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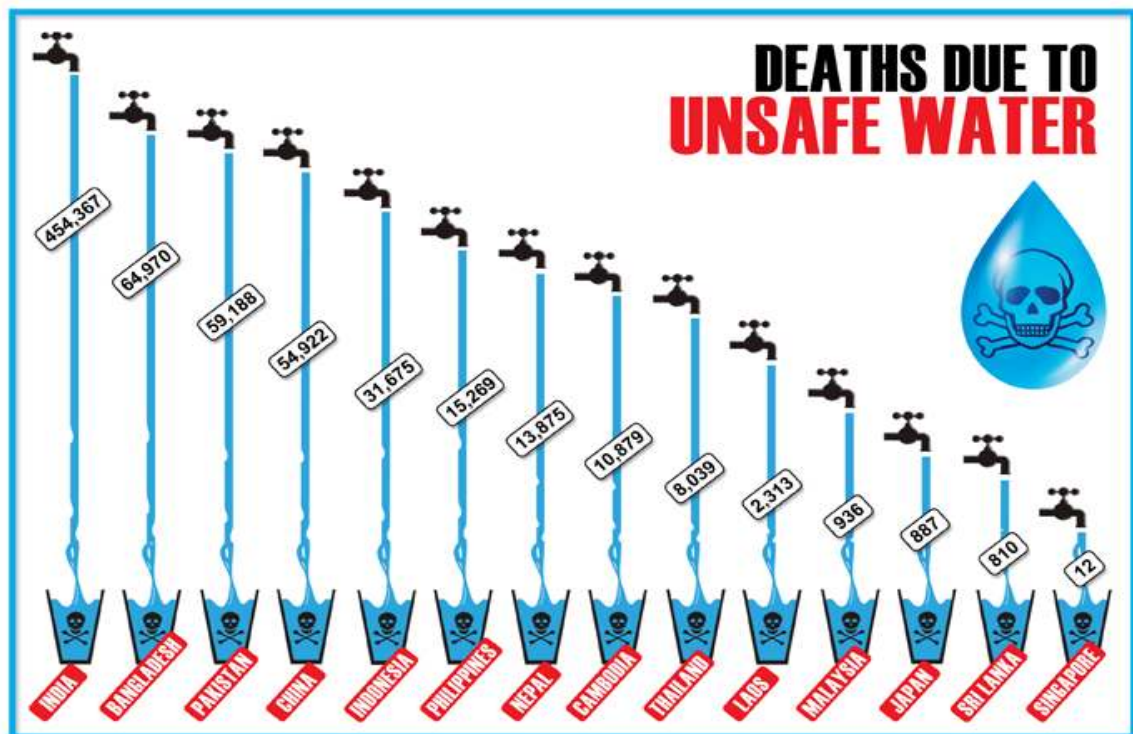
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The Effect of Water Sanitation on Children's
Health in Pakistan

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Introduction

Water sanitation is one of the most important factors in a healthy life for every living person. Especially for a child, water sanitation affects their health as they grow, and determines if they will be healthy in their future. In Pakistan, a south Asian country, it is particularly difficult to consume water that is properly sanitized due to economic and social issues. Many times, citizens of Pakistan must consume the bacteria infested water in order to survive. This is an issue with the impoverished population of Pakistan. They do not have access to water of their own and when they do, it is most likely not sanitized of bacteria and toxins. The following pieces detail the emphasis of action that needs to be placed on the cleanliness of water in this particular region. The studies that have been taken show the positive impact clean water will have on the health of children in the region. In many of the studies conducted the results shows the increase in health in children after consuming clean water. This graph created with information from the World Health Organization in 2010 represents Pakistan as being one of the top countries to have deaths due to unhealthy water.



(SOURCE: WORLD HEALTH ORGANIZATION REPORT, 2010)

Literature Review

The improper sanitizing of water in Pakistan affects the growth and health of young children in the country. People should be tremendously aware of this issue due to the fact that if the children's population in Pakistan declines due to health related problems, it sets a precedent to the fact that when the aging population die off there won't be enough of a younger generation in the country to keep the ethnicity from surviving and keeping it a country. Improper water sanitation can deter health to fatality. This is not a new issue. Water sanitation problems in countries with a decreased economic state continue to have this problem due to insufficient ways to improve the water. The improper sanitation of water has been a common issue in many impoverished nations. Many times people cannot afford proper sanitation methods. This problem is recurring because the necessary precautions needed to prevent bacterial water are unaffordable, and also, the health related problems that come correspond with drinking dirty water are often too advanced to heal. Bacteria infested water can cause diseases such as cholera, extreme diarrhea, and can infect the stomach. Sanitation of water has extremely diminished the increase of these diseases in third world countries. In order to increase the health of children's health in Pakistan, proper sanitation methods must be installed in affected areas.

Water sanitation has been a problematic issue in impoverished nation for a long time. There are many reasons this problem stays persistent. According to an article from the United Nations, "10 Things You Need to Know About Sanitation" the health impact of inadequate sanitation leads to a number of financial and economic costs including direct medical costs associated with treating sanitation-related illnesses and lost income through reduced or lost productivity and the government costs of providing health services" (Activities). One of the main reasons this is an ongoing issue is because there are not many affordable solutions. However, once nation-states are able to implement solutions the costly worries decrease with better health and better economic outcomes. Also, inadequate education about improved sanitation is another reason why the issue is persistent. Many people do not realize the health and economic benefits to the individual, the community and to society from improving sanitation.

Sanitation organizations such as UNHCR (United Nations High Commissioner for Refugees) provide effective strategies for safe drinking water in Pakistan.



The high cost of improving sanitation is often cited as a barrier to implementing sanitation projects. Improving sanitation is often low on the list of priorities. There are so many other pressing needs for the attention of governments: food supply, education, medical treatment and dealing with war and conflict. Most people are aware that poor sanitation has a health impact, but there is a lack of awareness of the extent of ill-health that it causes.” (Activities) Awareness about the disastrous effects of the issue must be recognized in order to come up with proper solutions in solving the problem.

In research analyst Alison Buttenheim’s journal, “The Sanitation Environment in Urban Slums: Implications for Child Health”, she evaluates the effect of bacterial water has on children in urban slums, specifically with the disease of diarrhea. She declares, “Adequate sanitation prevents fecal matter from contaminating water supplies and the surroundings in which people live, work, play, and travel each day.” Her statement provides positive impact sanitation will have on the lives of people. The author Alison Buttenheim conducted a study in Bangladesh of improved sanitation on child health. She studied different areas of Bangladesh, including rural and urban areas. The study focused mainly on the hygienic of bathroom usage and the safe disposal of feces. The study also showed a survey of the relationship of height and weight in children in different areas and how the sanitation of bathroom facilities has affected them. The study’s conclusion found that improved sanitation of bathroom facilities led to a higher standard of health in the children who were fortunate to have it, and those who did not, such as in impoverished parts of the country, had lower standards of health.

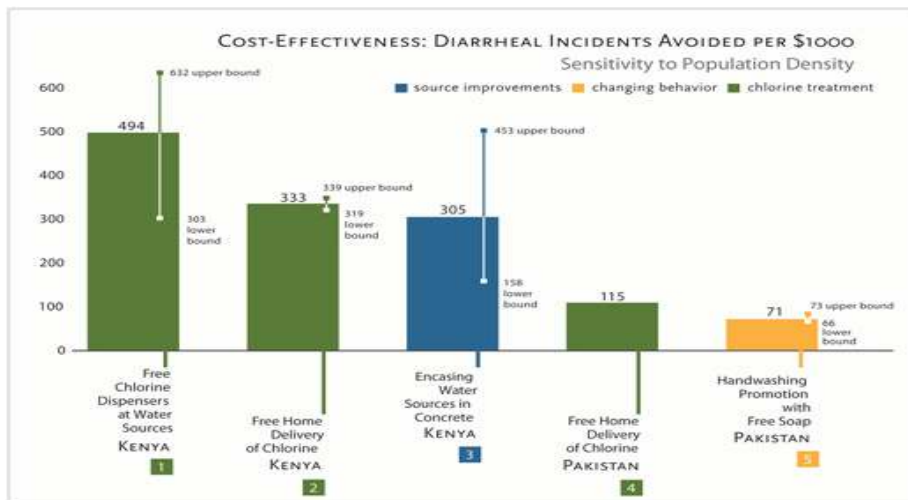
Author’s of the journal, *Exploring environmental perceptions, behaviors and awareness: water pollution in South Africa*, discuss the third world impacts on the environment in the community. It declares “Although concerns about the environment are world-wide, South Africa offers a special setting in which to examine public perceptions, awareness and behaviors regarding issues of environmental quality.”(Anderson) This journal details the awareness that must be raised in the public health issue of clean water. Many people misperceive how truly horrible this condition is in many parts of the world. This journal focuses on parts of South Africa, a prominent third world country. Many behaviors in these countries such as washing clothes in lakes, or bathing in streams have severely affected health in countries. The topic of this article is to raise awareness and change behaviors in order to better the lives of people in these areas.

Sheridan Bartlett in, "Water, sanitation and urban children: the need to go beyond "improved" provision," stresses the statistical rates of the number of children who have died in regions of the country due to water borne diseases, “surveys in seven settlements in Karachi Pakistan found that infant mortality rates varied from 33-209 per, 1,000 live births.” The article details how water-borne diseases can be completely preventable. This is a public health journal. The goal of this piece is to educate people on how to improve their environment through sanitation and hygiene. First it outlines the impacts bad sanitation has on the lives of people of everyone who encounters it. It then shows how poor education is one of the reasons for the poor environment. This journal shows the statistics of the child mortality rate in different countries. “High concentrations of people and wastes in urban areas create more opportunities for exposure

to pathogens and a correspondingly greater need for the levels of hygiene that adequate water and sanitation make possible,” (Bartlett).

Diarrheal Diseases in Children from a Water Reclamation Site in Mexico City, in the journal of Environmental Health Perspectives, studies the particular region of Mexico, and like the other studies shows the prevalence of diarrhea in children affected by contaminated water. Similarly the journal claims, “unsafe sewage disposal and fecal-oral transmission of pathogens are responsible for otherwise preventable enteric diseases and 3.2 million premature deaths every year.” (Cifuentes) This journal is a study conducted in slums of Mexico City. The authors and researchers conducted this study to see how filthy water affected the lives of everyone living in a village. Water samples were collected and tested to see how much they were truly infected. The statistics showed that the percentage of unhealthiness in the community was much higher because of what was being consumed. The risk of diarrhea was much greater in children who drank the water at a younger age. Although this journal doesn’t specifically focus on Pakistan, it does conduct its observation on one particular part of the region which makes the tests more accurate. This journal correlates with *The Sanitation Environment in Urban Slums: Implications for Child Health*” because it observes the implications of water on the prevalence of diarrhea in children.

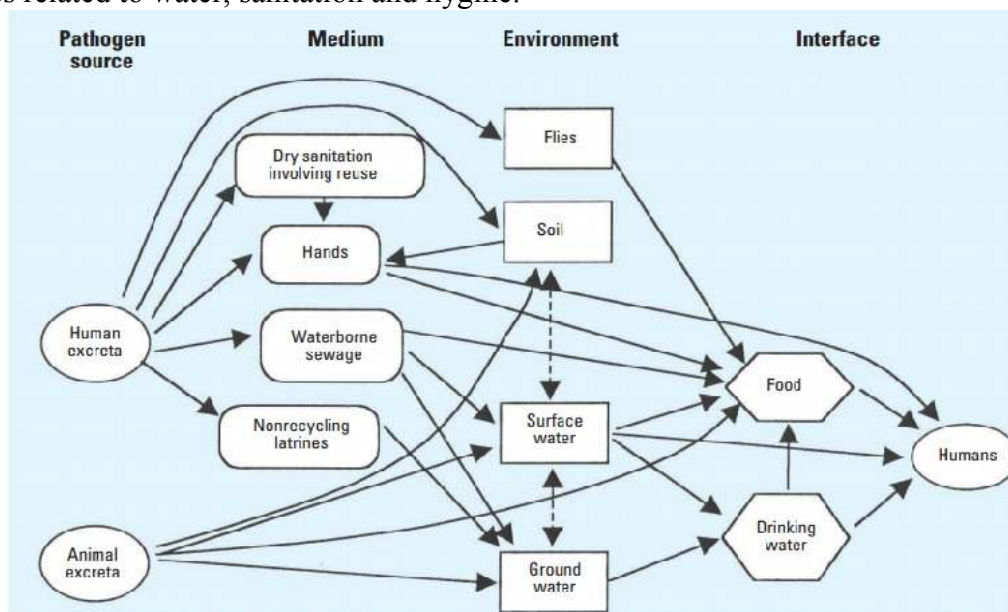
Below is a graph displaying how a workshop providing hand washing education tactics with free soap affected Pakistan and their child diarrheal diseases epidemic.



A study, centered specifically in Pakistan, was conducted to test the effect of adding chlorine to the water supply in a village. The results of the study concluded, “The water quality improved and reached a geometric mean of 3 *Escherichia coli* per 100 mL at the last standpipe of the water-supply system.” (Peter) The authors of this piece carried out a study of improving the drinking water quality in two villages in Pakistan. In the study, the number of child diarrhea cases in 144 children was recorded and observed. The researchers put amounts of chlorine in the public water supply. They found that the chlorine positively improved the water supply. Again, they recorded the cases of childhood diarrhea over the course of 6 months and found that the number of recorded instances has dramatically increased. They had helped to improve the water quality of the village. They emphasize that if this simple method was carried out in other villages and other parts of the region, water quality would dramatically increase which would help improve the quality of health.

Estimating the Burden of Disease from Water, Sanitation, and Hygiene at a Global Level provides details on the global impact of the sanitation of water on children's health on a global perspective. Bacterial infections in water can cause fatal infections like diarrhea. This article focuses on the public issue of the hygienic issues in countries all around the world, especially in third world countries, and other places where clean water isn't readily available. The World Health Organization focuses on improving the lives of people through improving their sanitation facilities. This article correlates with my research because it allows me to look at the global perspective of health and children's health. In comparison with other articles, the authors specifically focus on the disease of diarrhea. "Infectious diarrhea is probably the largest contributor to the disease burden from water, sanitation, and hygiene." (Pruss)

Below is a chart from the article explaining how pathogen transmission occurs in some diseases related to water, sanitation and hygiene.



The authors of the study, Availability of Irrigation Water for Domestic Use in Pakistan: Its Impact on Prevalence of Diarrhoea and Nutritional Status of Children conducted research on how irrigation methods affect the incidents of childhood diarrhea cases in Pakistan. They tested the irrigation supply in 10 villages, and the cases of diarrhea in 167 children less than age 5. They found that children with a higher socioeconomic status had better health than those who did not. The problem of these diseases being common has been persistent because many people are unable to afford clean water which is a tragedy because it may be the only thing keeping them safe. Also, the researchers found that children with improved toilet facilities were at less risk for getting sick. The prevalence of the diarrhea was most common in the children who had no kind of bathroom facilities and not enough access to the irrigation water. In order to reduce the burden of diarrhea, the researcher's goal was to improve toilet facilities and make a heavier flow of sanitized irrigation water to the villages. "One way of breaking the vicious malnutrition, diarrhoea cycle is to improve supply of water and sanitation. This can reduce the transmission of pathogens, thereby decreasing the incidence of diarrhoea, and would lead to improved nutritional status and lower mortality among children. (Wilmer) This study is similar to that of "Effect of

Chlorination of Drinking-water on Water Quality and Childhood Diarrhoea in a Village in Pakistan.” It shows how water affects the incidence of diarrhea in children and what can be done to help the situation.

UNICEF is a foundation dedicated to improving the lives of different countries. This author is writing on behalf of UNICEF urging the education of how bad the water sanitation actually is in Pakistan. He identifies the cause of much of the filthy water to be the monsoon floods of 2010. The author, David Youngmeyer, tells stories of actual people affected by unsafe water.

Like millions of others, Ume Hani’s family was badly affected by the monsoon floods that struck the country in 2010. They evacuated their home to escape the surging floodwaters, and returned to find damage to their home and crops. The floodwaters had also contaminated the ground water. “When we returned home, the water from the hand pump was smelly and not safe to drink,” says Ume Hassan. “People would go to far off areas which were not affected by floods to fetch water. We also used to get water from the canals for drinking. Many of the children had diarrhoea, including my niece, Ume Hani, and many children became very thin.”

The dirty water has caused numerous accounts of diarrhea in children, and the diarrhea leads to malnutrition which will eventually lead to many fatalities. The article depicts the programs UNICEF has integrated within the Pakistani community. One of the programs main focuses is to upgrade toilet systems, educate kids on hygiene, and promote hygienic routines. Since the program has been implemented the health of many people has improved. He reiterates like the other sources how bad bacterial water can be and that it can cause diarrhea and malnutrition.

Analysis and Conclusion

Reading through the articles, I agree with all the authors in that it is important to raise awareness and implement solutions for unsafe water conditions in not only in Pakistan, but globally. Water Sanitation is a major public health issue. I also chose the location of this topic to be Pakistan because of my cultural background. My parents were born and raised in Pakistan, I have only visited there once but when I did, my relatives made sure I only drank out of bottled water to ensure that I would not get sick. This confused me as I saw my younger relatives drinking from tap, were they not going to get sick? Even times when it rained, my family would put buckets out on the roof, and when the buckets were full they would boil the water on the stove and then either drink with it or cook with it. I found this to be odd because they would rather have rain water than the water flowing through their pipes. I deal with public health issues enthusiastically because I want to help the world in any way I can. In order to implement cost effective solutions, it is necessary to educate the public about these issues. Those who need to be aware of this type of issue but specifically those who can make proposals to fix public health issues are, even possibly many Muslim organizations who are willing to help a predominantly Muslim country of Pakistan, and globally such as the peace core and the United Nations.

Public health can either positively or negatively affect the lives of the global community. Awareness must be raised for the issue of sanitation of water. Water is a colossal determinant in the health of everybody. Water is a necessity that keeps us alive. The proper sanitation can immensely improve and even save lives, it is important to have the proper knowledge of how what you consume affects health.

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