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***Water Crisis in Uganda, Nicaragua, Ghana, and India and the effects on
women and children***

Background

Accessing clean and pure water is a crisis for women and families all over the world. Developing and finding resources for families to survive for drinking and sanitation has been detrimental to women's health. In certain parts of the world, women and young children have to travel far and wait in long lines in order to retrieve the buckets of water. Without the proper resources to receive the water, this can lead to the fatality of women and their families. Additionally, consuming the dirty water can lead to illnesses, infections, and potentially death for women. ¹According to the Water Organization, "today women around the world will spend a collective 200 million hours collecting water. This makes up an additional 266 million hours of time each day lost because they have no toilet at home." ¹ Due to women spending so much of their time and resources to collect water, this can lead to limited time for work, school, or families to take care of. The importance of access to safe water is critical to the development of women's health. ¹ Many pregnant women who gain access to dirty water and consume this water can lead to the harmful health of the baby and the mother. Women do not have the right nourishment to take care of their child due to lack of safe water. ¹ In addition to this, pregnant women who have to travel far to retrieve water are risking the heavy weight of water cylinders and can lead to a dangerous impact for the woman and baby. For some women, the water access to clean water is the responsibility of the woman for her household. ¹Not being able to find clean access to water limits the family's resources to survive.

²According to the World Vision, “on average 72% of household water is collected by women and 14% by children.” ² Diseases such as diarrhea can be caused by the lack of proper clean water and leads to malnutrition and health issues. ² Majority of women spend their time focusing on their child’s health and money on medicines to treat these illnesses. ² It is essential that women in developing countries are able to have easy, clean access to water to help reduce these disparities in women’s health. ² Some women are not able to have the ease of access to toilets and this causes women to hold onto their bodily fluids, which can lead to chronic health issues. ⁴ For example, the country Eriteria in East Africa has the least access to clean water. ⁴ There are limited resources for household sanitation and sources of water are destroyed with human and animal waste. ⁴ Additionally, deforestation has caused the water pollution to severely destroy water sources. ⁴ Moreover another example of this concern is that Somalia lacks 60% of basic water services. ⁴ Lack of clean water in Somalia has lead to high rate of water-related diseases. ⁴ This mostly affects children and women in Somalia. ⁴ Due to environmental issues such as droughts and floods, have caused people to move to areas where there are not basic needs for sustainability.

In regards to bioethical concerns, the lack of access to clean water raises the issues of environmental ethics. ³ The ethical challenges that arise due to access of water are the instrumental value of the world. ³ As humans, we use water for our daily needs and if there is contamination or water loss we must address those concerns. ³ The principle of sustainability also requires attention. ³

The rate of human induced water loss and contamination not exceed the ability of the water source to cleanse and replenish itself.³ The moral principle of sustainability discusses that knowing the support and value of water is an unsustainable loss and contamination for a water source violates the intrinsic value of water. Additionally, human rights are violated when there is a water crisis and people are not able to receive that access to clean water.³ Access to clean water is a moral right for individuals and the well being of a community.³ Principle of beneficence and the principle of common good apply to this situation.³ It is the moral responsibility as humans that there should be equal responsibility to support access to clean water and enhance natural resources for our community.³ Women are responsible in certain cultures to bear the responsibility of clean water. This raises the concern of women not being able to go to school or learning opportunities to educate themselves. This raises the bioethical concern of justice.³ This principle focuses on determining the equal distribution of resources and treatments for the development of women's health.³ The development of women's health for access to clean water violates the principle of justice. Women are passed down this responsibility for finding water that they miss out on other opportunities to develop themselves compared to men.

This paper will discuss a sample of four developing countries: Uganda, Nicaragua, Ghana, and India and their issues with lack of access to clean water. In addition to this, an analysis on how policy recommendations have developed over time for women and families to have the access to clean water will be discussed.

Uganda water crisis

⁵ Over 23 million people do not have access to clean water for their care. ⁵ A majority of the land of Uganda is a swamp area where the water cannot be consumed by women and their families. ⁵ The high demand of clean water and poor management of the clean water causes rural communities to suffer because most of the water wells are consumed immediately. ⁵ Most of the clean water travels towards the facilities in cities and towns. ⁵ Due to the dirty water and limited resources for a bathroom, this causes severe infections for women and children. ⁵ Under the age of 5, over 4,500 children die from diarrhea. ⁵ In addition to this 8 in 10 people do not have the basic access to a toilet. ⁵ Women with disabilities are not able to sit on the toilets and have to use rural fields to go to the bathroom. ⁵ In addition to not have clean water to cleanse them, this leads to women gaining severe vaginal infections. ⁶ Many schools and facilities of work for women and female children do not have the resources to develop adequate toilets with privacy. ⁶ The girls do not have access to sanitary pads or cleaning facilities. ⁶ Due to this issue, girls and women have to skip school or work and stay at home during the difficulty of having their period. ⁶ Women and children do not want that cultural shame of having their period out in public causing them to stay at home and missing important events for their development.

⁷ According to the United Nations, "In 2016, one third of all primary schools lacked basic drinking water, sanitation and hygiene services, affecting the education of millions of schoolchildren, but particularly girls managing menstruation, and one in four health-care facilities worldwide lacked basic water

services, affecting more than 2 billion people.”⁷ The access to safe water and development of hygiene can reduce risks of infections and deaths of mothers and infants.⁷ Women often have to avoid using the bathroom by dehydrating themselves because there are limited resources for water and sanitation.⁷ Additionally, the lack of privacy for women and young girls without a toilet results in them having to wait till it is dark outside to use the restroom in the fields.⁷ This also leads to the fear for women and children because they are exposed to attacks from wild creatures and potential opportunity to be raped.⁷ Women are hurting themselves by not using the restroom, which leads to urinary tract infections, and damage towards the kidney.

Bioethical Concerns for Women in Uganda

The principle of confidentiality and privacy is violated towards women and young children. Due to the lack of adequate resources such as toilets and sanitation this addresses the concern of privacy for women. Women do not have the opportunities to use the restroom because these toilets are not up to date and do not provide the right set up for women to go. In addition to this, this violates privacy because women have to wait until dark to go to the restroom in the fields. This raises the concern of the principle of vulnerability. This makes women more vulnerable to severe infections or wild animal attacks. In addition to this, women fear the cause of rape attacks on them due to it being late at night.

Principle of justice is also a concern because women and young female children have to miss work or school because they cannot have their periods in these settings. These classrooms or work conditions do not have the resources

for sanitation pads or privacy of restrooms to provide the care they need. This is also a violation of individual rights. Women and young female children have to suffer their rights because they are responsible for collecting water from wells with a large proximity to their houses. Women have to sacrifice their daily activities to provide clean water for their family. Additionally, the lack of clean water violates individual rights to use dirty water. This contaminated water causes women to have infections and can harm a pregnant woman and the baby. This violates the principle of beneficence. This principle relates to the governing body of Uganda because these leaders are not providing the resources or promoting goods or services to help women. The lack of easy access to clean water and toilet resources causes women to not have the opportunity to get the care they deserve.

The principle of beneficence is violated for women and needs to be addressed immediately in Uganda. Women do not have simple means of sanitation pads and without the right resources women are having severe infections due to their period. This issue also causes young female children to miss school and stay at home because these schools are not equipped to address female needs. This causes women to stay at home and miss school, which is detrimental to their education.

Policy Recommendations in Uganda

⁸To address these disparities for women and the lack of access to clean water and sanitation, the Women's Health Foundation Uganda was registered to address these concerns. ⁸ This organization has created community clinics to

address the health issues such as disabilities, musculoskeletal conditions, women's health exercises, and neurological issues and provide women with these resources. ⁹ The Water.Org organization has created Water Credit solutions in Uganda in 2013. ⁹ The sanitation products and water demands have grown significantly to develop these resources for women and families. ⁹ This organization has been collaborating with commercial banks to increase funds to deliver clean water and sanitation. ¹⁰ The Uganda Women's Water Initiative has worked with women of Uganda to develop the contaminated water into clean water for people to drink. ¹⁰ In Gomba, Uganda, women were trained to build rainwater-harvesting tanks and Bio sand filters. ¹⁰ This filter of sand and gravel provides an opportunity to remove 99% of bacteria from the contaminated water. ¹⁰ The Aveda and Green Grants programs funded this. ¹⁰ These programs have created information sessions to educate women and children on proper sanitation. ¹⁰ This program has reduced children from diseases such as typhoid and infections such as diarrhea from school settings. ¹⁰ This has led to a decrease in absences for children by two-thirds. ¹⁰ The Geneoristy.org has created rehabilitation boreholes by working with the District Water Departments in the communities of Uganda. ¹⁰ This project has been able to create infrastructures to fix boreholes that currently exist in Uganda but also to drill new boreholes in barren areas. ¹⁰ This has provided an opportunity to decrease the water crisis for women and families in Uganda. ¹⁰ The Uganda government has been working with United Nations and other world leaders to address the water crisis. ¹⁰ The Uganda leaders have addresses that water is a basic human right

and the society needs to develop sanitation systems that are crucial for health and the economy.¹⁰ The government has been working on projects to improve sanitation and water for everyone by 2030.¹⁰ The plans to invest in quality water infrastructures and restoring clean water sources have developed in these families.

Nicaragua Water Crisis

¹¹ This Central American country has the most abundant water resources but has most recently been suffering one of its worst water crises due to climate change, deforestation, and erosion.¹¹ The shortage of water is a nationwide issue and threatens animals and 6.1 million inhabitants in rural populations.¹¹ Arístides Álvarez, who is a member of the non-government network of Portable Water and Sanitation Committees, discussed that the rural areas of Central and Western Nicaragua have thousands of families that depend on the wells and rivers that have dried up over time.¹¹ Álvarez continued to discuss, “Today people have to walk long distances to find water, and those who can afford it buy water from farmers who have wells on their properties.¹¹ The problem is that not everyone can afford to buy both water and food. Some soil erosion experts like the International Center for Tropical Agriculture have reported that Nicaragua’s soil has been eroding at an irreversible rate.¹¹ This has led to the issue of converting the forestland into pastureland for grazing.¹¹ The soil loss in Nicaragua has reached four tons, which has caused water to not pass through effectively for citizens of these communities.

¹² In Nicaragua, one-third of the rural population live without any access to water sources and many families do not have plumbing in their homes. ¹² This leads to these families refilling their buckets of water from contaminated streams and wells. ¹² There are visible contaminants of insects and debris in the water. ¹² The water that appears as clean has been contaminated with pesticides from local farms. ¹² This lack of sanitation causes families to consume this water to face high risk of infections and illnesses. Nicaragua is unfortunately at a high risk of waterborne diseases such as Hepatitis A and Typhoid fever. ¹² Open sources of water are contaminated with mosquitoes and other insects, which can cause dengue fever or the Zika virus. ¹² Many women and their families have issues such as diarrhea and kidney problems. ¹² Children under the age 5 usually pass away due to the diarrhea diseases because of the contaminated water. ¹² Hospitals and medical care are usually a far stretch for families to travel to. ¹² There are limited amount of physicians and nurses to provide the care for such a high demand of patients. ¹² Many women and families have to travel miles to get minimal care.

¹³ Water sanitation is important for pregnant women but due to the contaminated water this can lead pregnant women to face sepsis. ¹³ Due to lack of clean water, women have to face unhygienic practices of cleanliness such as unclean surfaces, vaginal exams, or lack of simple hand washing. ¹³ These unhygienic practices and lack of access to clean water result in women having to face severe illnesses and harm to the baby. ¹³ If a woman gets sepsis due to these conditions, this can lead the women to have hernias and an increased risk

of spontaneous abortion. ¹³ In addition to this, women are the household leaders for collecting food and water resources for the family. ¹³ When pregnant women have to travel miles and carry heavy buckets of water, this results in a detrimental amount of stress on the baby and the mother. ¹³ This leads to concerns of receiving proper care for pregnant women.

Bioethical Concerns for Women in Nicaragua

The principle of justice is of concern for women in Nicaragua. Women do not have the necessary means to receive the care that they need in order to sustain the living areas they are in. Women who are pregnant do not have resources to visit a doctor's office to get the basic care that they need. Women have to travel miles just to get a simple check-up visit. This concern leads to an ethical concern of women not being able to have the ease of access to care. ¹⁴ Women of these rural areas have the lowest access to healthcare and 43% of the Nicaragua population lives in rural areas. ¹⁴ This is due to lack of access and funding for medical professionals to work in these areas. Women are not able to get the care they need when they are pregnant due to the infections caused by the contaminated water. After having such infections and not being able to access a doctor for the care they need, this leads to detrimental issues of the baby and the mother. ¹⁴ Maternal health is an issue in the Nicaragua health system and maternal mortality is high compared to other Latin American and Caribbean countries. ¹⁴ In rural areas, there is a lack of patient autonomy and individual rights. Women have no medical professionals present at home where the mother is delivering a baby herself. ¹⁴ This leads to an issue of patient

autonomy because the patient is being suppressed from the limited resources that they have. Women are not being able to get the care that they deserve and conducting at home births without any medical professionals is concerning for the state of the health of the woman.

In addition to this, the principle of justice and the principle of beneficence are being violated for women and families in Nicaragua. There are a scarce amount of healthcare providers in Nicaragua. This is due to the fact that physicians and other healthcare providers do not receive enough in compensation to travel to rural communities and provide care. This results in a violation for people in these rural communities to get the proper care that they deserve. These individuals are met with adverse conditions to travel and have to spend a lot of time and money to travel and then see a physician. This is a daunting process for families since they cannot receive care immediately. In fact, this results in a process of women taking care of their families at home without any medical professional expertise. Principle of justice is also violated because there needs to be a fair distribution of resources and services for people. In rural communities, women have to travel far to get access to clean water and then have to travel back to provide and cater for their families. This results in a stressful period for women because they have to struggle through adverse weather conditions and heavy weight for water access. The immediate water wells contain contaminants that are risky for the health of families. In addition to pregnant woman, this is a violation of justice because women have to carry the heavy weight of water in buckets but also have to make sure that they baby is not

injured or hurt in the process. This in turn results in lack of resources for women to get that care.

Policy Recommendations in Nicaragua

There are many organizations that have taken on the opportunity to provide the access to care for women and their families for rural communities of Nicaragua to get that care. ¹⁵ For example, the Water Aid Organization has been working with the government of Nicaragua to install public hand washing stations and developing public transit hubs and farmers markets. ¹⁶ In regards to this, the Cross Catholic Outreach partners have worked with ministries in Nicaragua to provide families of rural communities with access to clean water. ¹⁶ Individuals from this organization have installed drilled wells and developed water filtration systems such as pumps that can deliver water directly to rural community households.

¹⁷ Another organization that has collaborated with the Nicaragua government is the Water For People organization. ¹⁷ This organization has constructed piped water systems and work with the government officials to keep the systems updated and regulated. In addition to this, the organization has collaborated with members of these communities to learn about tariff collection, water quality and treatment, protection of watersheds, and system maintenance and monitoring. ¹⁷ They have built two water treatment plants that use basic technology and use limited amount of resources to operate and cleanse the water quality. ¹⁷ The organization has created the sanitation improvement approach. ¹⁷ This organization was created through local partnerships and

microfinance institutions to train to offer loans for sanitation improvements.¹⁷ Small loans of these have helped families to afford bathrooms and invest in proper sanitation.¹⁷ Schools have been built new infrastructure for restrooms and safe drinking water through the Hygiene Corners in Classrooms initiative.¹⁷ This allows teachers to integrate hygiene activities in their daily lessons.¹⁷ This new water and sanitation program in schools have helped to develop new infrastructure and train parents and students to utilize these resources effectively.

¹⁸ To address women health crisis in Nicaragua, the World Bank of Directors approved a US \$10 million loan for improving health services for family and community care for rural communities in Nicaragua.¹⁸ This project is an opportunity to develop and gain ease of access to health services for children, pregnant, and adolescent women in rural communities.¹⁸ Women have received post-natal care and over 7% of births attended by trained health staff have grown since 2014.¹⁸ Over 95% of children are vaccinated and 65% of pregnant women are receiving pre-natal care.¹⁸ Sonia Castro, Nicaragua's Health Minister stated, "Service delivery to the Nicaraguan population is based on the Family and Community Health Model, with collective strategies such as the creation of Maternal Houses, which have strengthened primary care and resulted in a reduction of maternal deaths and/or complications during childbirth. This is a strategy where women contribute, the community contributes and organizations contribute." This is a growing concern for women during childbirth that are not able to gain the proper resources for care and assistance during this process.

¹⁹ In regards to strengthening opportunities for women health services, the Global Health Partners has created a partnership with Nicaragua's Ministry of Health to develop the public health system. ¹⁹ The organization has created food and medicines for disaster relief by sustaining 5,000 people for 30 days. ¹⁹ The medical and survival supplies are placed in strategic locations throughout the country if there are no hurricanes to disrupt these placements. ¹⁹ Additionally, the ministry has worked on providing lifesaving supplies to clinics to help children and women's health. ¹⁹ The organization has shipped over \$15,200,000 in medicines and supplies for urban and rural clinics throughout Nicaragua. ¹⁹ The other project that has been worked on in Nicaragua is the Skills to Save Lives project. ¹⁹ This project is aimed to reduce the high maternal death rate of women in the most adverse conditions. ¹⁹ Women in Nicaragua do not have access to water or assistance from skilled health professionals for maternal care. ¹⁹ Due to lack of transportation and local healthcare facilities, women are isolated when it comes to getting care. ¹⁹ This partnership has been developed to identify high-risk pregnancies and provide these women with safe and sanitary birthing conditions. ¹⁹ This initiative became a National Ministry of Health program to develop in underserved areas of the country.

Ghana Water Crisis

²⁰ Water supply has been a scarcity in Ghana and sub-Saharan regions of Africa. ²⁰ Over 40% of populations in Ghana do not have safe drinking water. ²¹ A study conducted by UNESCO World Water Assessment Program in 2019 estimated women in 25 sub-Saharan African countries spend more than 16

million hours daily to collect water. ²⁰However, men only spend 6 million hours to collect water. ²⁰Specifically in Ghana, around 38% of the population in Ghana do not have portable water and have disparities of water between the urban and rural community populations. This lack of opportunity to receive water plays a heavy burden on women and young girls in the Ghana culture. ²⁰This plays a burden on these women because they are primary retrievers of portable water and is a part of their cultural norms. This is a responsibility for women and young girls to be a main part of the household for their families.

²⁰In addition to this, Ghana's primary source of income is subsistence agriculture. ²⁰Subsistence agriculture is a primary resource and income for many families. ²⁰Families spend hours of their day ensuring the produce that is being delivered is utmost, high quality and can make a profit from this agriculture. ²⁰Unfortunately, these areas experience short rain seasons and has a long dry weather season. ²⁰The water supplies in Ghana, such as, the rivers, boreholes, and rainwater end up drying up during these long dry seasons. ²⁰The technology used in Ghana such as the rooftop harvesting for rainwater are scarce throughout the region and difficult to retrieve during the dry seasons. ²¹ According to a survey conducted by UNESCO, that was conducted in Ghana regarding water conservation, around 65% of women who took the survey stated that they spend 3-4 hours traveling to retrieve water for the family.

The gender roles for retrieving water and conducting agriculture is heavily placed on women. ²⁰ The cultural role puts a heavy pressure on women and young girls to make the income for their family. ²⁰ When there is a water

shortage, there is heavy stress on the family and women are generally staying up late in the farm for agriculture.²⁰ Women do not have access to transportation to fetch water from far away water wells.²⁰ In addition to this, during menstruation women have to have a different container for water for their own personal use. Women have to gain enough water for the men of the households before their period begins. It is against social norms and looks poorly on women and men if men drink water collected by women who are on their period. This is strictly taboo in culture of Ghana. Younger family members end up moving away from their older family members to earn a living through agriculture and collect pure water for the families.

Bioethical Concerns for Women in Ghana

The first bioethical concern for women in Ghana is the right to human dignity and privacy. With the lack of sanitation and carrying the heavy burden on young women and their health is detrimental to the condition of their health. There is lack of clean access to water to help assist the needs of women and their family members. There is a lack of the principle of human dignity because women have to travel miles and hours to retrieve enough water for their husbands but also enough water for personal hygiene. There is a bioethical concern of human rights and access to water. This is a true concern because the right to water is a right for everyone. No one person should suffer from not having an adequate amount of pure water and having to fetch water from shallows or boreholes for water. This is concerning because it is a lack of human rights to clean water. This issue needs to be addressed as many families in Ghana are

suffering from starvation and dehydration from lack of clean water. This has also increased issues from diseases and waterborne illnesses from the lack of purified water.

The second bioethical concern for women in Ghana is the principle of justice. There is a lack of fair distribution of scarce resources such as water. This violates opportunities for women to gain quick and clean access to water. Women and young children have to travel hours to get the water that they need. In regards to this, this is a bioethical concern for young girls and men. In this instance in Ghana, young girls and men have to move far away from their families in order to get the resources needed in other communities. Due to this concern, this is a violation on justice for families because they are being separated away from their family members in order to get the resources they need to survive. This is a violation of competing goods, rights for access to resources, and the treatment for families is not equal to gain water access. The access to water is not equally available to all women and families. Due to cultural barriers, women are faced with the stress of gaining water for their families. This is a heavy burden on women if they cannot retrieve water immediately, which is of concern to the well being of the family. The opportunity to develop their agriculture business is just as huge of a concern because this is a family's resource for income and with the dry spells of weather there is lack of proper produce for agriculture.

Policy Recommendations in Ghana

²² The Water.Org organization has been partnering up Ministry of Sanitation and Water Resources, World Bank, Safe Water Network, and Water and Sanitation for the Urban Poor. ²² Over \$3.1 million of loans have been distributed by these partnerships to provide safe water and sanitation in Ghana. ²³ The WaterAid organization has created a water kiosk for various communities in Ghana. The water kiosk is made from concrete and steel to provide clean water without having to travel to far dams or wells. ²³ These new kiosks will sell water at an affordable price for the communities. ²³ The revenue from this water kiosk is going towards the new clean water supply for long-term commitment for water preservation. ²³ The project provides families with safe water closer to their communities. ²³ A current female community member in Ghana named Zuwera discussed with the WaterAid organization, "I'm happy because when the water comes we will be cleaner every day. We will not fall sick. Everyone is happy about it." ²⁴ In addition to these programs, the Water4 organization has established regional operating centers in Ghana and Ethiopia. ²⁴ These are manufacturing facilities that employ men and women for job opportunities and provide operational work for clean water access throughout Africa. ²⁴ Part of these initiatives involves well drillers to create boreholes and manufacturers for the Ghana facility. ²⁴ The organization of Water4 spent weeks in Ghana setting up the operations and development of the manufacturing facility. ²⁴ This new manufacturing facility has provided communities with ease of access to clean water and to develop the water crisis in Ghana and prevent waterborne illnesses.

²⁵ To educate women and provide them with job opportunities the Saha Global has been an organization to provide clean water to rural communities within Northern Ghana. ²⁵This opportunity has been able to provide women with potential to open water businesses that reach various rural communities. ²⁵Over 800,000 families lack access to clean drinking water. ²⁵The streams and wells are far away from families that they are basically inaccessible to families. ²⁵The water that is available has feces that contaminate the quality of the water and during the dry seasons the contamination increases. ²⁵The Saha Global organization trains women in rural villages to develop the quality of the contaminated water and make sure it is clean and safe for people. ²⁵The women are trained to collect the water by hand, treated by hand through utilizing chlorine and alum, and process the water in containers for families. ²⁵ Over 293 women have opened up these businesses in over 100 villages to over 53,000 people. ²⁵ The water is tested monthly by the Saha organization and the water has been sampled to be 98% clean and free from E.Coli.

India Water Crisis

India has been suffering through a severe dry season. ²⁶ Half the population in India goes through long-stages of dry seasons that cause the streams to dry out and limit water access for citizens. ²⁶ In Chennai, Tamil Nadu, there are four lakes that surround the area but the lakes have dried up significantly. ²⁶ The citizens of this area do not have opportunities to gain water to drink, wash materials, or cleanse with. ²⁶ There is a lack of availability for water so these people end up traveling to different stores and shopping centers with

restrooms to cleanse themselves and their families with.²⁶ However, many shopping areas have closed their restrooms due to this issue.²⁶ There is a lack of opportunities for the government to provide assistance with the industrialization of clean water.²⁶ The water scarcity crisis will decrease as the populations of Chennai increase within the new few decades.

²⁷ Over 100 million people throughout India are in a water crisis.²⁷ According to the 2018 Water Index Report, by 2020 there will be 21 major cities will not have proper ground water.²⁷ Monsoon rains, which are crucial to the population, have not arrived in certain parts of India and the strong heat waves have killed over 137 people in 2019.²⁷ The groundwater makes up at least 40% of India's water supply.²⁷ Two-thirds of India's water supply in the reservoirs are below normal water levels.²⁷ The Prime Minister of India has implemented the Ministry of Jal Shakti to oversee the water resource management and has campaigned to provide water to every rural home by 2024.²⁷ Many citizens of India do not believe that it will not be enough for the civilians.²⁷ The United Nations Human Rights report discussed that due to the climate conditions; only the wealthy can access water and basic resources.²⁷ Thousands of residents wait by the government water tanks to fill their buckets with water and this has been a critical issue for hospitals and schools, which are struggling to gain water.²⁷ Civilians are using the same water they have collected to cook food, wash utensils, and consume for drinking purposes.²⁷ The country has leading its civilians to use dirty water as their drinking water.²⁷ This issue will lead to rampant diseases and lead to deaths and an increase risk for women mortality

and child mortality.²⁷ Young females have to drop out of school and work with their mothers to travel far distances to collect water.

²⁸ Women in India are set with the cultural tasks to be the house maintenance and take care of the children.²⁸ These women and young female children are responsible for the water collection for the family and to provide with cleanly household.²⁸ Women have to collect the water even if they are sick or menstruating.²⁸ The lack of groundwater resources due to dried up wells, streams, and ponds have caused retrieving water a burden.²⁸ The water crisis has caused women and young female children to travel a long distance and carry these buckets of water even if the woman is pregnant.²⁸ The unsafe drinking water has caused water-borne illnesses and women are victims of the water scarcity and pollution.²⁸ In certain areas, water is supplied in the middle of the night and this causes women to remain in that job and causes them a deprivation of sleep and productivity.²⁸ Due to the woman's job to retrieve water is significant, this limits opportunities for women to gain education because their role is retrieve water from far areas that it becomes exhausting over time.²⁸ In India around 23% of young girls drop out of school before puberty due to limited water facilities and lack of sanitation products.²⁸ Additionally, women who are in a lower class in society are denied access to water resources.²⁸ This results in discrimination under the India Constitution due to people's preconceived assumptions.

Bioethical Concerns for Women in India

In this water crisis issue for women in India raises a concern of bioethical issues. The first bioethical concern is the principle of justice that is raised because people do not have equal opportunities to retrieve the water that is being collected. The long travel and distances for families is crucial for the health of the family. This concern is growing because in some areas of India there is a drought where there is no ounce of water to access. These women and young children are traveling far areas to retrieve that water. This provides a lack of opportunity and fairness for people of all different rural and urban settings to gain water access. Additionally, the lack of water for drinking and cleansing is a violation of human rights. There is a lack of human rights when it comes to retrieving clean water and people being denied water because they live far away and have to make long trips to retrieve it. Water is an individual right for people and communities. This concern also raises the principle of moral responsibility. As a nation of India and global citizens, it is our responsibility to support citizens in India to gain access to water and provide resources for women and young children to have clean access and proper sanitation.

The moral principle of universal destination of goods is a principle that focuses on providing goods and services that are necessary to sustain life. For example, water, food, air, shelter, and clothing fall under this principle. This is a universal principle of goods and services for people. Denying people water due to their caste is a violation of human rights and destination of goods. Women of a different and lower caste are not able to retrieve water because of their caste system, which is detrimental to the life of the human.²⁸ The Indian Water Law is

recognized under the Article 21 in the Constitution of India. ²⁸ This constitution states that every citizen is of legal right to retrieve and have safe drinking water. The court deemed that water is an essential right for human life and has been protected under the constitution. However, due to the caste system many government bodies that control the property of those water wells are denying women of water. The preconceived notion and mentality of citizens who believe in the caste system are oppressing people and denying their basic human rights to retrieve water. This is a violation of human rights not being able to get water because of their caste that they were born to.

The third bioethical concern for India and the water crisis is the violation of young girls having to quit school in order to travel with their mothers to retrieve buckets of water. Women are forced out of education to help their family members and many of these schools are not equipped with proper sanitation and washrooms to cleanse. This is a violation of human rights and discrimination of educational rights for young females and women. The government that is lacking to provide resources for these young females is a growing concern. ²⁸ Under Article 21 A of the Indian Constitution, the right for women's education is a fundamental right and not a privilege. Women have the right to study but due to family concerns they are not able to get that education and have to quit before puberty begins because lack of water and proper sanitation.

Policy Recommendations in India

Though India has growing disparities of water access and women right for education, India has been growing within its acts to provide water resources for

low rural areas.²⁶ The government has implemented the National Rural Drinking Water Program.²⁸ This program provides access to everyone and that it is recognized as a fundamental right and right to life by the Constitution.²⁸ There has been a campaign organized by the Times of India called the make India Water Positive to bring light into a stronger water infrastructure to initiate quick action on the growing issue.²⁹ The Water Project has worked within India to build wells for the Eva Marie Girl's School.²⁹ These wells have provided the schools and 1,500 girls to clean water access for sanitation and drinking.²⁹ This provides an opportunity for young girls to educate and learn without the fears of leaving school for sanitation.

³⁰ The Maharashtra Water Resources Regulatory Authority has established a partnership under the World Bank to process policies and incentives to promote productivity use of water through equal distribution of water.³⁰ The National Mission for Clean Ganga is helping the Government of India to build an institution for management and the cleanup of the Ganga to reduce pollution.³⁰ This operation costs \$1billion to invest in wastewater and effluent treatment, solid waste management, and river front development.³⁰ Under the Dam Rehabilitation and Improvement Project, this project has improved the safety and performance of over 223 dams in India and provided capacity strengthening to develop the legal framework of water development.³⁰ The National Hydrology Project has been a data analytics project to determine the performance of the water management.³⁰ Next, the Shimla Water Supply and Sewerage Service Delivery Reform Development Policy Loan has been

supporting the Government of Himachal Pradesh to improve water supply and sewage services.³⁰ Accountable institutions that are responsive to the citizens needs in Shimla manage this project and loan.³⁰ The West Bengal Accelerated Development of Minor Irrigation has been supporting farmers through improving services of delivery to farming communities and providing these produce to the agricultural markets in the cities to receive a steady income. These opportunities that are being provided through the World Bank are giving farmers and families a chance for clean water and proper sanitation.

Opposing Views and Critiques

Many university and global organizations create opportunities for their citizens to travel to developing countries to provide assistance to the people of the host country. This leads to opportunities for the development of infrastructure, water pipes, nutritional meals, educational, and medical resources for families and individuals to have access to. Organizations that host opportunities for their members to travel to developing countries to provide support for the community they are traveling to. Organizations such as the WaterAid organization, World Bank, Safe Water Network, and Water and Sanitation for the Urban Poor that provide resources for clean water for the civilians of these countries are doing a tremendous job for the people.

However, there are controversial issues that arise with volunteer tourism and these projects do more harm for the people than benefitting them in these projects.³¹ Some of the issues that arise from volunteer tourism are that unskilled laborers create more work for the community, there is no long-term commitment from the volunteers, there is a focus on rewarding volunteers and causes an

expense for the community, and additionally there is a negative stigma that developing countries are waiting for Westerners to come and fix the issues of the country.

³² In Uganda, volunteer tourism has some difficulties when it comes to volunteering and providing support for the people of local communities. The volunteering tourism has negative consequences for the people. Many organizations go through a short-term volunteering period and cause more harm for children and poor, vulnerable groups. ³² Volunteer organizations go for short-term volunteering, which meant that more volunteers would lead to more costs for the organization. ³² The local communities in Uganda are not involved with the volunteer organization's projects. ³² They do not ask the opinions of the people and do not include them for suggestions for the progressiveness of the project. ³² These projects involve developing the communities but without the input of the community. ³² There is lack of information when the volunteers arrive at the location and do not have enough knowledge about the community, culture, or lifestyle of the people. ³² This cause the volunteers to have more training work, which costs more and decreases the quality of work that is being done in the country. ³² Volunteering in Uganda and other countries in Africa has caused civilians of these countries to pay high amounts of money to the volunteers and this is a concern because the civilians should not be paying over \$2K for volunteer groups. ³² These groups travel to countries in Africa and do not contribute anything to the local communities. ³² Volunteering in countries, such as Ghana and Uganda, has become more of a fashionable trend rather than an

experience to help.³² This has become a moneymaking business and makes the stigma about countries in Africa that they are “poor, need our help, our way of education, and our way of living.” This precludes a way of demonstrating that these areas are in need of the Western World’s help. Many of these organizations show the worst pictures of children and families living in poverty in these developing countries. It displays a persona that countries in Africa, India, or Nicaragua are not able to escape poverty and are in need of interventions of care.

This causes an issue for the ethics of the organization because they are not doing the work for the greater good. They are using the opportunities to volunteer as moneymaking business and not developing the women’s care and access to clean water for the communities. This violates the principle of beneficence because there is lack of doing well for the greater good for the communities in Uganda, Ghana, Nicaragua, and India.

³³ These programs need to be revamped to better the volunteer work and provide an opportunity to develop a cross-cultural engagement. ³³ This type of opportunity will help people of different backgrounds to learn about the local culture and appreciate each other’s differences. ³³ Organizations need to provide adequate and accurate information about the volunteer site and the people of that country. ³³ This information will help to develop the critical concerns of the infrastructure and fears of the people. ³³ People travelling should take opportunities to learn about the cultural history, economy, political, and social factors of these countries and provide opportunities to explore the systems of

poverty and inequality.³³ These opportunities should help develop people travelling to respect the country and its people but not view it as an opportunity to help the poor. These are some steps that these volunteer organizations for world development, such as UNICEF, WaterAid, and CARE International, can help develop their volunteers and provide an accurate insight of the countries.

Bioethical Concerns of Volunteer Tourism

Organizations that provide volunteers to travel to developing countries in order to establish infrastructure, food resources, or medical supplies often face ethical dilemmas that are concerning to the public eye. Many individuals travel to developing countries in order to do the right thing and help develop care for the citizens of that community but they do it for the wrong reason. Individuals who are a part of these organizations end up benefiting themselves through stating their experiences on resumes, interview boosts, or graduate school applications. This ends up discouraging the act of helping people and shows a tendency of self-fulfillment.

³⁴Many developing countries and their governments rely on international groups and organizations with no coordination or ties to these organizations to receive assistance. ³⁴This creates organizations to send in volunteers to help only for a short-term fix of issues facing a particular community. ³⁴People only receive a benefit of the volunteers for a short-time period but it does not improve long-term access to quality of care. ³⁴This forces volunteer groups and organizations remove the incentive for the developing countries government to

invest in healthcare or programs/resources to help adhere to women and family needs.

³⁴Many of these hospital volunteer organizations try to develop a similar healthcare structure to these countries but it only leads to decay of the local health services. ³⁴These citizens are just waiting for when the next group will arrive to receive the healthcare resources and medical resources rather than being taught on how to proceed with simple procedures and medical resources. ³⁴Treatment of medications, pharmaceuticals, and visitation to healthcare clinics start to decrease as soon as volunteers leave the country. ³⁴This forces the unemployment rate to increase in these countries because they are providing free labor and not allowing developing jobs for local citizens. ³⁴The lack of clean water, diagnostic tools, power, and medications lead to inexperienced volunteers to help and provide low quality of care to the people. ³⁴There is an absence of professional healthcare workers and causes inexperienced volunteers to provide the care that they are not trained enough to practice.

³⁴In order to change this approach, the system for volunteering tourism needs to address the critical issues that arise from “helping” the developing countries. ³⁴There is a paternalistic approach for wealth Western organizations that determine what is “good” to help the people of these developing communities. ³⁴Most of these countries have a set medical school and facilities to take care of their patients, it is important for these volunteer organizations to help develop the professionalism of these hospitals and not change the structure of the organization. ³⁴ It is important for volunteers to provide continuous medical

educational resources and appropriate technology to help with the community care.

The first bioethical issue that arises from volunteer tourism is the respect for patient autonomy. Volunteers and medical practitioners that come to these countries and interact with the people of these communities do not account for the autonomy of the patient. In the sense, there is a language and cultural barrier that causes a lack of proper information and guidance between the community members and the volunteers. Without proper information regarding the individual's health and the volunteers providing treatment or medical supplies this causes the citizens to not have the capacity to understand. This raises concerns of negligence of the volunteer's part. There is lack of proper information, capacity to act, and influence against a voluntary act. There is a lack of consent from the community members and the volunteers that are providing resources.

The second bioethical issue is the principle of non-maleficence. Volunteers who do not receive proper information and guidance of the site and work they will be conducting in the country can lead to harm to the community members. Without proper information for the volunteers and the necessary skillset, this can lead to more damage of providing resources and clean water access for community members. This harms not only the volunteers because they are conducting work that is not necessary for the development of the citizens but it also harms the community members. The community members will not have proper guidance or education to follow up on the work after the

volunteers leave and can cause even further damage to the infrastructure of the resources being provided.

The third bioethical concern is the principle of beneficence. It is the role of the organizations and the volunteers to provide benefit to the community that they are serving and provide positive steps in order to be effective and reduce harm and stress for the families. However, when volunteers do not have the necessary skills, such as project development, infrastructure engineering, building equipment, or training/developing communities on healthcare resources, this leads to chaos and harms the community. Without the proper skillset and resources from the volunteers, there is not guidance for the community members to learn from and work on these projects. When the volunteers do not have the skills to conduct the work, this leads to the community members having to build the infrastructure from scratch or the volunteers might not do an adequate job and this will cause community members to have to start all over. This leads to a waste of energy and time, not only for the volunteers but also for the people of these developing countries. It is crucial for the volunteers and organizations to have information provided prior to their arrival and have an itinerary and resources on board. This ensures that the projects are being done effectively and accurately that will benefit the community and reduce harm towards these communities.

Last, the principle of justice is a bioethical concern when it comes to volunteer tourism in developing countries. There needs to be a fair distribution of resources, goods, and services in society in order to develop the communities.

When there are limited resources that can only help for a short period of time, this causes more harm than good. The communities will just wait and rely on more organizations to come and pass through, drop the resources/goods, and then wait again for the next volunteer organization to arrive. This leads to dependency of the community members and the government to rely on the “Western world assistance”. This will not be beneficial for the community members and the developing country. In order to address this issue, it is important that volunteers and organizations help provide jobs and training opportunities for women and men to learn and grow. With the help of the volunteers and the resources, the community members will learn how to build wells, provide clean water, sanitation pads, and restrooms for women and children to use. This also will help to educate women and men on how to address these issues in the future and what resources are needed to provide the infrastructure and access to water. When the community members are educated on the quality of care and educated on proper healthcare, this provides a long lasting impact on communities and can provide more jobs for families. It is important that organizations spread that knowledge and resources to rural communities within the country and learn to provide jobs and resources for communities to learn from and change the ways of their daily lives.

Conclusion

The case study of Uganda, Nicaragua, Ghana, and India has displayed a scarcity of water for proper health consumption and lack of cleanliness for hygiene. This has raised several concerns for families to receive clean water for

proper usage. The water crisis has additionally raised concern towards young girls and women of the family households. Women have to travel several miles just to retrieve a small amount of water that will last several weeks for the families. In regards to this, even young girls have to leave school early in order to venture off with their mothers to retract the water. This causes young girls to not receive a proper education without having to worry about family responsibly and making the family's health priority. Without close water access, women and girls are not able to clean themselves properly because the water is used for cooking and consumption rather than cleanliness. Even with the water they receive some of the people will have to travel to local streams to clean themselves off. This leads to a variety of infections for the women and girls due to lack of clean water for their health.

Leading to the lack of water for personal hygiene and consumption, many of the rural villages do not have the proper infrastructures to support women and girls. Schools do not have proper drinking water so they have to use uncleanly water to consume for hydration. Additionally, there is a lack of proper restrooms for girls to use the bathroom when they are on their periods and do not have resources of sanitation pads. This causes girls to suffer silently or they have to skip school in order to stay at home due to their health. This causes girls to receive less of a valuable education because a majority of their time is spent at home rather than school. These concerns are crucial because it is important for infrastructures and governments of these countries to start building pipelines that are more of an access to rural villages. Promises are constantly made from big

corporations and the governments to the people of these rural areas but the actual implementation of these facilities are falsely promised. There is no development for decades to come and even when they are developed there is lack of guidance and care from the public.

In the field of Bioethics, this raises several concerns for the lack of safety and health for the women and young girls all around the world. The lack of proper water resources and sanitation pads leads to a violation of the principle of justice. Women in these countries are viewed as the family household designated member. Women have to travel miles on end in poor weather, clothing, and health conditions just to fetch a few buckets of water for their family, while the husbands are laborers who provide income for the family. As the woman comes back home from the water fetch, women also face fear of being raped or sexual harassed during their travels. Women cannot travel at night due to this fear, however, due to weather conditions and the heat, travelling at night might be the best option in certain cases. This leads to women in constant fear of something dangerous happening to them during their travels. This violation of justice is concerning because women are faced with the burden and fear of providing for their family with meals and water.

In addition to Bioethical principles, the violation of human rights by not providing water resources and pipelines is highly worrisome. People of these areas are being treated as if they are not as important to society and do not contribute to the wealth of the nations. This raises concerns because the governments of these countries do not want to use the money to help these

areas but use them for urban settings to attract more tourism and development of society. This is a violation of human rights because families of these villages and other rural areas are not given a chance to live properly with clean water, proper hygiene, and the right to a proper education for young girls. Young girls are trained at an early age to do the household chores and providing for their family. This leads to a disadvantage of these girls because they cannot receive an education to help them grow in their knowledge and potential careers. This violation resonates the most with human rights and the right for an education.

The Western World has been known for their savior complex to help the 'poor' in need. Rather than these Western World organizations educating and providing jobs for the laborers of these countries, these people just come and leave, as they desire. Once a project is done for water or development of schools/infrastructure, these organizations just leaves the project halfway or completes it without informing the consumers of these projects. This leads to the laborers in distress because they may not know how to operate such resources and if there is an error to the pipeline or resource, this causes confusion for the consumers because they are not educated or trained on the infrastructure. The development helps the people of these countries in a temporary way but does not provide long-lasting impact on the people.

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