

Solastalgia and the Mental Effect of Climate Change: A Perspective of Lagos State University Students

By

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Abstract

This study investigated students' perception of solastalgia and the mental affects of climate change among Lagos State University Students. Three (3) hypotheses were formulated and tested. The descriptive survey research design was adopted for the study. Three hundred (300) undergraduates (males =143 and female =157) with mean age of 21.65 of Lagos State University selected through simple random sampling technique from three (3) departments were used as samples. A self- developed questionnaire titled Environmental Distress Questionnaire (EDQ) with reliability coefficient of 0.68 was used to collect data for the study. Student T-test and Analysis of Variance (ANOVA) statistical procedures with significance level fixed at 0.05 were used for data analysis. Results indicated that there was no significance difference in the perception of the various categories of students as regards the mental affects of climate change. On the basis of the findings. it was recommended that mental health needs of the people should be given serious thought and consideration by those concerned at all times and that psycho-social implications of climate change should be understood so as to serve as a starting point for informed action to prevent dangerous climate change at individual, community and societal level.

Keywords: Solastalgia, Mental Affects, Climate Change.

Introduction

A small yet growing body of evidence suggests that how people think and feel is being influenced strongly by the ecosystem transformation related to climate change and industry-related displacement from the land (Raphael, 1998). These powerful

stressors are occurring more frequently around the world. For instance, when researchers from the centre for Rural and Remote Mental Health at the University of Newcastle in Australia conducted interviews in drought-affected communities in New South Wales in 2005, the responses suggested some of their respondents may have been suffering from a recently described psychological condition called solastalgia (Few, 2007).

Solastalgia describes a palpable sense of dislocation and loss that people feel when they perceive changes to their local environment as harmful (Halpen and Tramantin, 2007). It is a neologism that Glenn Albrecht, an environmental philosopher at the University of Newcastle's School of Environmental and Life Sciences created in 2003. Halpen and Tramantin reported Albrecht's stunning insight that there might be a wide variety of shifts in the health of the ecosystem from subtle landscape changes related to global warming to desolate wasteland created by large-scale environmental degradation activities such as mining that diminish peoples' mental health (Halpen & Tramantin, 2007). The psychological and mental health implications of climate

change have only more recently been considered within climate change and health frameworks, particularly in the context of disaster recovery from extreme weather events (Frumkin, Hess, Luber, Malilay & McGeelin, 2008).

There are three key mental health implications of climate change. Firstly, direct impact of climate change, such as extreme weather events, are likely to have immediate impacts on the prevalence and severity of mental health systems. Secondly, vulnerable communities are beginning to experience disruption to social, economic and environmental determinants that promote mental health. Finally, there is an emerging understanding of the ways in which climate change as a global environmental threat may create emotional distress and anxiety about the future.

There is an extensive body of evidence showing the ways in which extreme weather events can lead to psychological and mental health outcomes associated with loss, disruptions and displacement as well as cumulative mental health impacts from repeated exposure to natural disaster (Few, 2007; Halpen & Tramantin, 2007; Weiss, Saracero, Saxena & Ommeren, 2003; Peek &

Mileti, 2002, Raphael 1998, Myers, (1994). Disaster response and emergency management have been a focus of government and agencies over the past decade, with an increasing emphasis on psychological and psychosocial interventions (Rao, 2006).

Mental health impacts differ according to the type, suddenness and scale of the catastrophe, and the social, historical and cultural context in which it occurs (Ozer, Best, Lipsey & Weiss, 2003). Impacts are compounded by the vulnerability of individuals and communities, the appropriateness of emergency responses, and the resources available to provide support and rebuild. While extreme weather events occur worldwide, it is often the poorest communities that are already deficient in services, which are likely to be disproportionately impacted by natural disasters.

Relative socio-economic disadvantage and unemployment are linked to poor mental health through increased exposure to psychosocial risk factors including reduced personal autonomy, negative perception, stress, insecurity and social isolation (Patel Araya, deLima, Ludemir & Todd, 1999; Shields & Price,

2001, Wilkinson & Marmot, 2003;). Through its likely impacts on economic systems and cost of living and the unequal distribution of these impacts within and between communities, climate change is likely to negatively impacts on mental health and well being.

Financial hardship related to climate change may result from: reduced income and employment in climate sensitive industries such as agriculture and tourism; loss of assets and recovery costs from extreme weather events or relocation; and increases to the cost of essential goods and services (Pittock, 2005; Stern, 2006; Lee, 2007; Spickett, Brown & Katscherian, 2008). In addition, the rapid restructuring of emissions intensive industries including power generation, agriculture and heavy industries prevent significant challenges for mental health through potential loss of employment in these industries, especially in low-skilled or regional workforces with few employment alternatives.

The longer term impact of climate change on mental health comes from people's emerging awareness of climate change as a global environmental threat-not the experience of climate change events per se. As people's understanding

of climate change grows and deepens, it is likely to have a significant impact in their social, emotional and spiritual well being. Individuals make sense of the information that they receive about climate change by talking with others, sharing views, and reality testing their appraisals. In the end, an individual understanding of climate change, and their emotional reactions to this knowledge, is a combination of individual processes such as their own concerns, defences, thoughts and feelings, and social processes. Some of the social processes include social constructions of climate change and social amplification of risk in which public perceptions of risk are intensified or dampened (Reser, 2004).

There is a complex relationship, therefore, between climate change and people's awareness of, and responses to, environmental threats. From a psychological point of view, feelings and thoughts about such a potentially enormous threat are likely to be 'managed' by adaptive protection motivation systems, and modified through social comparison with others and selective information and exposure (Reser, 2004).

It is in the light of the relationship between solastalgia, mental health and climate change that this study investigates the solastalgia and the mental affects of climate change as perceived by students of Lagos State University, Epe Campus. The following research hypotheses were generated and tested for the purpose of the study:

1. There is no significant difference in the solastalgia and mental effects of climate change as perceived by male and female students.
2. There is no significant difference in the solastalgia and mental effects of climate change as perceived by students from various levels of study.
3. There is no significant difference in the solastalgia and mental effects of climate change as perceived by students from different departments.

Methods

Design

This is a descriptive survey research, which employed the questionnaire for the purpose of collecting data on perception of solastalgia and mental effects of climate change.

Sample and Sampling Procedure

A simple random sampling techniques was used to select (300) three hundred respondents from the student population of the university. It consisted of (143) one hundred and forty three males and (157) one hundred and fifty seven female undergraduate students from 200 -500 level covering the (3) three departments existing in the campus, namely Chemical and Polymer Engineering (CPE), Electronic and Computer Engineering (ECE) and Mechanical Engineering (ME). The mean age of the respondents is 21.65.

Instrumentation

The instrument used for the data collection was the collection titled, Environmental Distress Questionnaire (EDQ). The questionnaire is a self-designed 20-item scale of the 4- point Likert rating format ranging from strongly agree, agree, disagree to strongly disagree.

The questionnaire is made up or two sections. Section A comprised of items to measure, sex, age, department, level of study, and mode of entry of respondents. Section B comprised of items to measure the students' perception of solastalgia and mental

effects of climate change. The instrument was pre-tested in Michael Otedola College of Primary Education, Noforija, Lagos on a sample of 30 respondents randomly selected from among the students and reliability co-efficient of 0.68 was obtained, which indicated that the instrument was reliable.

Procedure

The researchers visited the selected school to administer the questionnaires. Apart from soliciting for co-operation, the respondents were informed of the purpose of the study and the need for factual and objective response. Participants filled the EDQ at individual pace and the completed copies were retrieved immediately.

Data Analysis

The data was analysed using t-test and analysis of variance (ANOVA). Statistical procedures with significance level fixed at 0.05 alpha levels.

Results

Table 1: T -test analysis of difference of male and female students' perception of solastalgia and mental effects of climate change

Group	N	X	SD	DF	t-cal	t-crit	P
Male	143	91.0420	8.05253	298	0.14	1.96	NS
Female	157	91.1783	9.32635				

As revealed in table 1, the result shows that there is no significance difference in the perception of respondents on solastalgia and the mental effects of climate changes. The computed t-value is -0.14 is less than the critical t-value of 1.96 at 0.05 level of significance. This implies mental effects are not being perceived differently by the two sexes. Hypothesis one is therefore, not rejected.

Table 2: Summary of ANOVA Table of Analysis showing students' perception of the Mental Effects of Climate Change, based on Level of Study

Source of variation	Sum of square	Df	Mean square	F	P	Remarks
Between groups	521.078	4	130.269	1.727	.144	NS
Within groups	22257.067	295	75.448			
Total	22778.145	299				

As shown in table 2, the result reveals that there is no significance difference in the perception of respondents across level of study on the mental effects of climate change. The observed f-ratio of 1.727 was found to be lower that the critical ratio of 2.37 at 0.05 level of significance. This indicates that respondents in the various levels of study would not differ in their perception of the mental effects of climate change. The hypothesis is therefore, not rejected.

Table 3: Summary of ANOVA Table of Analysis Showing Students' Perception of the Mental Effects of Climate Change Based on Departments

Source of variation	Sum of square	Df	Mean square	F	P	Remarks
Between groups	595.730	5	119.146	1.579	.166	NS
Within groups	22182.416	294	75.450			
Total	22778.146	299				

Table 3 above reveals that there is no significance difference in respondents' perception of the mental effects of climate change from the various departments. The observed f-ratio of 1.579 was found to be lower than the critical ratio of 2.21

at 0.05 level of significance. This indicates that respondents from the various departments would not differ in their perception of the mental effects of climate change. The hypothesis is therefore, not rejected.

Discussion

The findings from the analysis presented in tables 1 to 3 show no significant differences in the perception of respondents on the mental effects of climate change based on gender, level of study and departments. The findings in table 1 revealed that there was no significance difference between male and female perception on the mental effects of climate change. This result is in line with the studies of Tucci, Mitchell and Goddard (2007) that noted the psychological impact of climate change as a global phenomenon, stating that most children are troubled about the state of the world that they honestly believe it will come to an end before they get older. It equally corroborated Alston (2007) findings who found no significance difference between gender perception of climate change and variable adaptations of women and men. It is evident that both sexes perceived climate change as a crucial issue that affects individual psycho-socially.

The findings in Table 2 and 3 further revealed that respondents of various levels and departments within the university perceived similarly the mental effects of climate change among university respondents. This result further supports the assertion of researchers that no level of education is immune from the trauma associated with harsh and unfavourable environmental conditions. For instance, Albrecht, Sartore, Conner, Higginbotham, Freeman, Kelly, Stain, Tonna and Pollard (2007) in their work among communities in New South Wales, Upper Hunter Region suggested that some of the respondents may have been suffering from solastalgia and other psychological conditions due to the experience of ecosystem loss and environmental damage that no level or category of person is exempted from it. Their stunning insight indicated that there might be a wide variety of shifts in the system - from subtle landscape changes related to global warming to desolate wastelands created by mineral exploitation - that diminish people's mental health. McMichael, Campbell-Lendrum, Corvalan, Ebi, Gicleko, Scheraga and Woodward (2003) in their study emphasised that feelings of melancholia and homesickness were recorded in aboriginal people in the

America and Australia who had to leave their home territories. Report of researches conducted in communities affected by hurricane Katrina in the USA equally shows high rates of depression, domestic violence and significantly higher rates of suicide completion and attempts (Larrance, Anastario & Lawry, 2007; Acierno, Ruggiero, Galea, Resuick, Koenen, Roitzsch, de Arellano, Boyle Kilpatrick, 2004). According to the findings this population also showed high rates of post-traumatic stress disorder (PTSD) that cuts across every category of persons in affected communities.

Conclusion / Recommendations

This study has assisted in determining the relationship between climate change and mental health as perceived by university students on the basis of sex, level of study and department. It was revealed that students similarly perceived the mental effects of climate change. The incidence of climate change is seriously affecting all nations of the earth adversely since the world is seen as a global village. This in turn has a psychological impact on the mental wellbeing of the inhabitants.

A full understanding of the consequences and implications of climate change calls for a response that extends well beyond

technical fixes and cost benefit analyses have been noted by Spratt and Sulton (2007), Hamilton (2006), Moubiot (2007) and Eckersley (2008). The large and increasingly urgent challenge is to begin to envisage and build social and economic relationships that are based on sustainable and just patterns of growth and consumption. It is on this basis that the following recommendations are made:

1. The psychosocial implications of climate change should be understood to serve as a starting point for informed action to prevent dangerous climate change at individual, community and the societal levels.
2. Mental health needs of people should be given serious thoughts and considerations by those concerned at all times,
3. A better understanding of the mental health impact of on-going climate change 'threats' on individuals and communities living in disaster prone regions should be sought.
4. Climate change adaptation measures should be designed and implemented at all levels to enhance and promote individual coping strategies.

5. Vulnerable individuals, groups and/or communities should be adequately catered for in the event of any environmental catastrophe.

References

- Acierno M, Ruggero KJ, Galea S, Resuick H.S, Koenen K, Roitzch J, de Arellano M, Boyle J & Kilpatrick D.G (2007) Psychological Sequelae Resulting from the 2004 Florida Hurricanes: Implications for post-disaster intervention. *American Journal of Public Health*, 97: S103-S108.
- Albrecht. G., Sartore G.M, Conner L., Higginbotham N, Freeman S, Kelly B, Stain H., Tonna A & Pollard G. (2007) Solastalgia: The Distress Caused by Environmental Change. *Australasian Psychiatry*, 15 (1) S95- S98.
- Alston M. (2007) Gender and Climate Change: Variable Adaptation of Women and Men. *Just Policy*, 46: 29-35.
- Berry H., Kelly B., Hanigan L., McMichael A, Welsh J, Kjellstrom T. (2008) Rural Mental Health Impacts of Climate Change. *Garnaut Climate change Review*.
- Eckersley R. (2008) Nihilism, Fundamentalism or Activism: Three Responses to Fears of the Apocalypse. *The Futurist*, January/February: 35-39.
- Few R (2007) Health and Climatic Hazards: Training Social Research on Vulnerability, Response and Adaptation.
- Frumkin H., Hess J., Luber G, Malilay J & McGeehin M. (2008) Climate Change: The Public Health Response. *American Journal of Public Health*, 98 (3): 435-445.
- Halpern J. & Tramontin M. (2007) Disaster Mental Health: Theory and Practice. Belmont, CA, Thompson.
- Hamilton C. (2007) *Scorcher: The Dirty Politics of Climate Change*. Sydney, Black Ink.
- Larrance R, Anastario M, & Lawry L. (2007) Health status among internationally displaced persons in Louisiana and Mississippi Travel

- Trailer parks. *Annals of Emergency Medicine*: 49(5): 590-601.
- Lee J, (2007) *Climate Change and Equity in Victoria*. Melbourne, Friends of the Earth.
- Moubiot G. (2006) *Heat*. London, Allen Lane.
- Myers D. (1994) *Disaster Response and Recovery: A Handbook for Mental Health Professionals*. Washington DC, Department of Health and Human Services.
- Ozer E., Best S., Lipsey T. & Weiss D. (2003) *Predictors of Post-traumatic Stress Disorder and Symptoms in Adults: A Meta-analysis*. *Psychological bulletin*, 129: 52-73.
- Patel V., Araja R, de Lima M, Ludemir A. & Todd C. (1999) *Women Poverty and Common Mental Disorders in Four Restructuring Societies*. *Social Science and Medicine*, 49(11): 1461-1471
- Peek LA.& Mileti D.S (2002) *The History and Future of Disaster Research*. In *A Handbook of Environmental Psychology* Edited by: Bechtel R.B Churchman A. New York, John Wiley; 511-524
- Pittock B, (2005) *Climate Change: Turning up the Heat*. Canberra, CSIRO Publishing.
- Rao K. (2006) *Psychosocial Support in Disaster-affected Communities*. *International Review of Psychiatry*. 18 (6): 501-505.
- Raphael B. (1998) *When Disaster Strikes: How Individual and Communities Cope with Catastrophe*. New York, Basic Books.
- Reser J. (2004). *The Experience of Natural Disaster: Psychological Perspectives and Understanding*. In *International Perspectives in Natural Disasters Occurrence, Mitigation and Consequences*. Edited by: Stottman J.P Lidstone J., De chano L.M. & Dordecht. Kluwer Academic. 369-384.
- Shields M. & Price S. (2001) *Exploring the Economic and Social Determinants of Psychological and Psychosocial Health*.

**Discussion Paper No.396 Bonn
Institute for the Study of Labour.**

**Heroes: Modern Children in
Australia, Melbourne, Australian
Childhood Foundation**

**Spickett J., Brown H & Katscherian D.
(2008) Health Impacts of Climate
Change: Adaption Strategies for
Western Australia. Perth.
Department of Health.**

**Weiss M, Saxena S & Van Ommeren M.
(2003) Mental Health in the
Aftermath of Disaster: Consensus
and Controversy. Journal of
Nervous and Mental Disease,
191(61): 1-5**

**Stern N. (2006) The Economics of
Climate Change: The Stern
Review. Cambridge Cambridge
University Press**

**Wilkinson R. & Marmot M. (2003) Social
Determinant of Health : The Solid
Facts 2nd Edition Geneva, World
Health Organization.**

**Tucci J., Mitchell J. & Goddard C. (2007)
Children's Fears, Hopes and**

