themselves in loss of appetite, lack of sleep, nightmares, tiredness and irritability. The devastating effects of flood on the mental health of the victims have reached an alarming stage that the Sun Newspaper of October 5, 2012, reported that two victims of flood disaster have committed suicide in Kogi state, while in Cross River State there is even no dry land to bury the dead. It then follows that women experience more mental health problems, in comparison to men, and consequently need more professional assistance to help re-launch them into a normal and balanced personality. These observed gender differences in floods impacts could be explained by the differences in social demands placed on individuals by the society. Therefore, gender equity and social justice will help in bridging the gap between men and women in every aspect of life opportunities and, in addition, provide level playing ground for

all and sundry, irrespective of gender, including in flood disaster vulnerability. While efforts should be directed on how to address this inequality, more attention should be focused on how to pull them out from the posttraumatic stress disorder, which many of the victims are facing in today's flood disaster.

## Adaptation Strategies for Managing Flood-induced trauma

Exposure to traumatic events is a common experience to mankind. Trauma is an emotional reaction or response to unpleasant events such as accidents, rape, or natural disaster as in the case of the flooding. Although many people who are exposed to catastrophic events or terrifying experiences often show psychological reactions, such as mental health problems, (Carson et al., 1998), most people regain a sense of well-being on their own, with the support of family and friends. Obviously, those involved may feel some distress, but majority will not experience severe problems that prevent them from making a return to some semblance of their normal lives before the trauma-provoking events. The magnitude of the trauma-provoking events, such as watching children, wives or people drown or even watching livestock and other valuable property washed away, may trigger more mental and physical symptoms that can last long after the trauma events have passed. These psychological reactions are variously called 'depression'; adjustment disorder, acute stress disorder (ASD), and Posttraumatic Stress Disorder (PTSD), and could manifest in anyone who is exposed to traumatic events, irrespective of sex, age, race or ethnic background. Studies have shown that more than two thirds of the general population are likely to be exposed to trauma in their lifespan (Morris, 1992; Kessler et al., 1995), but only a small proportion – maybe 10-15% - go on to experience stress disorders (Neria et al., 2008).

Although Neria *et al.* (2008) reported that only a minority of people exposed to potentially traumatic events will develop a persistent mental health problem, the fact that a large number of people experience these types of events means that posttraumatic mental health is a significant health issue that needs to be addressed effectively. However, whether those involved in recent floods in Nigeria, as in other countries of the world, will go on to experience long-term mental problems will depend on a whole range of factors such as:

- how much social support they are receiving from friends, family members, humanitarian organizations, and government, both in terms of material and psychological resources.
- how exposed they were to traumatic event and how long it lasted.
- how much they lost (loss of the lives of their loved ones and material destruction in terms of livestock).
- the frequency with which they have experienced traumatic events in the past (it is more likely if they have been).
- how they appraise the whole traumatic episode.

Regarding the level of social support the flood victims are receiving from people and government of Nigeria, it is obvious that government and other humanitarian organizations, including friends

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and family members are not providing adequate relief materials to the victims. In Nigeria, many people are living below poverty line such that they cannot provide for their daily sustenance let alone help others in distress. Friends, family members, and other sympathizers in the society, who are themselves distressed economically as they wallow in abject poverty, cannot help the victims of the floods. On the part of the government, the intentions and actions of the government officials in helping the victims of floods in Nigeria, as in most developing countries of the world, are at variance. While Nigerian government votes millions of Naira to provide relief materials to the victims of floods, it has not impacted positively on the victims. In the case of the length of exposure to the recent flood-related trauma experience among flood victims in Nigeria, it is most likely that majority of the victims did not receive rescue assistance from the Nigerian government, partly because many of the victims live in the hinterland that are many miles away from the city centre, and partly because government was ill-prepared when it struck. The responses of some of the flood victims interviewed attest to the fact that the exposure was long and traumatic.

When it became obvious that we were no longer safe, we hurriedly boarded a local canoe that took us to Igga, Enugu State--- a journey that lasted 12 hours in turbulent waters. In the process, we lost 28 people out of which 25 of them are women and children, while properties worth millions of Naira were lost.

The above excerpt x-rays the magnitude and the duration of the trauma-provoking event, which raises more questions regarding the impact such trauma is having on the victims. It then beats our imagination considering the feelings of men, women and children enmeshed in such lifethreatening event for upwards of 12 hours.

Although the people of Odeke in Kogi State reported that they have never had this type of floods in their history, it is an annual occurrence for those in the riverine Delta regions of Nigeria. However, many of the victims interviewed expressed shock and disbelief at what happened to them; showed fear and apprehension that it is not yet over; appraised their situation as "hopeless", and demonstrated high level of emotional trauma. Their responses are summarized thus:

Sleep eludes me, but if I sleep at all, my dreams are all horror – my children drowning with nobody to rescue them; my livestock being washed away, and I facing dangerous animals such as snakes and crocodiles. But when I am awake, I encounter free-floating thoughts that continue to remind me of my ugly experience, and sometimes I feel like taking my life.

The responses obtained through interview showed that the trauma experience of the victims of the recent flood disaster in Nigeria met all the conditions that predict the antecedents of mental health

problems. The symptoms of posttraumatic disorder are evident from their responses, which manifest in the form of suicide ideation, free-floating thought that fixate on the trauma events, lack of sleep, and uncontrollable fear. The victims' narratives thus far show strong indications of the need to heal the trauma-provoking episodes in their minds before they become ingrained and internalized into their cognitive set. This could be achieved using some therapeutic psychological techniques such as Cognitive Behavioural Therapy (CBT).

# **Treatment Regime for Traumatized Flood Victims**

Posttraumatic stress disorder (PTSD) is a well-recognized psychiatric disorder that can occur following a major traumatic event. The recent trauma experienced by the victims of flood disaster is a typical incident that could cause PTSD. Characteristic symptoms include re-experiencing phenomena such as nightmares and recurrent distressing thoughts of the event, avoidance and numbing of general responsiveness as in the case of trying not to talk about the disaster event or be reminded of the traumatic event, experiencing detachment and estrangement from the other people and hyper arousal symptoms including sleep disturbances and increased irritability (Foa et al., 2001). Most of the symptoms were reported by the victims as evidenced from the responses of the interviewees of the flood victims. PTSD is relatively common conditions; and several treatment options are available for people experiencing symptoms of posttraumatic stress disorder. Foa and Kozak (1986) recommended Cognitive Behaviour Therapy as the most effective treatment for people with posttraumatic stress disorder. Whether it is individual, group, pharmacotherapy (medication) or a combination of these, treatment using Cognitive Behaviour Therapy (CBT) has been proven to be effective much of the time and can help a person get back to his/her regular routines and healthy functioning. CBT treatment approach looks at ways in which a person thinks about a problem, their learned responses to certain triggers associated with that problem and ways in which their thinking affects their emotional states. Cognitive behaviour technique for PTSD is designed to desensitize the person to the traumatic event such as flood disaster by re-processing the fear event so that the traumatized patients would improve their strategies to decrease the sense of threat (Kar, 2011). The use of CBT is based on an underlying theoretical rationale that an individual's affect and behaviour are largely determined by the way he/she thinks and structures the world around him/her (Kar and Misra, 2008). CBT addresses the twin issues of lack of control and unpredictability inherent in traumatic situations (Garakani et al., 2004). The import of this theory is that the interpretation we give to the trauma-provoking events determines the extent to which it will affect our emotion. That is, a traumatic event fixates in our minds and becomes threatening because we unconsciously refuse to interpret the event as transient but, rather, see it as what has come to stay in our life. Therefore, when an individual appraises a situation negatively, it triggers negative emotions that increase the personal disaster consequences. Such negative emotions may develop into more severe health problems (e.g. posttraumatic disorder), particularly when the individual lacks the economic, social and psychological resources needed to cope with the trauma experiences. On the contrary, positive emotions contribute to individual's ability to cope with stress and negative life experiences because they stimulate thoughts and increase the number of perceived

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coping behaviours by adding to one's physical, intellectual, social and psychological resources (Tugade and Fredrickson, 2004). The application of CBT in the treatment of adults and children with PTSD could come in three different but related techniques, namely:

- Exposure therapy
- Stress-inoculation training, and
- Cognitive processing therapy

Exposure therapy refers to series of procedures designed to help individuals confront thoughts and safe or low-risk stimuli that are feared or avoided. Exposure therapy is done by creating a detailed present account of what happened, making an audio tape recording of it and asking the individual to listen to this over and over again. In the case of the traumatized persons of flood disaster, the victims may be required to face a tape recorded event of distressed voices of people in a simulated flood disaster or it may be the use of film projectors showing people in nearly life and death experiences in flood-related disaster. Prior to these exposures, the victims must have undergone muscle relaxation training, which will inhibit the fear-provoking episodes of the exposure exercise With the exposure, clients are helped to extinguish fears of reminders of their traumatic events. These reminders could be in the form of pictures, smells or even sound that brings about thoughts and feelings connected with the traumatic events. The treatment usually commences by having the client confront (or be exposed to) the reminders that he fears without avoiding them.

Another technique for the treatment of people with PTSD (flood-provoked trauma) is the use of stress-inoculation training method (SIT). In this circumstance, the therapist helps the flood victims with PTSD symptoms gain confidence in their ability to cope with anxiety and fear stemming from trauma cues. The underlying theoretical rationale of this technique is that when victims are helped to identify those cues that precipitate fears and are provided with the skills and different coping strategies such as muscle relaxation and deep breathing, they will be able to handle their problems on their own. The goal of this technique is to ensure that the victims learn how to detect and identify cues as soon as they appear so that the client can put the newly learned coping skills into immediate action. Third technique is the use of Cognitive Processing Therapy (CPT). This is the process whereby the therapist restructures the individual's cognition, otherwise referred to as 'cognitive' restructuring. The PTSD symptoms stem from a conflict between pre-trauma beliefs about the self and the world and the post-trauma information. Perhaps the pre-trauma beliefs of the flood victims were that they are sons of God and as such nothing calamitous will ever happen to them. In the event of the post-trauma, the victims begin to ask questions as to whether God has forsaken them. If they get stuck in that idea, the errors in thinking may precipitate PTSD. The role of the therapist in this circumstance is to help the client correct the errors in thinking by addressing the stuck points and consequently restructuring his cognition. Another technique that could be applied in the treatment of the victims of flood disaster with PTSD symptoms is group therapy. Group therapy is a technique whereby persons with PTSD are encouraged to discuss out their problems with their colleagues who share similar traumatic experience. Sharing experiences with

others who had passed through similar trauma is a means of venting the trauma-provoking feelings and relieves the clients with the PTSD symptoms, memories, and cues that intrude in the clients' memory.

One other technique is the use of systematic desensitization, which involves exposing the clients to cues associated with the traumatic events (graded re-exposure). Applied to the traumatized victims of the flood disaster, the trauma-provoking events may be graded, ranging from the least trauma-inducing to the highest trauma provoking events. The trauma-related memories and reminders are presented to the victims and paired with muscle relaxation training. Usually, the above treatment regimes are complimented with medication. This becomes necessary because traumatic events can influence the neurochemistry of the body and brain and impact on a person in many ways. They can increase blood pressure, muscle tension, and general arousal level of the body system. Selective serotonin reuptake inhibitors (SSRIS) are a type of depressant medicine that helps victims of PTSD to feel less sad and worried. However, a common dictum which says that prevention is better than cure still remains a better option.

#### RECOMMENDATIONS

Although flood is a natural phenomenon, human activities exacerbate it. Most flood victims fell devastated and are emotionally and psychologically traumatized. Floods cannot be eliminated because human beings cannot stop nature from taking its course; rather, floods can only be managed and their impacts on the environments and human beings minimized.

In order to minimize the impacts of floods on the physical as well as in the social environments, the following actions are recommended:

(1) **Mass education on flood-prevention**. Because human activities exacerbate floods, workshops and seminars should be organized for those living in flood-prone areas with a view to impacting the knowledge to them so that they will become aware of how their interactions with environment could exacerbate flood.

## (2) Early Warnings.

Our meteorological stations should be equipped with up to date gadgets, which will help meteorologists predict accurately climate variables and pass the same information to the government and the public, respectively. This is important because early warnings will help government take proactive actions on how to prevent the occurrence of floods, if possible, but if not, provide appropriate intervention strategies that will minimize their impacts on environment and people.

#### (3) Provide emergency agencies with up -to- date equipment.

Government should provide the employees of the agencies with state-of-the-art equipment that will help them in the effective distribution of relief materials to the victims of natural disasters. In addition, the agencies should have series of mobile phone lines where they

could be reached in the case of emergency since many of the victims may be living in the hinterland. These phone numbers should be continually announced in radio jingles and television adverts with instructions that those under threat should call the lines for help. The agency should comprise experts from medical, counselling, and armed personnel and should be provided with all the necessary equipment, such as helicopters, speed boats, and life jackets for easier discharge of their duties.

(4) Government should establish mobile clinics to flood-prone areas and equip them with drugs and other logistics to enable the staff come into the needs of the victims with ease.

# (5) Establishment of Psychological Services centres

In order to bring the psychological services to the door steps of the traumatized persons, government should establish psychological services centre in all the local government headquarters in the country where the victims of disaster should be screened by psychologists.

- (6) More receiver dams should be constructed by the government so that excess water released from the coastal areas will be absorbed. This is very important because the 2012 floods that over-flooded 23 out of 36 states of Nigeria were caused by the release of water from Kiri and Lagdo dams in Adamawa and Cameroun, respectively.
- (7) Government should enforce the section of law that protects the rights of women in order to remove all aspects of discrimination against women. Equity and social justice provide level playing ground for women and men in all life opportunities, including floods-related adaptation. This will remove all forms of disproportionate gender vulnerability.

## **CONCLUSION**

Climate change is currently threatening the world order by causing significant economic and ecological dislocations and impacting negatively on the general health conditions of the displaced persons, including their mental health. One off-shoot of climate change is flood, which today is the most frequently occurring and devastating natural disaster that kills people in thousands worldwide and causing inestimable damages to properties. Although flood kills both men and women in their thousands, women are more vulnerable than men in all disasters, including floods. Women also suffer more emotional and psychological trauma than their men folk. Although a majority of flood victims can bounce back to their normal mental functioning after the flood-disasters, few of them suffer permanent psychological scars that need the assistance of therapists. However, any victim that experienced trauma, no matter the magnitude, requires counselling so long as he/she passed through the ugly experience of trauma-provoking episode.

## REFERENCES

Action Aid, I., 2006. Climate change, urban flooding and the rights of the urban poor in africa. Key findings from six Africa cities

- Adelekan, O., 2009. Vulnerability of poor urban coastal communities to climate change in lagos, nigeria. Nigeria: Fifth Urban Research Symposium. Lagos.
- Aderogba, K., 2012. Global warming and challenges of floods in lagos metropolis, nigeria.
- Ahern, M. and R. Kovats, 2006. The health impacts of floods.' in flood hazards and health. London: Earth scan: Responding to present and future risks.
- Ahern, M., R. Kovats, P. Wilkinson, R. Fow and F. Matthias, 2005. Global health impacts of floods. Epidemiologic evidence. Epidemiological Review 27(1): 36-46.
- Ajibola, M., M. Izunwanne and A. Ogungbemi, 2012. Assessing the effects of flooding on residential property values in lekki phase 1, lagos, nigeria. International Journal of Asian Social Science 2(3): 271-282.
- Amaiz, E., 2011. Flood displaces 50 villages in delta state. in Vanguard: Towards a better life for the people. Lagos: Vanguard Media Ltd.
- Carson, R., J. Butcher and S. Mineko, 1998. Abnormal psychology and modern life. Boston: Alloy and Bacon.
- Duncan, K., 2007. Global climate change and women's health. Women and environment International Magazine, issue 74/75:10-11.
- Foa, E., K. Johnson, N.C. Fenny and K.R. Treadwell, 2001. The child ptsd symptoms scale (cpss): Preliminary psychiatrics of a measure for children with ptsd. Journal of Clincal Child Psychology 30: 376-384.
- Foa, E. and M. Kozak, 1986. Emotional processing of fear: Exposure to corrective information. Psychological Bulletin 99: 20-35.
- Garakani, A., J. Hirsch and L. Katz, 2004. General disaster psychology. Psychiatric Clinical North America 27: 391-406.
- Howard, A., 1992. Work, families and organizations. New York: Jossey Bass.
- Jonkman, S.N. and I. Kelman, 2005. An analysis of the causes and circumstance of flood disaster deaths. Disasters 29(1): 75-97.
- Kar, N., 2011. Cognitive behavioral therapy for the treatment of post-traumatic stress disorder: A review. Neuropsychiatric Disaster Treatment 7: 167-181.
- Kar, N. and B. Misra, 2008. Mental health care following disasters. Bhubaneswar: Quality of Life Research and Development Foundation.
- Kessler, R.C., A. Sonneg, E. Bromet, M. Hughes and C. Nelson, 1995. Posttraumatic stress disorder in the natural comorbidity survey. Archives of General Psychiatry 52: 1048-1060.
- Kolawole, M., B. Olayemi and T. Ajayi, 2011. Managing flood in nigerian cities: Risk analysis and adaption options ilorin city as a case study. Applied Science Research 3(1): 17-27. Available from <a href="https://www.scholarsresearchlibrary.com">www.scholarsresearchlibrary.com</a>.
- Konrad, C. and B. Booth, 2002. Hydrologic trends associated with urban development for selected streams in western washington. U.S. Geological Survey Water Resources Investigations. Report 02-4040, 40.

- Mordi, R., 2011. The tsunami in the making. The tell Nigeria Independent Weekly: Tell Communication Ltd
- Morris, F.H., 1992. Epidemiology of trauma: Frequency and impact of different potentially traumatic events on different demographic group. Journal of Consulting and Clinical Psychology, 60: 409-418.
- Nelson, S., 2001. River systems and causes of flooding geology 204 tulane university Available from <a href="https://www.tulane.edu.geo/204/subsidence.pdf">www.tulane.edu.geo/204/subsidence.pdf</a>.
- Neria, Y., A. Nandi and R. Galea, 2008. Post-traumatic stress disorder following disasters.

  a systematic review, PsychologicalMedicine 38: 467 480.

  Doi:10.1017/S0033291707 001353.
- Nolan, B. and R. Maron, 1995. History, causes and significance of changes in the channel geometry of redwood greek, north western california, 1936 1982. United States Geological Survey Professional, Paper 1454N, USA.
- Odufuwa, B., H. Adedeji, J. Oladesu and A. Bongwa, 2012. Floods of fury in nigeria cities. Journal of Sustainable Development 5(7): 69-79.
- Olumide, S., 2008. Against floods, lagos rebuilds canals' in guardian. Conscience nurtured by truth. Lagos, Guardian Newspapers, Vol. 26, No. 10919: Addison-Wiley educational publishers.
- Oyegbile, O., 2008. Battling a global threat' in tell magazine. Lagos: Tell Communication Ltd, Ikeja.
- Potschin, M., 2009. Land use and the state of the national environment. Land Use Policy, 265: 170-177. Available from http://dx.doi.org/10.1016/i.landusepol.2009.08.008.
- Sada, P. and F. Odemerho, 1998. Environmental issues and management in nigeria development. Ibadan: Evans.
- Symke, P., 1991. Women and health. London: Zede Books: Women and the world economic crises.
- Tugade, M. and B. Fredrickson, 2004. Resilient individuals use positive emotions to bounce back from negative emotional experiences. Journal of Personality and Social Psychology 88: 320-333.
- U.N. Secretary-General Ban Ki-moon, 2009. . Denmark.
- Young, M.H., 2008. Global climate change: What does it mean for the world's women? Population action international (pai) blog Available from <a href="https://www.populationaction.org/.../global-climate-change-what-doe.html">www.populationaction.org/.../global-climate-change-what-doe.html</a>.