



Psychological health challenges of the hill-tracts region for climate change in Bangladesh



Syed Muhammad Sajjad Kabir

Department of Psychology, Life and Earth Sciences, Jagannath University, Dhaka - 1100, Bangladesh

ARTICLE INFO

Keywords:
Health challenge
Climate change
Hill-tracts
Bangladesh

ABSTRACT

The aim of this paper is to provide an overview of the deleterious effects of climate change on psychological health of the Hill-Tracts and government to deal with these adverse psychological health impacts. Although knowledge is still limited about the connections between climate change and psychological health, the evidence is indicating that impacts can be felt at both the individual and community levels, with psychological health outcomes ranging from psychological distress, depression, and anxiety, to increased addictions and suicide rates. Drawing from 125 in-depth interviews conducted between January 2015 and October 2016 with community members and local and regional health professionals, participants reported that climate change was negatively impacting psychological health and well-being. The results stated that climate change enhanced the possibility of an increased drug, family stress, alcohol use, amplified previous traumas, psychological health stressors, and were implicated in increased potential for suicide ideation of the Hill-Tracts region in Bangladesh. These exploratory findings indicate that climate change is becoming an additional psychological health stressor for Hill-Tracts' dwellers in Bangladesh.

1. Introduction

Climate change is one of the most important emerging challenges to the psychological health of the entire humanity. Many studies have brought to light the psychological health outcomes of climate change for the sufferings. The policy-making bodies of the government need to gain awareness about these impacts. Through such awareness, dwellers of these communities and their policy-makers can institutionalize mechanisms to provide psychological support to the affected populations by climate change, before it becomes a massive public health challenge and starts affecting the vocational and social lives of people.

Psychological health issues possibly linked to changes and variability in climate are emerging globally through both direct and indirect impacts (Berry et al., 2011; Cunsolo et al., 2013; Speldewinde et al., 2009). According to the American Psychological Association Task Force on the Interface between psychology and climate change (Swim et al., 2010), these climate change related psychological health impacts are anticipated to be widespread, cumulative, and profound (Swim et al., 2010), and experienced first and most acutely by those with pre-existing mental illnesses or issues, marginalized populations, communities who rely most closely on the local ecosystems, and areas most susceptible to climatic changes and variability (Berry 2009; Doherty and Clayton 2011; Fritze et al., 2008; Swim et al., 2011). To date, there has been very little research conducted in Bangladesh, with most of the

work emerging from Australia, Canada and USA (Berry et al., 2011; Dean and Stain 2010; Polain et al., 2011; Rigby et al., 2011). In order to begin to address this gap in research, and drawing upon a community case study from the port city Chittagong, Cox's Bazar, Rangamati, Bandarban, and Khagrachhari, which gathered data from residents and regional health professionals, this article identifies and examines some of the ways in which climate change and variability impacted the psychological health and well-being as self-reported by research participants. This research stands as a preliminary scoping study exploring the connections between psychological health and climate change from the lived experiences of people in southeastern Bangladesh; as such, it offers potential insights and baseline data to support further research on the impacts of climate change on psychological health for the populations not only in Chittagong but also throughout the southeastern part of Bangladesh.

For the purposes of this article, psychological health is understood to cover a broad territory that includes well-being, everyday problems in living associated with bodily symptoms of stress and anxiety, mild depression, and seasonal fluctuations in mood and energy, as well as more severe psychiatric disorders, such as major bipolar disorder, depression, schizophrenia, and other psychotic disorders (Kirmayer and Valaskakis et al., 2007; Kirmayer et al., 2009b). Psychological health is also mediated by many complex and overlapping factors: the strength and availability of social support networks; economic stability; cultural

E-mail address: smskabir@psy.jnu.ac.bd.

<https://doi.org/10.1016/j.ajp.2018.04.001>

Received 12 January 2018; Received in revised form 30 March 2018; Accepted 1 April 2018
1876-2018/ © 2018 Elsevier B.V. All rights reserved.

practices; physical health; kinship bonds; previous historical events; access to psychological health resources; ability to participate in fishing, hunting, trapping, foraging, and travelling for sustenance and livelihoods; availability of housing; quality of early life; access to education; sense of belonging and self-worth; adaptability and resilience; food security; and previous psychological health challenges (Kirmayer et al., 2009a). In addition, experiences with forced relocation from homelands, decreased socio-political power and status, residential schooling, loss of cultural activities and traditions, and higher-than-average suicide and addictions levels, all combine to increase psychological health risk factors and susceptibility within the Hill Tracks' people (Kirmayer et al., 2009a; Lehti et al., 2009).

2. Methodology

A case study approach (Stake 2005) was selected for this research, given this framework's ability to deeply analyze topics or themes in a locally-appropriate manner and for its ability to access place-based knowledge and wisdom - an attribute that has been identified as particularly important for climate change research (Ford et al., 2010a).

2.1. Selection of study area

Participants were primarily from Chittagong (n = 55), but interviews were also conducted from Cox's Bazar (n = 25), Rangamati (n = 15), Bandarban (n = 20), and Khagrachhari (n = 10) to gain a broader regional perspective, specifically from a psychological health perspective. A random sample was not attempted; rather, the research team interviewed as many people as possible to ensure a wide-ranging sample of voices, experiences, and perspectives.

2.2. Sample size

Data were drawn from 125 individuals in-depth interviews with semi-structure questionnaire (75 females, 50 males) from all ages (10 to over 70 years old) and a variety of backgrounds (teachers, youth, elders, parents, grandparents, business owners, and government officials).

2.3. Data-gathering methods

Data for the study were collected from both primary and secondary sources. Secondary data were collected from books, journals, office records and other published documents. Both quantitative and qualitative data were used to fulfill the objectives of the study. Researchers' observations were also incorporated in the study. The researchers themselves were involved to collect the data. To gather data during different seasons, interviews were conducted over a 22 month period during four main data-gathering points: January/February, April/May, July/August, and October/November from 2015 to 2016. The interviews averaged 45 min in duration and consisted of a base of 45 semi-structured, open-ended questions, conducted in a free-flowing conversational format to allow for participant elaboration, the personalization of answers, and emergent themes (Kvale 1996). These questions were created to gain an understanding of community observations and perceptions of changes in weather patterns, fluctuations in seasonal temperatures, the socio-economic and socio-cultural impacts of these changes, and the participant identified effects of these changes on health and well-being. The community member interviews were conducted in person. Ten health professional interviews were conducted over the phone.

2.4. Data processing and data analysis

Statistical Package for Social Science (SPSS Version-20) program was used for analyzing the data. Simple statistical tools, i.e. frequency,

percentage, central tendency, correlation and regression were used to interpret findings of the study. Data were processed by the researchers themselves.

3. Results

3.1. Psychological health and well-being and climate change

Participants reported that access to work and work-based activities were disrupted due to changes seasonal temperature. Most participants identified that an inability to work due to changing climatic conditions as being incredibly "depressing", "devastating", "frustrating", "scary", "sad", "worrisome" and "extremely stressful". These strong emotional responses led to four interconnected pathways through which climate change was considered by participants to be impacting psychological health and well-being: observed increases in drug and alcohol use; increased family stress; a reported potential for increases in suicide ideation; and the amplification of previous traumas.

3.2. Increases in drug and alcohol usage

Connected to an increase in home-based and familial stress and the increased time spent in the communities and not for work, several participants (68%) self-identified that they themselves, or their family members or friends, were consuming more alcohol or drugs due to a sense of boredom of not being out for work, loss of identity, or lack of purpose.

3.3. Increased family stress

For participants, an inability to go out for work also meant more time spent at home inside with many family members in confined spaces. This combination of emotional responses and being "stuck" in the home led to reports of increased family stress for many of the participants in their own homes (87%) and the homes of others. According to health workers, when people experience more familial stress from not being able to get out for work, there is also a wide-reaching psychological health impact, as the whole dynamic changes in the communities, and people start to carry this stress into other aspects of their lives.

3.4. Increases suicide ideation

75% participants identified that since the observed changes in climate and environment and the subsequent ability to participate in work activities led to feelings of loss of self-worth and value, and when combined with other stressors from previous traumas or life circumstances, there was the potential for increased feelings of suicide ideation for themselves, their family members, or their friends. This potential link was supported by the health workers, although all the health professionals emphasized that making a definitive connection between suicide and climate change and variability was not yet possible and that there were myriad and complex factors involved. The health workers explained that they have observed connections between counseling needs and increased suicide issues during periods of bad weather.

3.5. Magnification of current and previous trauma

68% participants indicated that changes in climate and environment were also compounding other personal, intergenerational, and collective psychological health issues. Resonating with this, health workers explained, when people are unable to spend time for work, they have more time to dwell on the negative, to remember things that felt really trapped and unable to leave. Those kinds of feelings certainly come back and impact on psychological health.

3.6. Psychological health coping strategies

It is important that none of the participants identified any positive psychological health effects from changing climatic and environmental conditions; yet, 83% participants did discuss ideas that could assist with coping with the changes. 92% participants indicated that more time on the work would increase psychological health and well-being while simultaneously building resilience to the observed climatic changes. 61% participants stressed the importance of supporting opportunities for individuals and communities to develop coping mechanisms that are not reliant upon spending time on work. While all the interviewees discussed the negative psychological health impacts of a changing climate, 96% participants explained that it was important to resist giving in to the negative emotions, and consciously develop coping strategies and resources to support psychological strength and resilience and were confident that their community could adapt to the changing environmental contexts.

4. Discussion

This study demonstrates that the psychological health and well-being of individuals in the southeastern part of Bangladesh was directly influenced by the work and the environment, and by the ability of people to regularly and reliably access the land to practice cultural and livelihood activities. Since the work is essential to psychological health and well-being, even subtle alterations in the climate and environment can have dramatic impacts on the psychological health and well-being of residents through direct impacts and by disrupting other underlying determinants of psychological health. For example, participants reported that the emotions associated with current shifts in climate and environment are also re-surfacing in many cases, magnifying a sense of powerlessness and loss of control associated with past traumas. Additionally, with a decreased opportunity to seek solace and healing through work activities, these other personal issues can become even more difficult to manage. In this way, changes in climate and the resulting disruptions to work-based activities interact with the underlying determinants of psychological health and simultaneously directly affect psychological health through impacts. The role of climate change as a magnifier of underlying psychological health vulnerabilities is also consistent with studies in the general human dimensions of climate change (Ford et al., 2010b). This study does not indicate that climate change causes addictions, indicated that there could be relationships between changing climatic conditions, ability to work, and increased use of drugs and alcohol as people look for others ways to fill time or cope with the loss of a lifestyle. Similarly, with suicide, this study certainly does not suggest that climate change causes suicide. Yet, health professionals and community members reported that during periods of poor weather, when people are 'stuck' in the communities, there is an increase in psychological health needs and spikes in suicide-related issues. Since climate change has the potential to prolong these periods and cause conditions which may further disrupt and limit work time, there is a concern among health professionals and community members that when combined with the other psychological health issues in the community, climate change and the associated loss of work to heal and practice cultural activities, could be an additional stressor for suicide ideation. While climate change may be a new stressor for, and determinant of, psychological health in the Southeastern part of Bangladesh, this is not meant to obfuscate the other important psychological health priorities and challenges for communities. While climate change is potentially a very serious threat, often the daily struggles to 'get by' and other on-going psychological health stressors in the communities can take precedence over dealing with the current or potential impacts of climate change. Within a psychological health context, then, climate change should not be thought to take priority over other important issues, but rather be understood as another point of considering an area for further investigation.

This study was exploratory and served to provide a baseline for future research; as such, it is limited in scope, breadth, and generalizability. In addition, since this research is exploratory, the case study did not measure the magnitude, incidence, or prevalence of psychological health impacts or gather data on psychological health disorders. Furthermore, since this study was narrative based, and although the voices and self-reports were compelling and powerful, there are currently no other sources of data with which to compare these results. Since this research was conducted during a 22 month period, it may not be representative of longer-term trends. Despite these limitations, the results from this study stand as the first exploratory case study on climate change and psychological health in the Southeastern part of Bangladesh, and represent the voices and lived experiences of the frontline of a rapidly changing climate. The findings from this study also resonate with qualitative and quantitative studies conducted in past research contexts (Berry et al., 2010, 2011; Dean and Stain 2010; Polain et al., 2011; Rigby et al., 2011; Speldewinde et al., 2009), as well as with the theoretical suggestions from the American Psychological Association (Swim et al., 2010; Doherty and Clayton 2011; Swim et al., 2011); as a result, these results form a strong baseline for moving forward with climate change related psychological health studies in the southeastern part of Bangladesh, as well as globally.

Since this area of study is in its infancy, further research and study are required to gain a complete understanding of the current and possible psychological health impacts stemming from a changing climate. For future studies, it will be important for psychological health professionals, clinicians, researchers, and communities to come together to engage in this work from a multidisciplinary perspective, as well as to employ locally-accepted psychological health terminology and assessment strategies (Swim et al., 2010). Further research is needed into the nuanced relationships among previous psychological health stressors, susceptibility to psychological health issues, and factors of resilience within the context of a changing climate that is stratified by age, gender, and other subpopulations within the communities. More research is also warranted to discover and determine the process of psychological adaptation and psychological adaptive behavior to climate change, and the ways in which adaptation may influence psychological health and well-being (Doherty and Clayton 2011; Reser and Swim 2011; Swim et al., 2011).

5. Conclusion

This study provides a baseline upon which to build further research on the impacts of climate change on psychological health in the Southeastern part of Bangladesh and potentially globally. It is clear from the voices of the Southeastern part of Bangladesh that climate change has impacted psychological health through a variety of pathways and mechanisms. The potential overlap and connection between these areas, then, should also be considered an important area for further investigation and action. Indeed, although we know very little about the climatic determinants of psychological health globally, the findings from this case study highlight the importance of recognizing, studying, and considering the psychological health impacts from a changing climate perspective. These results also demonstrate that climatic change can be recognized as potentially another determinant of psychological health in of itself - a determinant which is likely to affect people in globally. For this, it is an urgent need for addressing these impacts. Policy imperatives to prevent and mitigate these impacts have been suggested. It is hoped that the psychologists, governments, and communities will act earnestly to prevent the impending harm to human psychological health due to climate change.

Declaration

I, Syed Muhammad Sajjad Kabir (SMS Kabir) hereby declare that the research work on "Psychological Health Challenges of the Hill-

Tracts for Climate Change in Bangladesh” has been performed by me and this work has not been submitted elsewhere for any other purpose or interest.

References

- Berry, H., 2009. Pearl in the oyster: climate change as a mental health opportunity. *Australas. Psychiatry* 17, 453–456.
- Berry, H.L., Bowen, K., Kjellstrom, T., 2010. Climate change and mental health: a causal pathways framework. *Int. J. Public Health* 55, 123–132.
- Berry, H.L., Hogan, A., Owen, J., Rickwood, D., Fragar, L., 2011. Climate change and farmer's mental health: risks and responses. *Asia Pac. J. Public Health* 23, 1295–1325.
- Cunsolo, W.A., Harper, S.L., Edge, V.L., Landman, K., Houle, K., Ford, J., 2013. Rigolet inuit community government 'the land enriches the soul': on climatic and environmental change, affect, and emotional health and well-being in rigolet, nunatsiavut. *Can. Emot. Space Soc.* 6, 14–24.
- Dean, J.G., Stain, H.J., 2010. Mental health impact for adolescents living with prolonged drought. *Aust. J. Rural Health* 18, 32–37.
- Doherty, T., Clayton, S., 2011. The psychological impacts of global climate change. *Am. Psychol.* 66 (4), 265–276.
- Ford, J.D., Ford, B.L., King, M., Furgal, C., 2010a. Case study and analogue methodologies in climate change vulnerability research. *Wiley Inter-Discip. Rev. Clim. Change* 1 (3), 374–392.
- Ford, J.D., Ford, B.L., King, M., Furgal, C., 2010b. Vulnerability of aboriginal health systems in Canada to climate change. *Glob. Environ. Change* 20 (4), 668–680.
- Fritze, J.G., Blashki, G.A., Burke, S., Wiseman, J., 2008. Hope, despair and transformation. 1. Climate change and the promotion of mental health and well-being. *Inter-Discip. J. Ment. Health Syst.* 2 (13), 1–10.
- Kirmayer, L., Valaskakis, G., 2007. In: Kirmayer, L., Valaskakis, G. (Eds.), *Healing Traditions: the Mental Health of Aboriginal Peoples in Canada*. UBC Press, Vancouver pp xii–xxi.
- Kirmayer, L., Fletcher, C., Watt, R., 2009a. Locating the ecocentric self: inuit concepts of mental health and illness. In: Kirmayer, L., Valaskakis, G. (Eds.), *Healing Traditions: the Mental Health of Aboriginal Peoples in Canada*. UBC Press, Vancouver, pp. 289–314.
- Kirmayer, L., Tait, C., Simpson, C., 2009b. The mental health of aboriginal peoples in Canada: transformations of identity and community. In: Kirmayer, L., Valaskakis, G. (Eds.), *Healing Traditions: the Mental Health of Aboriginal Peoples in Canada*. UBC Press, Vancouver, pp. 3–35.
- Kvale, S., 1996. *Inter Views: an Introduction to Qualitative Research Interviewing*. Sage, Thousand, Oaks.
- Lehti, V., Niemelä, S., Hoven, C., Mandell, D., Sourander, A., 2009. Mental health, substance use and suicidal behavior among young indigenous people in the Arctic: a systematic review. *Soc. Sci. Med.* 69, 1194–1203.
- Polain, J.D., Berry, H.L., Hoskin, J.O., 2011. Rapid changes, climate adversity, and the next 'big dry': older farmers' mental health. *Aust. J. Rural Health* 19, 239–243.
- Reser, J.P., Swim, J., 2011. Adapting to and coping with the threat and impacts of climate change. *Am. Psychol.* 66 (4), 277–289.
- Rigby, C.R., Rosen, A., Berry, H.L., Hart, C.R., 2011. If the land's sick, we're sick: the impact of prolonged drought on the social and emotional well-being of aboriginal communities in rural New South Wales. *Aust. J. Rural Health* 19, 249–254.
- Speldewinde, P.C., Cook, A., Davies, P., Weinstein, P., 2009. A relationship between environmental degradation and mental health in rural Western Australia. *Health Place* 15 (3), 880–887.
- Stake, R.E., 2005. Qualitative case studies. In: Denzin, N.K., Lincoln, Y.S. (Eds.), *The Sage Handbook of Qualitative Research*, 3rd edn. Sage Publications, Thousand Oaks, pp. 443–466.
- Swim, J., Clayton, S., Doherty, T., Gifford, R., Howard, G., Reser, J., Stern, P., Weber, E., 2010. *Psychology and global climate change: addressing a multifaceted phenomenon and set of challenges. A Report of the American Psychological Association Task Force on the Interface Between Psychology and Global Climate Change.* (June 2) Available at: www.apa.org/science/about/publications/climate-change.aspx.
- Swim, J., Stern, P., Doherty, T., Clayton, S., Reser, J., Weber, E., Gifford, R., Howard, G., 2011. Psychology's contributions to understanding and addressing global climate change. *Am. Psychol.* 66 (4), 241–250.