"It makes us really look inferior to outsiders": Coping with psychosocial experiences associated with the lack of access to safe water and sanitation

Elijah Bisung, PhD,¹ Susan J. Elliott, PhD²

ABSTRACT

OBJECTIVE: This paper explores daily experiences and coping resources related to the lack of access to safe water and adequate sanitation in Usoma, a lakeshore community in Western Kenya.

METHODS: A qualitative approach that involved 10 focus group discussions and 9 key informant interviews with community leaders, volunteers and professionals was used to explore the research objectives. Data were collected from June to August 2013.

RESULTS: Daily practices and experiences around water and sanitation, such as water collection, open defecation and shared toilets, were a major concern to residents. In the absence of safe water, residents used social networks and support, financial resources and the nearby Lake Victoria as coping resources.

CONCLUSION AND IMPLICATION FOR PRACTICE: Findings from this study are important for mobilizing resources in vulnerable settings as a first step towards designing community-based interventions. For public health practice, practitioners must work with – and collaborate across – sectors to enhance and strengthen social networks and cohesion, and protect the natural environment while working toward addressing water-related challenges in deprived settings.

KEY WORDS: Drinking water; sanitation; psychological stress; Kenya

La traduction du résumé se trouve à la fin de l'article.

Can J Public Health 2017;108(4):e442–e447
doi: 10.17269/CJPH.108.5546

Much of the existing literature on the impacts of lack of access to safe water and adequate sanitation has been influenced by biomedical models of health and illness, with strong emphasis on morbidity and mortality outcomes. For example, effects of the lack of access on water-related disease have received significant attention, with a number of systematic reviews focused on diarrhoeal diseases,^{1–3} schistosomiasis,⁴ and child and maternal health outcomes.⁵ Although water-related diseases account for a significant portion (10%) of the global burden of illness,⁶ other social impacts significantly affect the well-being of individuals and communities.^{7,8} In recent years, there has been growing interest in the effects of lack of safe water and adequate sanitation on psychosocial well-being. For example, a number of anthropological studies have drawn attention to links between water and sanitation and various dimensions of psychosocial concerns, including feelings of embarrassment, shame, fear, anxiety, frustration and enhanced vulnerability.^{9–11} These concerns are thought to manifest through a complex process of perceiving, coping with and adapting to threats and risks posed by stressors (i.e., lack of access to safe water and adequate sanitation) in the environment.¹²

Drawing on stress theory, Lazarus and Folkman (1984)¹³ proposed that individual response to an environmental stressor (e.g., contaminated water) is an interactive and iterative process involving two stages: primary appraisal, whereby the individual evaluates the stressor as a threat or risk that can cause harm; and

secondary appraisal, which involves the evaluation or appraisal of coping resources, mechanisms and strategies to deal with the stressor. Thus, resources are important in the secondary appraisal process for assessing one's capability to cope and/or adapt.¹³ Resource appraisal becomes an even higher priority in vulnerable settings where (perceived) lack of coping resources and adequate behavioural and social responses may exacerbate psychosocial concerns. For example, a study by Sahoo et al. (2015)⁹ found that coping with undesirable sanitation conditions, within the context of low resources and lack of agency to solve sanitation challenges, leads to a rise in sanitation-related stress among women in Odisha, India. Further, diverting limited household resources into coping (e.g., buying water from vendors) may result in opportunity costs in terms of reduced savings or resources for other household needs, such as food.¹⁴

In addition, a scoping review conducted by Bisung and Elliott (2016)¹⁵ identified (perceived) inequities in access to safe water and adequate sanitation as a major source of stress. For example,

Author Affiliations

1. School of Kinesiology and Health Studies, Queen's University, Kingston, ON
2. Department of Geography and Environmental Management, University of Waterloo, Waterloo, ON

Correspondence: Dr. Elijah Bisung, School of Kinesiology and Health Studies, 28 Division Street, Queen's University, Kingston, ON K7L 3N6, Tel: 613-533-6000, ext. 745210, E-mail: eb120@queensu.ca.

Acknowledgements: The authors gratefully acknowledge the support of research assistants, and the cooperation of all study participants.

Conflict of Interest: None to declare.

individuals without access often feel neglected and marginalized, particularly where geographical and social disparities in access exist. Such feelings can translate into distrust and annoyance towards officials responsible for water delivery.¹⁵ While the literature on psychosocial stress related to safe water and sanitation is expanding, there is limited understanding of the kinds of coping resources individuals and households draw upon to reduce, cope with, or adapt to such stress, particularly in the context of complex socio-ecological settings in Africa. However, the few studies that exist have identified financial and social capital, as well as migration, water reuse and economization, as important coping resources and strategies.^{16–18}

As the global community gears up to implement the Sustainable Development Goals (SDGs) that are aimed at achieving universal access to safe water and sanitation by 2030, drawing attention to experiences and coping responses will help shape the implementation and evaluation of water and sanitation interventions. For example, while coercive and punitive strategies are increasingly being adopted to promote sanitation interventions and compliance with local sanitation policies, they are often targeted at the poor and those at the margins of society, which could lead to pronounced stress and affect psychosocial well-being.^{19,20} In addition, empowering vulnerable communities – such as urban slum dwellers, rural communities in developing countries, and Aboriginal communities in developed countries that still face water-related challenges – to take action will require adequate understanding of their experiences and coping resources in the context of their everyday living.

This paper draws on environmental stress and coping theory^{13,21} to explore daily experiences and coping resources related to lack of access to water and adequate sanitation in Usoma, a lakeshore community in Western Kenya. The study was part of a Knowledge, Attitudes, Practices and Empowerment (KAPE) project headed by the United Nations University Institute for Water, Environment and Health (UNU-INWEH) and implemented in collaboration with Kenyan Medical Research Institute (KEMRI) and the Usoma community. The project among other objectives seeks to educate and build capacity of local communities around water–health linkages, based on adequate understanding of local water-related perceptions, practices and experiences. As part of the broader research project, we identified feelings of embarrassment and shame, marginalization, anxiety and frustration, and negative place identity as significant psychosocial concerns in the community.²² The current paper builds on this work by exploring commonly used coping resources identified through focus group discussions (FGDs) and key informant interviews (KIIs).

METHODS

Setting

Though located on the shores of Lake Victoria, the second-largest freshwater lake in the world, residents of Usoma had no access to safe water at the time of this study. The nearest tap water source was located about 3 km away from the community. This tap is located on the premises of a Coca-Cola® bottling plant. Water from the tap is generally perceived to be safe, though some

residents complain of heavy chlorination. The majority of residents use water from the lake for cooking and other domestic activities. Further, a significant proportion (42%) of residents practiced open defecation.²³ Water challenges manifest in a wide range of health and social concerns for residents, including diarrheal diseases, physical collection burden, and loss of productive time.^{14,24} It is important to mention that the community gained access to piped water from the Kisumu Water Company after data collection for this study had been completed.

Data collection and analysis

Data were collected in 2013 through focus groups ($n = 10$) and key informant interviews ($n = 9$), enabling the exploration of participants' lived experiences and coping resources related to water and sanitation. Interviews and discussions broadly focused on resources and actions commonly used to cope with or solve water and sanitation challenges. Participants were generally asked to share their experiences and views related to water and sanitation challenges, actions taken to address these challenges, and the nature of coping resources available. Key informants were drawn from the community dispensary, the area chief's office, the Usoma water and sanitation committee, the Usoma community health committee, the school committee, and Usoma Development Community Based Organization. Others included a village elder, a primary school teacher and a local health researcher. These KIs were purposively recruited due to their knowledge about the community as well as their level of community involvement. Of the 10 focus groups, 8 were purposefully organized by age (18–39 and 40+ years) and sex (male/female), resulting in two groups each of young women, young men, older men and older women. The remaining two groups were mixed (i.e., had participants from each age group and sex). Having age- and sex-specific groups created a conducive environment for participants to freely express their opinions. Each focus group had between 8 and 12 participants, who volunteered to participate after a community baraza (community forum) was held to explain the purpose and objectives of the broader KAPE research project. Focus groups were used to complement data from the KIIs, and created space for lay persons in the community to share their views in a group setting. In addition, the group discussions created an opportunity for participants to build on, interrogate and validate each other's ideas and opinions. All FGDs were conducted in DuoLuo (the language widely spoken in the community). However, KI interviews were conducted in English, as this was preferred by the KIs. Signed informed consent was obtained from each focus group and interview participant. The first author facilitated the interviews and discussions, and when required, translation was provided by a research assistant from the KEMRI. All interviews and discussions were audio recorded and transcribed verbatim for subsequent thematic analysis. The study was reviewed and approved by the University of Waterloo Ethics Review Board and the Ethics Review Committee of KEMRI.

Data were manually analyzed using both inductive and deductive coding approaches. Thus, themes and subthemes were allowed to emerge from participants' perspectives, together with others that were deductively coded by thoroughly matching constructs in the data with coping resources identified in the

literature.^{11,15–17} Data abstraction was done by combining subthemes based on convergence on identical constructs and concepts into major conceptual themes.²⁵ These major themes (coping resources) were reviewed against the initial subthemes to identify any discrepancies and make inferences.

RESULTS

Participants shared their views on a wide range of water- and sanitation-related experiences and coping resources. The results reported here focus on the major experiences reported, and three most commonly identified coping resources: social networks and support, financial resources, and Lake Victoria. These coping resources are presented in order of importance based on number of occurrences within KIIs and FGDs.

Daily water and sanitation practices and experiences

Table 1 presents experiences related to four major water and sanitation practices: open defecation, toilet sharing, and water collection from the tap and Lake Victoria.

Coping resources

Social Networks and Social Support

Social support from household members, friends, community members and non-governmental organizations (NGOs) was an important resource for coping with water and sanitation challenges. However, the majority of participants noted social support was missing in the past, partly due to mistrust:

“I see things have improved a bit in this community, people now support each other... even if you don’t have a toilet, neighbours allow you to use theirs.” [Older female, FG]

Though shared toilets were a common practice within social networks, people expected some form of reciprocity from neighbours and friends:

“Yeah, if you see your neighbour constructing a toilet, you have to provide some kind of help. Even if it is helping to make bricks or dig, so that when the toilet is completed you can all use it.” [Young man, FG]

Harmonious family relationships were key to coping with the lack of access to safe water. Such relationships ensured that everyone participated in fetching water. This in turn reduced the water collection burden on women and girls.

“If you have understanding [good relationships] in your family, things work a bit better. Everyone helps in fetching water for the whole family instead of leaving everything for just mothers. Even when we are having community activities or contributions, such families contribute more.” [Young woman, FG]

Beyond the household level, some participants felt activities undertaken at the community level (e.g., contribution of labour towards construction of a community water and sanitation facility) were manifestations of the kinds of support people were willing to offer. An elderly man in a focus group explained:

“At least if our construction activities [referring to the construction of a sanitation block] continue this way, then there is hope. I am hopeful our problems will soon end so am less worried. But you see, it all boils down to the way people

Table 1. Water and sanitation practices and experiences

Water and sanitation practices	Examples of experiences
Open defecation	<ul style="list-style-type: none">• Lack of privacy• Attacks from animals in the bush• Smell from faeces• Concerns for safety/security
Sharing toilets	<ul style="list-style-type: none">• Quarrels over shared cleaning and maintenance• Unable to maintain clean pit latrines
Water collection (tap)	<ul style="list-style-type: none">• Physical burden of water carrying• Long walking distance to pipe water• Forgoing handwashing due to unavailability of water
Fetching water from the lake	<ul style="list-style-type: none">• Difficult to purify due to contamination• Source of water-related diseases• Physical and psychological burden of water carrying

contribute their labour and skills freely to help the contractors. Without such support, we will indeed go nowhere!” [Elderly man, FG]
“Previously if you didn’t have a toilet then it was your own problem. Now everyone understands sanitation-related diseases spreads quickly and affect everyone so the community is coming together to see how best we can tackle it [sanitation problems].” [KI]

Participants also mentioned donations from NGOs as an important resource for coping. Though such donations were not frequent, these participants felt that support from outside organizations reduces the financial burden associated with the provision of safe water.

“Yeah... we sometimes receive small support from NGOs which keeps us going. They come to give us water treatment materials and teach us how to treat water effectively.” [Elderly woman, FG]

Overall, participants were not happy with the level of government support over the years. Some expressed frustration and feelings of marginalization related to this lack of support:

“We have complained many times to government officials but no response. We have now become tired of complaining. Since they don’t care about us, we would keep quiet and think of how to help ourselves.” [KI]

Thus, in the absence of government support, community members were somehow forced to “think of how to help [themselves]”.

Financial resources

The majority of participants also mentioned they often buy clean water from bodaboda (water vendors that use bicycles), albeit with significant financial implications:

“If you have money, you don’t struggle. You just need to buy tap water from bodaboda, but that means if your household is large you may be using over 100 bob [100 shillings] a day on water. How many people can afford that in Usoma?” [KI]

Purchasing water or water treatment products is (relatively) expensive in Usoma. For example, water from vendors costs about 20 shillings [about 0.20 US\$] per 20 L. So the KI above meant a large household will require over 100 L of water a day, which accordingly, is beyond the means of many households. The expenses on water constrain personal choice:

"You have few options when you lack money. I am sure everyone in Usoma knows the benefits of treating contaminated water before drinking, but because most people don't have a reliable source of income they can't afford to treat water all the time." [KI]

Another KI noted:

"The Lake water really looks bad.... You can't drink it without treating. So when I have money I buy WaterGuard [chlorine-based water treatment kit] to treat the water before using. When the money finishes I have no option." [Young woman, FG]

Without financial resources, participants felt their ability to solve environment and health problems in the community is limited. For example:

"This is a good community and very close to the Lake. Everyone is interested in seeing this problem solved but we simply don't have the money. We don't have the money to even build a public latrine as a temporal solution and even dig a good well with sufficient water. If we had good jobs, this problem would have been a thing of the past. Money is very important to deal with the situation." [Young man, FG]

The physical environment (Lake Victoria)

Although Lake Victoria was seen as an important coping resource for the community, the level of contamination was an issue of concern to residents. For example, participants complained about the concomitant cost and difficulty involved in purifying the water. An elderly woman in a focus group noted ... *can you imagine if the lake wasn't around? We would have died of thirst. The water is not good but at least it fills an important gap for us.*

Similarly, a KI noted:

"We are very worried about the water and sanitation situation in this village but the lake is our saviour. We thank God it can't dry up; it can only get polluted. My family buys drinking water from bodaboda and treats the lake water for cooking. But when we run out of money, we solely rely on the lake water."

The importance of lake water transcended water availability to providing other ecological services for the community, such as fishing:

"I tell people not to swim or play in the lake. If we need fish, we go to the lake! If we want water for washing, gardening, cooking, we go to the lake. Until we get a good water source, many of us will continue to depend on the lake." [Young man, FG]

Another elderly woman in a focus group discussion also explained:

"The lake gives us fish and abundant water, but how safe is the water? That is the real problem; the water is contaminated and polluted. It is the major source of schistosomiasis in this

community. For me, drinking it is just a punishment because you never know what will happen to you."

DISCUSSION

In an earlier study conducted in 2011, residents felt that lack of general trust in the community affected efforts towards improving the water situation.²⁴ Interestingly, findings from this study indicate a shift in how people perceive and react to water and sanitation issues. For example, sanitation issues are increasingly regarded as "community problems" as opposed to "individual household problems", and most people contribute their share to finding collective solutions. For example, phrases like *"coming together to see how best we can tackle it [sanitation problems]"*, *"people contribute their labour and skills freely"* and *"people now support each other"* illustrate an emerging sense of collective (re)action to sanitation challenges in the community. These collective efforts have become a source of hope and optimism for many in the community. This shift towards "collectivism" and "cohesion" in part (re)emphasizes the importance of community actions in public health practice and health promotion, particularly in marginalized settings.

In addition, social support remains an important coping resource and mechanism not only in Usoma, but in many other deprived communities. For example, relying on social networks and support during times of water shortages or lack of access have been reported among Arctic communities in Canada,²⁶ and water-scarce communities in Uganda.¹⁶ From such evidence, maintaining strong networks and socially cohesive societies is important for resilience in such communities. Even where access is improved, continued maintenance and sustainability of facilities will require collective efforts and action from community members, which are heavily dependent on strong social networks and support.⁷

In Usoma, continued purchase of water from bodaboda in order to cope had three major implications for households. First, this translated into insufficient quantities of water for households, as many could not buy the required quantities to meet all their household needs. Findings from a photovoice project with women also revealed similar concerns about direct costs and impacts of buying water from vendors.²⁴ Second, in circumstances where water becomes insufficient, the ability to follow hygiene and other public health guidelines becomes very difficult.¹⁴ Daley et al. (2014) report similar concerns even in a developed country context.²⁶ Their study on trucked water distribution systems in Inuit and other Arctic communities in Canada revealed limited ability among families to follow health standards as a result of water shortages.²⁶ Third, buying water from bodaboda has impacts on household savings and concomitant ability to fulfil other household needs, such as education and food.¹⁴ Thus, the current water situation directly affects household incomes as well as the ability of households to invest in other social determinants of health, such as education, food and housing.

Our findings emphasize the need for practitioners and researchers to always account for the multiple influences and meanings of water resources (e.g., lakes, dams, rivers, etc.) on health and well-being of populations. This is important, as individuals may perceive characteristics (of the same environmental resources) as both a stressor and a resource.²⁷ In

this study, Lake Victoria was an important coping resource and a stressor because residents had concerns with the level of pollution. Yen et al. (2007)²⁸ refer to such attributes or phenomena in the natural environment as a “resource-hazard conflict”. Reconciling such conflicts in Usoma and other lakeshore communities will require policy interventions to both curb pollution and eliminate reliance on the lake as a drinking water source.

The impacts of lack of access to water and sanitation are disproportionately felt and unequally distributed in many communities. Whether such impacts are related to water carrying, disease burden or open defecation, women, girls and children bear the greatest burden. The literature on psychosocial concerns also indicates that these impacts are likely to be more pronounced among women than men.^{10,15,18,22} Thus, in circumstances where water and facilities are limited, interventions should target at-risk and vulnerable groups (e.g., women and children), as they stand to be greatly affected in terms of deteriorating physical and mental health.

There are some limitations to our study worth noting: 1) Experiences and coping resources were captured in focus groups and KI interviews. This limits the generalizability of findings to the entire Usoma community or indeed other lakeshore communities. Future studies that employ other data collection techniques (e.g., surveys) will be helpful in this regard. 2) Since KIs were purposively selected, their views may not represent the diversity of opinions in the community. 3) Experiences and coping resources related to water used to support livelihood activities (e.g., livestock or gardening) were not explored. This research focused on water for household drinking, cooking and hygiene. However, water for animal rearing (e.g., cattle, goats, sheep and chicken) is very important for many households in Usoma, and has serious implications for household food insecurity and well-being.

CONCLUSION

This research highlights interconnections between environment and health in a Kenyan lakeshore community. Elsewhere, research has shown that the poor are managers of varied and complex asset portfolios and resources, similar to those reported here, which they draw upon to cope with and address water and sanitation challenges.^{11,16} Greater understanding of these resources can contribute to the development of appropriate analytical tools to facilitate the design and implementation of community-based water and sanitation interventions. While the findings reported here are specific to Usoma, they are important for understanding the types of community and household resources that can be harnessed for water interventions in other lakeshore or vulnerable communities with similarly socio-ecological settings. However, we recognize that differences in culture and resource endowment may limit the transferability of these findings to other settings.

While individuals and communities that lack access to water and sanitation may share similar psychosocial concerns, distinct cultural and environmental conditions may result in differences in responses and types of coping resources needed. Thus, public health programs or interventions should take these contextual differences into consideration. Also, given the subjective and place-based nature of water-related psychosocial stress and resources, we suggest that researchers and practitioners work across sectors, and focus on how conditions in specific settings (community or cluster

of communities with similar environmental challenges) rather than ecological analysis at a higher (national) level, shape experiences of stress among different age and sex groups. This will provide better and context-appropriate evidence for public health policy and practice. Finally, it is important to note that resources were mostly used concurrently and could influence coping through complex pathways. Understanding the complementary effects at different levels is important for designing water and sanitation interventions and effecting change.

REFERENCES

1. Wolf J, Pruss-Ustun A, Cumming O, Bartram J, Bonjour S, Cairncross S, et al. Assessing the impact of drinking water and sanitation on diarrhoeal disease in low- and middle-income settings: Systematic review and meta-regression. *Trop Med Int Health* 2014;19:928–42. PMID: 24811732. doi: 10.1111/tmi.12331.
2. Gundry S, Wright J, Conroy R. A systematic review of the health outcomes related to household water quality in developing countries. *J Water and Health* 2014;2:1–13. PMID: 15384725.
3. Wang X, Hunter PR. A systematic review and meta-analysis of the association between self-reported diarrheal disease and distance from home to water source. *Am J Trop Med Hyg* 2010;83:582–88. PMID: 20810824. doi: 10.4269/ajtmh.2010.10-0215.
4. Grimes JET, Croll D, Harrison WE, Utzinger J, Freeman MC, Templeton MR. The relationship between water, sanitation and schistosomiasis: A systematic review and meta-analysis. *PLOS Negl Trop Dis* 2014;8(12):e3296. PMID: 25474705. doi: 10.1371/journal.pntd.0003296.
5. Benova L, Cumming O, Campbell MRO. Systematic review and meta-analysis: Association between water and sanitation environment and maternal mortality. *Trop Med Int Health* 2014;19(4):368–87. PMID: 24506558. doi: 10.1111/tmi.12275.
6. Prüss-Ustün A, Bos R, Gore F, Bartram J. *Safer Water, Better Health: Costs, Benefits and Sustainability of Interventions to Protect and Promote Health*. Geneva, Switzerland: World Health Organization, 2005.
7. Bisung E, Elliott SJ. Toward a social capital based framework for understanding the water-health nexus. *Soc Sci Med* 2014;108:194–200. PMID: 24657901. doi: 10.1016/j.socscimed.2014.01.042.
8. Ball AM. Making the connections: AIDS and water. *Can J Public Health* 2006; 97(1):S6–S9. PMID: 16512330.
9. Sahoo CK, Hulland RSK, Caruso AB, Swain R. Sanitation-related psychosocial stress: A grounded theory study of women across the life-course in Odisha, India. *Soc Sci Med* 2015;139:80–89. PMID: 26164119. doi: 10.1016/j.socscimed.2015.06.031.
10. Stevenson EGJ, Greene LE, Maes KC, Ambelu A. Water insecurity in 3 dimensions: An anthropological perspective on water and women's psychosocial distress in Ethiopia. *Soc Sci Med* 2012;75(2):392–400. PMID: 22575697. doi: 10.1016/j.socscimed.2012.03.022.
11. Wutich A, Ragsdale K. Water insecurity and emotional distress: Coping with supply, access, and seasonal variability of water in a Bolivian squatter settlement. *Soc Sci Med* 2008;67:2116–25. PMID: 18954928. doi: 10.1016/j.socscimed.2008.09.042.
12. Baum A, Grunberg NE, Singer JE. The use of psychological and neuroendocrinological measurements in the study of stress. *Health Psychol* 1982;1(3):217–36. doi: 10.1037/ijomh.1896.00208.
13. Lazarus RS, Folkman S. *Stress, Appraisal, Coping*. New York, NY: Springer, 1984.
14. Bisung E, Elliott SJ, Schuster-Wallace CJ, Karanja DM, Abudho B. “Dreaming of toilets”: Using photovoice to explore knowledge, attitudes and practices around water-health linkages in rural Kenya. *Health Place* 2015;31:208–15. PMID: 25576836. doi: 10.1016/j.healthplace.2014.12.007.
15. Bisung E, Elliott SJ. Psychosocial impacts of the lack of access to water and sanitation in low- and middle-income countries: A scoping review. *J Water and Health* 2016;15(1):17–30. PMID: 28151436. doi: 10.2166/wh.2016.158.
16. Pearson AL, Mayer JD, Bradley DJ. Coping with household water scarcity in the savannah today: Implications for health and climate change into the future. *Earth Interact* 2015;19:1–14.
17. Adeniji-Olukoiki G, Urmilla B, Vadi M. Households' coping strategies for climate variability related water shortages in Oke-Ogun region, Nigeria. *J Environ Dev* 2013;5:23–38. doi: 10.1016/j.envdev.2012.11.005.
18. Mukuhani T, Nyamupingidza TM. Water scarcity in communities, coping strategies and mitigation measures: The case of Baluwayo. *J Sustainable Dev* 2014;7(1):144–60. doi: 10.5539/jsd.v7n1p144.
19. Hirve S, Lele P, Sundaram N, Chava U, Weiss M, Steinman P, et al. Psychosocial stress associated with sanitation practices: Experiences of women in a rural community in India. *J Water Sanit Hyg Dev* 2015; 5(1):115–26. doi: 10.2166/washdev.2014.110.

20. O'Reilly L, Louis E. The toilet tripod: Understanding successful toilet adoption in rural India. *Health Place* 2014;29:43–51. PMID: 24954614. doi: 10.1016/j.healthplace.2014.05.007.
21. Evans GW, Cohen S. Environmental stress. In: Stokols D, Altman I (Eds.), *Handbook of Environmental Psychology*. New York, NY: Wiley, 1987; 571–610.
22. Bisung E, Elliott SJ. “Everyone is exhausted and frustrated”: Exploring psychosocial impacts of the lack of access to water and adequate sanitation on wellbeing in Usoma, Kenya. *J Water Sanit Hyg Dev* 2016;6(2):205–14. doi: 10.2166/washdev.2016.122.
23. Bisung E, Elliott SJ, Schuster-Wallace CJ, Karanja DM, Abudho B. Social capital, collective action and access to water in rural Kenya. *Soc Sci Med* 2014; 119:147–44. PMID: 25181474. doi: 10.1016/j.socscimed.2014.07.060.
24. Levison MM, Elliott SJ, Karanja DM, Schuster-Wallace CJ, Harrington DW. You cannot prevent a disease; you only treat diseases when they occur: Knowledge, attitudes and practices to water-health in a rural Kenyan community. *East Afr J Public Health* 2011;8:103–11. PMID: 22066295.
25. Miles M, Huberman AM. *Qualitative Data Analysis*. London, UK: Sage, 1985.
26. Daley K, Castleden H, Jamieson R, Furgal C, Ell L. 2014 Municipal water quantities and health in Nunavut households: An exploratory case study in Coral Harbour, Nunavut, Canada. *Int J Circumpolar Health* 2014;73:1–10. PMID: 24765615. doi: 10.3402/ijch.v73.23843.
27. Shankardass K. Place-based stressors and chronic disease: A systems view of environmental determinants. In: O'Campo P, Dunn JR (Eds.), *Rethinking Social Epidemiology: Towards a Science of Change*. New York, NY: Springer, 2011; 113–36.
28. Yen HI, Scherzer T, Cubbin C, Gonzalez A, Winkleby AM. Women's perceptions of neighborhood resources and hazards related to diet, physical activity, and smoking: Focus group results from economically distinct neighborhoods in a mid-sized U.S. city. *Am J Health Promot* 2007;22(2): 98–106. PMID: 18019886. doi: 10.4278/0890-1171-22.2.98.

Received: February 25, 2016

Accepted: July 26, 2017

RÉSUMÉ

OBJECTIFS : Notre article explore les expériences quotidiennes et les ressources d'adaptation liées au manque d'accès à l'eau salubre et à un assainissement adéquat à Usoma, un village lacustre dans l'Ouest du Kenya.

MÉTHODE : Nous avons utilisé une approche qualitative impliquant 10 groupes de discussion et 9 entretiens avec des informateurs (dirigeants communautaires, bénévoles et professionnels) pour explorer nos objectifs de recherche. Les données ont été recueillies entre juin et août 2013.

RÉSULTATS : Les pratiques et les expériences quotidiennes en lien avec l'eau et l'assainissement, comme la collecte des eaux, la défécation à ciel ouvert et les toilettes communautaires, étaient des sources de préoccupations majeures pour les résidents. En l'absence d'eau salubre, ceux-ci faisaient appel à leurs réseaux et soutiens sociaux, à leurs ressources financières et au lac Victoria voisin comme ressources d'adaptation.

CONCLUSION ET CONSÉQUENCES POUR LA PRATIQUE : Les constatations de cette étude sont importantes pour mobiliser des ressources en milieu vulnérable avant de commencer à concevoir des interventions communautaires. Pour exercer la santé publique, les praticiens doivent travailler avec différents secteurs – et assurer une collaboration intersectorielle – afin de rehausser et de renforcer la cohésion et les réseaux sociaux et de protéger le milieu naturel tout en travaillant à relever les défis liés à l'eau en milieu défavorisé.

MOTS CLÉS : eau de boisson; assainissement; stress psychologique; Kenya