

**Knowledge and Compliance to Health Sanitation Practices among Refillers of
Selected Water Refilling Stations in Iloilo City**

A Research Report
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by

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Abstract

Approximately 2.1 million individuals globally lack access to safe drinking water, leading to waterborne diseases and jeopardizing lives. This research focuses on the proliferation of water refilling stations in Iloilo City, where 70% operate without mandatory health checks. A researcher-developed questionnaire was utilized as the tool for this research to identify the relationship between knowledge and compliance with health sanitation practices among refillers of selected water refilling stations in Iloilo City. The questionnaire consisted of three parts. In the first part, the participants' demographic data were collected: age, sex, educational attainment, formal training, and years of experience. The second part listed statements to test the respondents' level of knowledge on health sanitation practices, instructing participants to select whether the statements were true or false. The third part listed statements pertaining to compliance with health sanitation practices, and participants were instructed to select their answers on a 5-point Likert scale: 5 (Always), 4 (Often), 3 (Sometimes), 2 (Rarely), and 1 (Never). The results were then analyzed using SPSS by the statistician. The results of the study showed that there is a direct relationship between knowledge and compliance. The participants are well-trained in the business and are knowledgeable and compliant with health sanitation practices.

Chapter 1

Introduction

Background of the Study

About 2.1 million people around the world continue to lack access to safe drinking water as stated by the World Health Organization (WHO). Inadequately safe water imposes a significant burden in the form of waterborne diseases and may endanger people's lives. Individuals require safe and clean water as a fundamental human right. Safe water is defined as water that poses no significant health risk when consumed over a lifetime. In terms of hygiene, washing hands with soap helps reduce the risk of disease and can save many lives (Rahim et al., 2022).

Water refilling stations are becoming increasingly common in order to provide a constant supply of clean and safe water with a total of 417 water refilling stations in Iloilo City. With the rapid rise of the population, water refilling stations have become an essential part of maintaining a healthy and clean lifestyle. However, poor sanitation has an influence on every facet of life, including wellness, development, empowerment, respect, and the economy (Sanitation and Hygiene Advocacy and Communication Strategy Framework 2012–2017). According to Joshi et al. (2013), another major environmental health issue that must be addressed is sanitation. Inadequate knowledge and poor sanitation practices can cause severe effects on the health of the population. Potable water, being inaccessible and poor sanitary conditions, can result in malnutrition and the spread of water-borne diseases. By improving water usage practices, hygiene, and sanitation many communicable diseases can be effectively managed (Joshi et al., 2013).

According to Bombo Radyo Iloilo, there are 365 water refilling stations in Iloilo

that have been issued with Certificate of Potability. The City Health Office (CHO) has reported that 31 water refilling stations closed for non-compliance, 6 permanent closures and 33 had voluntarily ended their operation last September 28, 2022. City Health Office has issued temporary closures to 35 water refilling stations pending results and those who were found to have water contamination and failed to comply with the business and sanitary permit requirements were closed for six months (Gomez, 2022). Its continued operation would pose a health risk to consumers, requiring the establishment's closure pending the requirements outlined in the rules and regulations implementing Chapter II of P.D. 856.

Only 154 of the Western Visayas' over 504 water replenishment stations have received DOH accreditation. In other words, 70% of businesses are operating without the required health check. According to DOH statistics, just 23 of the 113 water refilling stations in Iloilo City that are registered have obtained the required sanitary licenses. Due to concerns about a tainted supply, a lot of families and businesses rely on water refilling stations for their drinkable water. Even poor communities get their drinking water from water replenishment facilities. But it appears that not even the water replenishing station works. This is the case since it did not entirely adhere to the strict DOH administrative rules. 441 out of 630 authorized water refilling stations in the aforementioned locations didn't completely adhere to the strict conditions of DOH Administrative Order 2007-012 or the Philippine National Standards for Drinking Water at the time of the sanitary inspection.

Refillers from different water refilling stations lack adequate sanitation training, experience, and knowledge. Furthermore, a few water refilling stations have failed to have updated sanitary permits and the lack of an updated sanitary permit classified these establishments as non-compliant, resulting in the emergence of water-borne

diseases that could potentially harm the community's health and well-being. Refillers are responsible for sanitizing inside the refilling stations; therefore, refillers should be equipped with sufficient knowledge about sanitation practices and familiarize themselves with the Philippine Sanitation Code. Establishments should be in compliance with the Municipal Health Office and the DOH's mandate. Water refilling stations must be informed about sanitation procedures to guarantee effective management and upkeep of the business; however, a lack of understanding and improper sanitation procedures can put the public at risk of contamination and have serious implications. Our livelihood depends on the availability of water, a priceless natural resource. Potable water and sufficient sanitary facilities could help stop the transmission of infectious diseases and lower morbidity and death.

Objectives of the Study

The general objective of this study was to determine the relationship between the knowledge and compliance to health sanitation practices among refillers of water refilling stations in Iloilo City.

Specific Objectives:

Specifically, this study aimed to determine:

1. the duration of work experience for the refillers employed within water refilling station;
2. if the refillers have undergone formal training for operating a water refilling station;
3. the level of knowledge on the health sanitation practices among refillers of water refilling stations;

4. the level of compliance to the health sanitation practices among refillers of water refilling stations in Iloilo City; and,
5. if there is a significant relationship between the knowledge on and compliance to health sanitation practices among refillers of water refilling stations in Iloilo City.

Hypothesis of the Study

Based on the research objectives, the following hypothesis were drawn:

1. There is no significant relationship between the knowledge on and compliance to health sanitation practices among refillers of water refilling stations in Iloilo City.

Theoretical Framework of the Study

This study was anchored by the World Health Organization's (1950) instrumental concept Environmental Sanitation Management (ESM), which supports Nightingale's Environmental theory where it states that attitude and behavior are intertwined, how a person feels about environmental sanitation, specifically their attitude towards it, influences their sanitation behavior, which invariably manifests in their sanitation practices

Sanitation, health, and water supply are all interconnected. Each year, many of the poorest individuals worldwide pass away from communicable illnesses due to poor sanitation, a lack of sanitary facilities and lack of potable water, and poor hygiene. The health of people living in that environment were affected by unhygienic conditions. This is due to the presence of pathogens, pests, and bacteria in the environment, which cause a variety of diseases. Microbial transmission involves cross contamination in the surroundings. Nightingale comes to the conclusion that unsanitary environmental

conditions adversely impact people's health. The main focus of Nightingales' environmental philosophy was addressing patients' needs in their surroundings. Nightingale has identified five (5) environmental factors and two of them are pure water and cleanliness or sanitation. Health is defined as "not only being well but also being able to employ every resource we have," while nursing is defined as "the actions that encourage health that occurs in any caregiving scenario." Sanitation means the manipulation of the environment to prevent disease. A patient who is in a decent environment is cared for by hygienic nurses, given proper nutrition and medicine, and receives guidance and inspiration is more likely to avoid certain diseases and illnesses than those who do not have these advantages.

An essential component of reducing healthcare-acquired infections is giving sanitizing and environmental maintenance more attention (Han, Sullivan, Leas, Pegues, Kaczmarek, and Umscheid, 2015). In line with this is Nightingale's standard for hospital cleanliness, which emphasizes maintaining a clean environment for patients.

Early children's well being can be negatively impacted by poor hygiene, both through the decreased absorption of nutrients that is associated with it and through asymptomatic illnesses with fecal microorganisms (Guerrant et al., 2012; Humphrey, 2009). Environmental enteric dysfunction, a subclinical disorder that can cause growth to stall, may be brought on by repeated and persistent infection (Ngure et al., 2014). According to recent evidence-based studies, proper sanitary habits and a clean environment can minimize the probability of infection and are essential components of nursing care.

An additional theory of Luis Pasteur's Sanitation and Hygiene on which the study was anchored by the Behavioral Theory (Hammond, 1995), also believed that while leaders cannot be taught to become effective, they can be developed. Teaching refillers

to accept the practice of hygiene and disinfection is the foundation for maintaining cleanliness in the workplace.

It emphasizes the need for cleanliness and the absence of microorganisms. This includes the amenities that make it possible to maintain hygiene. Water supply and sanitation are inextricably linked. It is essential in everyday life and is a component of every human being on the planet. Drinking water needs to be clean, pure, and free of any unpleasant tastes or colors. Water availability and proper sanitation are critical for health protection.

In the article of Pedrosa (2022), it stated that employees of water refilling stations in Bacolod City are not abiding by the sanitary code's standards when handling the refilling of water containers. To continue, the Association of Water Refilling Stations of Negros Occidental has requested that the Bacolod City Council enact a resolution deferring the closure of water refilling stations without licenses if the finished product failed the monthly bacteriological test. There were 204 water refilling stations that had been examined as of October 4 by sanitary inspectors, from which 95 were found to be running without sanitary and business permits. According to the City Information Office, water refilling stations in the city are required to undergo a monthly bacteriological test and their employees must also complete a Hazard Analysis Critical Control Point Seminar in order to receive a health card and as a requirement for the sanitary permit that will be issued by the City Health Office (Reyes, 2022).

In the study of Brina (2019), about sanitation and hygiene, it is important to examine the steps taken to ensure cleanliness in the areas where people work, the equipment they use, the products they use, and the containers that will be used, and also to ensure personal hygiene of every personnel within the premises. In addition to this study about sanitation and hygiene in regards to design and premises, to reduce

unwanted risks of contamination ensuring a thorough cleaning and disinfection of filth and dust accumulation is a priority to guarantee a safe environment to the community, and the drainage system should be checked regularly to prevent backflow to make sure that the water being provided by the water refilling stations is clean and drinkable.

This confirms the theory of Nightingale on Environmental Theory which states that millions of the poorest people in the world die from diseases every year that could have been prevented owing to a lack of sanitation facilities and the health of those who reside there is impacted by unhygienic environments. This is due to the presence of bacteria, pests, and pathogens in the environment that cause a variety of diseases.

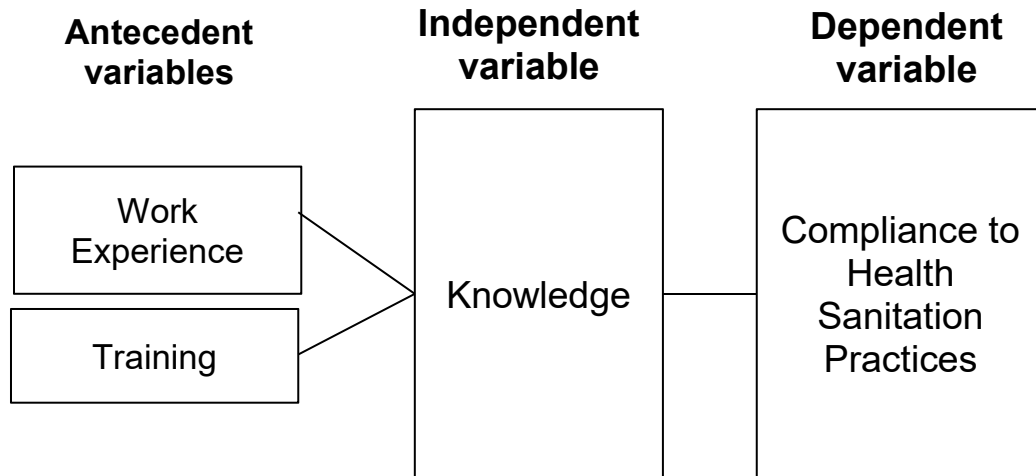
Conceptual Framework of the Study

In general, the theories presented are applicable to the present study as they presume that through proper sanitation practices, it can improve health and reduce the risk of contamination

In this study, **Knowledge and Compliance** were assumed to be associated with or affected by **Health Sanitation Practices of Water Refilling Station**

Figure 1

Paradigm showing the relationship between the knowledge on and compliance to health sanitation practices among refillers of water refilling stations in Iloilo City.



Definition of Terms

To enhance clarity and precision, the following terms used in the study have been defined both conceptually and operationally.

Compliance. It refers to carrying out actions or creating procedures or guidelines in line with the demands or expectations of an external authority (Harvey, L., 2004–23). In this study, it referred to whether the Refiller observes proper health sanitation in accordance with the health sanitation code. the specific categories that classify things in accordance, such as below average, average and above average.

Work Experience. A period of time in which a person temporarily works for an employer to get an experience (Cambridge Dictionary, 2024). In this study, it refers to the participants' number of months or years in service as a refiller.

Health Sanitation Practice. The ability to maintain hygienic conditions, the capacity to safely dispose of waste, and the capabilities to maintain a safe environment at work (CDC, 2021). In this study, it refers to the best way of preventing infections, spreading diseases, promoting good health, and keeping the public safe is to improve hygiene and sanitation procedures in service-based industries.

Knowledge. This refers to knowledge of the reality or state of something through familiarity gained through experience or association (Merriam Webster's Dictionary). In this study, it refers to whether the refiller at the water refilling station is aware of the health sanitation code mandated by the Department of Health. The specific categories that classify things in accordance to their scores, 0-11; 12-13; and, 14-15.

Training. It is a process that helps employees learn the necessary skills to perform their jobs effectively (Ecdl, 2022). In this study, it refers to acquiring the skills necessary for a specific job.

Refillers. This refers to a person who renders an essential service to the public and offers high-quality services purely to satisfy those wants and needs.

Significance of the Study

The findings of this study will benefit the following:

Community. The findings of this study will greatly benefit the community by increasing awareness around the community, particularly where people can acquire drinkable water and the sanitation process done by water refilling stations in their area. This also provides them with safety and protection by guaranteeing that the water source they obtain from the water refilling station is clean. This is a significant help to the community, especially the vulnerable sectors that are susceptible to sickness and want

to avoid it.

Consumers. Consumers will be able to use the information from this study to be more attentive to the health sanitation practices of the water refilling stations they purchase from in Iloilo City in order to ensure the health and safety of their family members, as well as meet their needs and prevent illness.

Refiller. The research findings will be used to further strengthen the staff's understanding of how to handle proper sanitation of water refilling stations, the prevention of diseases caused by improper filtration of drinking water and practices, and how to improve the quality and safety of their water refilling stations in order for the water they generate to be safe to drink and consumable by the community. Furthermore, the value of these research findings to the refiller is that they will acquire the trust of the community by providing safe drinking water.

City Health Office. The information gathered in this research study will aid in the efficient formulation and implementation of policies, plans, programs, and projects aimed at improving the health of city residents, as well as the execution and enforcement of all public health-related laws, ordinances, and regulations.

Department of Health. The results of this study will benefit the DOH by providing data that will serve as a basis for implementing mitigation and other health-related programs.

Lawmakers/City Councilors. The findings of this study will assist councilors in drafting city ordinances and disseminating them to the community, ensuring that the quality of water sanitation processes is maintained.

Local Chief Executives. The research findings of this study will assist them in strengthening policy guidelines and enforcing proper health sanitation practices at all water refilling stations.

Future Researchers. The information acquired and the conclusions of this study

may be used as a tool by other future researchers to further extend relevant data on the knowledge and compliance with health sanitation practices of water refilling stations in Iloilo City for their future research attempts. Additionally, this can help future researchers generate interest and widen approaches in the same area. The information acquired will also help future researchers evaluate the study before conducting another in the same area.

Scope and Limitations of the Study

The research study is a descriptive-correlational study that focused on the knowledge and compliance to health sanitation practices among Refiller at water refilling stations in Iloilo City. The study participants were the 136 Refiller of the water refilling stations in Iloilo City.

The researchers limited their study on the Refiller who manages the water refilling station. Researchers focused their data collection efforts on the facility's water charging stations rather than on water vending machines. Researcher-made questionnaires were utilized to determine the aforementioned variables.

Chapter 2

Review of Related Literature and Studies

This chapter is a discussion of the literature and the results of other related studies to which the present study is related to. It is divided into three parts: (1) Review of Related Literature; (2) Review of Related Studies; and, (3) Synthesis of the Literature.

Review of Related Literature

Work Experience

In the study conducted by Lengkong et al. (2019), work experience is characterized as a transformative process, fostering learning and the development of positive behavioral traits. Additionally, insights from Foster and Karen et al. (2001), underscore the impediments employees may face in executing their duties, including a lack of understanding in obtaining information, inadequate competencies aligned with their responsibilities, uncertainty about their work, and a perceived inability to fulfill assigned tasks. These challenges contribute to suboptimal employee performance, emphasizing the significance of work experience in enhancing employee competence and overall job proficiency.

Knowledge on Health and Sanitation

According to Molina et al. (2021), following the establishment of national and global water, sanitation, and hygiene targets and the implementation of programs, the study sought to assess the achievement of these targets at the local level in selected areas of the Davao region of the Philippines. A modified tool that combined national guidelines and global recommendations was used to assess water, sanitation, and hygiene indicators in randomly selected households. Validated access to improved

drinking water sources fell short of targets in most barangays, while validated sanitary toilet coverage fell short in all barangays. In some barangays, there was a significant difference between validated and reported access to improved water and sanitation services. Handwashing facilities were available in approximately 87.5% of households, but only 51.2% had both water and soap. The monitoring gap caused by the Philippines' decentralized health system makes meeting the targets difficult. Standardizing indicators and optimizing the tool are required to allow for a comprehensive assessment of water, sanitation, and hygiene practices. This will aid in the generation of local data that is consistent with national guidelines and global recommendations in order to improve policy and identify focus areas for improved water, sanitation, and hygiene service delivery.

General Health Knowledge (GHK) is widely regarded as one of the primary inputs in the production of health outcomes. Education may assist in promoting GHK by generating it either directly as part of the school curriculum or indirectly "learning to learn." GHK is inextricably linked to a number of Sustainable Development Goals (SDGs) adopted by all United Nations Member States in 2015, particularly SDG 6: "Ensure availability and sustainable management of sanitation and water for all people, in all settings." SDG 6.2 is to achieve access to adequate and equitable sanitation and hygiene for all by 2030 (Huang et al., 2021).

Compliance with the Health Sanitation Code

In order to prevent water contamination, the DOH requires that employees at water refilling stations wear protective gear like masks, hair nets, gloves, and scrub suits. Additionally, 35 percent of water stations do not follow proper procedures for thorough cleaning and disinfection of water tanks. More than 80 percent of these facilities did not

comply with these requirements. Water refilling stations must pass rigorous sanitary inspections to ensure their continued operation. These inspections are undertaken on a regular basis by the city or municipal health inspector and are scored using a 20-item checklist worth five points each, for a total of 100 points. Water refilling stations, on the other hand, only need 50 points or more to pass the sanitary inspection. Only five points are deducted for offenses like failing to adequately sterilize the water containers or testing positive for germs in the output water. Therefore, there is still a strong likelihood that a water refilling station will pass the sanitary inspection with only a five-point demerit even if the bacteria test is positive (Espinosa et al., 2021).

Hundreds of millions of people's drinking water is heavily polluted or contaminated with chemical toxins due to poor management of municipal, industrial, and agricultural wastewater. Arsenic and fluoride are two naturally occurring chemicals that may have health consequences. Other compounds, such as lead, may be present in higher concentrations in drinking water due to leaching from components of the water supply that come into contact with the water. Undernutrition, waterborne illnesses, gastro-enteropathy, coupled with diarrhea and dysentery, can be caused by inadequate access to safe drinking water and insufficient sanitation (WHO, 2022).

According to the research of Nurlang et al. (2020), the absence of effective implementation of supervisory management in drinking water depots has an adverse effect on bacteriological quality, which is not good. Due to the absence of depot inspection regulations and a lack of health laboratories and bacteriological testing facilities in the district, it was shown that their fill depot's water handling process is still unsatisfactory. The depot owners did not conduct routine drinking water quality tests (at least every six months), and none of the employees had completed the sanitation safe food handling hygiene training course (Minister of Health Regulation No. 43 of 2014).

This study's findings reveal flaws in small-scale industry surveillance efforts. The proportion of refill depots with low bacteriological quality remains high and the depots continue to function despite supervisory officials discovering irregularities in the production process. The findings indicate that poor production management practices without requesting direct repairs are insufficient.

Health Sanitation Practices

One of the significant issues and concerns of the water refilling station businesses is the safety, cleanliness, and quality of the water they produce. Millions of people are harmed by drinking unsafe water, which leads to vulnerability to water-borne diseases and life-threatening illnesses, one of the most significant concerns in public health and economic life. Business owners and Refiller who provide safe drinking water need to provide quality products to ensure customers' safety. (Villafuerte et al. 2022). By increasing sanitation, hygiene, and water usage standards, many communicable diseases can be efficiently managed. To overcome the knowledge and practice gap in drinking water and sanitation, infrastructure development and policies alone are sufficient.

According to the study of Hidayah, E. N., et al. (2021), RDWS (Refill Drinking Water Stores) mostly employ the two procedures of filtration and disinfection for drinking water refill treatment technologies. Three distinct mountain springs located in Prigen, Trawas, and Pacet, provided the raw water for RDW. RDW satisfies the drinking water quality requirement for physical characteristics like pH, turbidity, and TDS but not for microbiological ones like total coliforms and *Escherichia coli*. The Ishikawa Diagram, a failure risk analysis, determined that microbiological pathogens were present in the RDW as a result of five variables, according to the fishbone diagram. Man, material, method, machine, and monitoring and assessment make up those five elements. They also

talked about how every piece of equipment should have its surface thoroughly cleaned and free of traces of regular maintenance. The current filter, however, has not been effectively maintained in any RDWS. The funnel in the storage tank was heavily oxidized and filthy, and there is no disinfection device.

Review of Related Studies

According to the study of Gamiao, N. M. et al. (2016), the compliance of water refilling stations with sanitation regulations and drinking water standards was thoroughly evaluated. The research aimed to assess the compliance of these stations based on their business profile, the quality of their water products in terms of physical characteristics, and the differences between compliant and non-compliant stations according to the Code on Sanitation of the Philippines and the Philippine National Standard for Drinking Water. The research focused on the selected district health zones of Cavite, namely: Magnamarte, Sigmacardas, Agimat, and Gentamar, with a total of 86 water refilling stations evaluated. Only a minimal percentage (2.3%) of stations met the sanitary regulations outlined by the Code on Sanitation of the Philippines. Additionally, 22.1% were rated satisfactory, while the majority (75.6%) had poor overall physical profiles, failing to meet the sanitation standards. In terms of the physical quality of drinking water, 93% of stations complied, but concerns arose regarding microbiological characteristics. Approximately 10.5% of water samples indicated the presence of heterotrophic bacteria, while 89.5% met the regulatory standards for heterotrophic plate count, reflecting the cleanliness of the water distribution system.

According to the study of Zahayu Yusof et al. (2019), the dominance of the 1 month to 3 years category, encompassing 52.5% of respondents, suggests a workforce primarily composed of individuals with relatively shorter tenures. This aligns with the demographic observation that the majority of the population is below 27 years old,

emphasizing a trend toward a younger workforce. The substantial representation in the 6 years and above experience group (35%) highlights a significant portion of employees with a more extensive history in the field. This could indicate a level of expertise and institutional knowledge among this segment of the workforce. Conversely, the smallest proportion in the 3 to 6 years experience group (12.5%) raises questions about factors influencing retention or career progression within this specific mid-range tenure

In the study by the OECD and Organization et al. (2020), states that individual health, livelihood, and well-being are all dependent on safe water and adequate sanitation. Despite this, more than one in every four people worldwide—roughly 2 billion people—do not have access to basic sanitation services. A lack of basic sanitation can lead to the spread of diseases such as diarrhea, cholera, and hepatitis A, as well as an increase in the burden of malnutrition. Better access to water and sanitation could save the lives of 297,000 children under the age of five every year (WHO, 2019). Improving access leads to significant social and economic benefits, including greater educational participation, higher standards of living, lower cost of healthcare, and a more effective workforce. As a result, the United Nations has set the goal for 2030 to achieve universal and equitable access to affordable and secure drinking water for all, as well as sufficient and equitable hygiene and sanitation for all, and the abolition of open defecation. Furthermore, UNICEF's Water, Sanitation, and Hygiene (WASH) strategy 2016-30 aims to ensure that every child grows up in a safe and healthy environment and has access to basic sanitation and safe drinking water in early childhood development centers, schools, health centers, and humanitarian settings (UNICEF, 2018).

According to the study of Mohd R. and Malik I., et. al. (2017), the most efficient approaches to lowering the occurrence of water-borne diseases, are three fundamental hygiene practices: proper feces disposal, frequent hand washing with soap, and safe

treatment and storage of drinking water. The prevalence of water-borne diseases is reduced by 30 to 50% when water is stored and treated safely at the point of use; by over 40% when hands are washed with soap; and, by over 30% when human waste is disposed of properly.

In the study carried out by Ravindra et al. (2019), the primary measures for limiting various waterborne diseases are the availability of clean water and adequate sanitation facilities. These basic necessities are necessary for good health and long-term socioeconomic development. The purpose of this study was to assess the state of water and sanitation facilities and practices among people living in rural areas of Chandigarh, as well as their knowledge of waterborne diseases. The study's findings highlighted the need to raise awareness about the role of water and sanitation practices in health, as well as knowledge about various government programs to improve quality of water, sanitation, and hygiene practices for improved health.

In accordance with the study about health sanitation, according to Vedachalam et al., (2017), The Millennium Development Goals' water and sanitation standards failed to capture high-risk practices that are carried out on a regular basis. In partnership with locals, fourteen rounds of household surveys were conducted across nine study geographies in Asia and Africa using mobile phones with a customized open-source application. High-risk practices included undeveloped water consumption and open defecation. Underreporting was defined as the difference between the regular and primary use of high-risk practices. Within the 95% confidence interval, our measurement of high-risk practices as the main option matched the widely accepted Demographic and Health Surveys (DHS) estimates.

Many studies have been conducted in these three areas: water, sanitation, and hygiene (WASH). All three of these elements complement one another. For example,

research illustrates that hygiene is a key that complements water and sanitation services. Environmental health benefits would be lost if it did not incorporate hygiene-based considerations. Overall, it safeguards public health by trying to encourage individuals to protect themselves from diseases caused by poor hygiene (Rahim et al., 2022).

According to the research of Sridhar et al. (2020), access to safe water, sanitation, and hygiene (WASH) facilities are essential for human livelihood, survival, and well-being. Adequate WASH facility provision is a major concern for the majority of developing countries worldwide. Despite the encouraging findings in the study areas, communities remain vulnerable due to a lack of access to safe drinking water and poor home treatment and excreta disposal practices. As a result, providing WASH facilities and WASH education is critical for ensuring public health in the study area. WASH knowledge, attitudes, and practices are critical to providing effective and sustainable WASH facilities. The purpose of this study was to assess the level of knowledge, behavior, and practices regarding water, sanitation, and hygiene in Kaduna State, Nigeria, in order to ensure long-term WASH facility intervention in the region.

According to the study by Sari, S., Faisal, M., et al. (2020), over the last two decades, drinking water refilling stations (DWRS) have grown in popularity, providing affordable drinking water to middle- and low-income urban households in developing countries. However, not all DWRS offer comprehensive quality control, which includes water quality and regulatory compliance. The purpose of this study was to evaluate water quality and the risk of DWRS recontamination, as well as adherence with administrative-laboratory testing regulations and the factors associated with them. From March to August 2017, a cross-sectional study was conducted in Bandung City, and 229 of 659 DWRS were tested for water quality and threat of recontamination from refill gallons and outlet taps using cotton swab and membrane filter methods to identify total

coliforms and *Escherichia coli*. The Ministry of Health regulations were used to determine compliance with administrative-laboratory testing regulations. Water quality was found to be poor in 37.6 percent of drinking water and 34.1 percent of raw water. It affects 40 percent of fill gallons and 25.3 percent of drain faucets. Only 10.5% of DWRS met laboratory management standards. Certified training and good management were factors associated with compliance. An integrated system for managing and monitoring the quality of DWRS is required to avoid insufficient drinking water consumption.

In the study of Hidayah, E. N., et al. (2021), people have drunk water generated by a waterworks firm that produces drinking water (PDAM). Since population growth and water consumption are inversely correlated, rising populations also mean rising water production. Modern drinking water production methods use cutting-edge technology that is also used for commercial purposes. It is referred to as "refilled drinking water" (RDW), and refilled drinking water stores are in charge of it (RDWS). Man, material, technique, machine, and monitoring assessment are the five sites of failure risk for RDW quality outlined in their fishbone diagram. They talked about the man who serves clients by refilling their water bottles, his lack of knowledge of bottle handling guidelines, such as cleaning and sterilizing bottles and washing hands before giving refills, as well as his unclean conduct and improper work attire. Some of them even talked about smoking while they were working.

In addition to the study of Berhe et al. (2020), water shortages, supplies, unsanitary living settings, and poor hygiene habits all contribute significantly to the transmission of transmissible diseases. One of the main factors contributing to the spread of contagious diseases is a lack of knowledge, attitudes, and practices (KAP) in the WASH sector. This study's objective was to evaluate rural inhabitants' understanding, attitudes, and behavior about water, sanitation, and hygiene in Tigray, Ethiopia. In

remote Tigray, Northern Ethiopia, people frequently lacked basic education, had unpleasant attitudes, and had bad washing habits. And hence, primary health care provided by the healthcare initiatives should be revived in a manner that may support proactive strategies to raise knowledge, attitude, and practice in WASH.

According to the study of Sikdar et al. (2022), the conservative right to have water that is safe to drink and sanitary facilities is one of the most essential and basic human rights. Similar to this, maintaining a healthy lifestyle requires adhering to some basic health and hygiene rules. As a result, we cannot minimize the value of personal hygiene in our lives. Due to poor personal hygiene, the burden of communicable diseases has significantly increased. Schools become a hub for the spread of infection among students, as well as a place to cultivate students' knowledge of and attitudes toward personal hygiene and sanitation. Due to poor personal hygiene, parasitic and intestinal infections are very common in India. Therefore, it is crucial to assess students' knowledge of and attitudes toward personal hygiene and cleanliness. The primary objective of this study is to assess the material quality used to create a standardized tool on students in higher secondary school's knowledge and attitudes toward sanitation and personal hygiene. The investigator created a self-made questionnaire to evaluate the participants' knowledge of and attitudes toward personal hygiene and sanitation. The scale was given to upper secondary school students in the Nadia district in order to accomplish the study's predetermined goals.

In relevance to the study that has been stated above, according to the study of Haque & Freeman et. al (2021), particularly for the most vulnerable populations around the world, the water, sanitation, and hygiene (WASH) sector has struggled to achieve at-scale and sustained improvements to its services (WHO/UNICEF, 2019). Significant advancements toward achieving universal access to clean water and sanitation are hampered by inconsistent and dysfunctional water supply systems and underused and

deteriorating latrines. According to UN estimates, at least 29% of the world's population drinks water that has been tainted by feces, chemicals, or is otherwise unimproved (WHO/UNICEF, 2019). Three billion of the population do not have access to handwashing facilities with soap and water, and two billion do not use sanitation services, including safe excreta disposal and treatment (WHO/UNICEF, 2019). Despite numerous thorough, high-profile field tests evidenced little to no reductions in childhood diarrheal disease or undernutrition from WASH interventions typically delivered to remote communities in low- and middle-income countries, there is a strong biological case to be made that improving WASH conditions is a foundational strategy for achieving health gains (LMICs).

Synthesis of the Literature

Instead of making one-time purchases of bottled water or using home water filters, water refilling stations are facilities run by private businesses and entrepreneurs. They are designed to provide a simple and affordable answer to the demand for drinking water. Where the behavior and the attitude of a person influences their sanitation behavior which affects their sanitation practices according to the World Health Organization. This is also anchored to the theory of Florence Nightingale which states that an unsanitary environment can pose hazard threats to people.

This has been amplified by the fact that disinfection and environmental cleaning is very important to prevent healthcare-acquired infection and poor sanitation can adversely impact nutritional status in which sanitation and access to water are intertwined.

According to the studies of Sridhar et al. (2020), Hidayah, E. N., et al. (2021), and Berhe et al. (2020) regarding health sanitation, having knowledge about proper sanitation and clean environment plays a vital role in producing clean water for the

people to drink and consume in their everyday life. It is also stated that Ethiopia suffered from various transmissions of infectious disease because of lack of knowledge in sanitation and also the attitude towards proper practice in WASH (safe water, sanitation, and hygiene).

WHO (2022) and Nurlang et al. (2020), emphasize that it is essential that there be proper management of wastewater since it can contaminate the drinking water that people consume. These wastewaters can cause poor quality drinking water, which affects the health of the people in the community. Regular inspections and the presence of laboratories should be given importance since the handling processes of these water refilling stations are still poor. The DOH and Espinosa et al. (2021), state that officials should not only focus on the sanitary inspection but also the result of the bacteria test of the water that is sold to consumers and also to ensure that the business owners are in compliance with and knowledgeable about the appropriate sanitary codes in their own municipality, score them. In order for the business owners to continue providing the community with clean drinking water, strict inspections were also put in place.

Maintaining a healthy living environment and halting the spread of disease depend on health sanitation practices. Personal hygiene, proper waste disposal, and upkeep of clean and secure water sources are some of these practices. Our study focuses on the knowledge and compliance on health sanitation practices and how it is important. Because people might not know how to properly clean and disinfect their surroundings, a lack of knowledge about good sanitation practices can contribute to the spread of diseases. However, even if people are aware of good sanitation practices, they might not use them for a variety of reasons, including cultural norms, a lack of resources, or complacency. Therefore, in order to maintain public health and stop the spread of diseases, knowledge of and adherence to health sanitation practices are

essential. Although understanding sanitation procedures is crucial, they are only useful if people follow the advised procedures.

Chapter 3

Methodology

This research was conducted to determine the knowledge and compliance to health sanitation practices among refillers of water refilling stations in Iloilo City. This chapter is comprised of parts: (1) Research Design; (2) Study Population and Sampling Procedures; (3) Research Instrument; (4) Validity and Reliability of Instruments; (5) Data Collection and Data Gathering Process; (6) Data Processing and Statistical Analysis; (7) Statistical Matrix; and, (8) Ethical Considerations.

Research Design

This research used Descriptive-correlational methodology to measure and assess the relationship between the study variables. Comparison groups, random assignment, or variable manipulation were not utilized in non-experimental designs. The researchers did not interfere; they only observed what occurred spontaneously. Descriptive designs classified the data, determined the frequency with which it occurred, and described what occurred. This design served as a method for determining if changes in one or more variables were connected to changes in another. This design was used to describe the relationship between the knowledge of and compliance with health sanitation practices among refillers of water refilling stations in Iloilo City.

Participants of the Study

The respondents of this study were the Refillers of water refilling stations of Jaro I, Jaro II, and Mandurriao district in the City of Iloilo. Based on the collected data from the

the City Health Office, the population size of the selected water refilling stations in the aforementioned districts in Iloilo City is 136.

Total or Complete Enumeration Method was utilized as a sampling method of the study. The researchers took all of the water refilling stations at Jaro I, Jaro II and Mandurriao, but only one refiller in each water refilling station, resulting in a total of one hundred and thirty-six (136) respondents.

Research Instrument

This study utilized questionnaires dispensed using a researcher-made instrument to gather data. The instrument was presented and validated by jurors specialized in research and statistics to determine if the items included in the questionnaire were appropriate or not for data collection.

A questionnaire prepared by the researchers was used as a data collection tool. The questionnaire was divided into two parts. The first section contained the demographic data of the respondents; name, age, sex, and educational attainment, training and work experience. The second part consisted of a set of questions associated with the level of knowledge on and compliance with health sanitation practices of the refillers and their understanding towards compliance with the health sanitation code. The respondents answered a 15-item true or false questionnaire for the Level of Knowledge of the Refillers on Health Sanitation Practices in Water Refilling Station and a 15-item 5-point Likert scale for the Compliance of the Refillers on Health Sanitation Practices in Water Refilling Stations. The collected data were analyzed to produce study results.

Validity of the Questionnaire

Validity is a concept generally associated with methods of quantitative research that evaluate the extent to which theories or interpretations derived from the study data

are accurate and completely describe the phenomenon being investigated (Gibbs 2002. Rosenthal and Rosnow, 2007).

To validate the instrument, the researchers presented the questionnaires to both panelists and research teachers for perusal. All suggestions and editions were included in the final version of the questionnaire.

To conduct the validity, the Standard Validation Form of the CPU College Of Nursing was utilized as a subject for face content validation for the research-made questionnaires. Researchers found three (3) experts to identify and validate the research-made questionnaires.

Reliability of the Questionnaire

A pilot testing of the research-made questionnaires in twenty-seven (27) Refillers was used to post-validate and revise them in order to ensure their reliability. Following the pilot testing, the questionnaires were subject to statistical analysis (Cronbach alpha). Cronbach alpha was used to determine if the questionnaire is reliable (0.70 or higher) or not.

According to Huck 2007, reliability testing is crucial because it deals with the continuity of the parts of the measuring device. To verify the reliability of the study, the researchers conducted a pilot test in twenty-seven (27) different water stations in Iloilo City to determine the knowledge and compliance of the refiller. The researchers used Cronbach's Alpha, a (or coefficient alpha).

Cronbach alpha was developed by Lee Cronbach back in 1951. It measures the internal consistency of a test or scale and it is expressed as a number between zero and one (Cronbach, 1951). This study used Cronbach's alpha to determine the reliability of the data collected by the research instrument. A Cronbach alpha score of 0.70 or higher is required for the research instrument to be considered reliable.

Level of Knowledge and Compliance on the Health Sanitation Code

Questionnaire. This is a researcher-made questionnaire composed of fifteen (15) items each to be answered by the respondents. To be understood, the items on the researcher-created questionnaire must have valid content that is specific to the intended respondents. The research underwent a pilot study with 20% of the sample size; however, the sample size did not include the respondents from the pilot study. Three experts who served as the researchers' research advisers were consulted by the researchers for assistance in order to establish the validity of the instrument. Their opinions and suggestions were taken into account for the benefit of the questionnaire's development. The validators, who must hold master's degrees and be familiar with the research procedure, are clinical instructors from the nursing program at Central Philippine University.

Ethical Considerations

A letter requesting permission to conduct the research study was sent to the Dean of the College of Nursing. During the period of data collection, informed consent was written and given to the respondents to allow the researchers to uphold confidentiality and act in accordance with the Central Philippine Research Ethics Committee and Philippine Health Research Ethics Board (PHREB) Standards, and they reassured the study participants that the information collected would be kept confidential and used only for the intended purpose of the research study and not for personal matters.

Informed Consent

Researchers included a clear and concise explanation of the study's purpose, procedures, risks, and benefits, as well as a statement of the respondents' rights,

including the right to withdraw from the study at any time and the right to refuse to answer any questions. Measures were taken to ensure privacy and confidentiality in dealing with the respondents' information.

Confidentiality

All data gathered were solely for the purposes of this study. To the extent permitted by law, the respondents' identities were kept private and confidential. The collected data were stored with the utmost care for privacy and confidentiality. Electronic copies were stored on a computer accessible only to the researchers. Hard copies were kept in a portfolio accessible only to the researchers. The findings of this study were presented to the Central Philippine University panelists.

Protection from Harm

The purpose, methods, and procedures of the study were thoroughly explained to the respondents. Researchers ensured that the respondents' psychological health was taken care of while they participated in the study. The researchers guaranteed that the study caused no serious harm and that respondents did not suffer any psychological harm.

Risk and Benefit

There were no foreseeable risks for study respondents when taking part in the study other than time spent on the survey and potential discomfort. If a respondent felt uncomfortable and wanted to leave the study, they were free to do so without any consequences.

The benefits to the respondents included determining their level of experience in operating a water refilling station, whether they strictly adhere to the health sanitation

code of Iloilo City health office, and whether they were able to put their knowledge into practice for the safety of the consumers. They also gained the opportunity to further develop any skills that they may lacked in the aforementioned practices.

Withdrawal criteria

The participation of the study's respondents' was entirely voluntary. It was entirely up to the respondent whether or not to participate. Respondents may withdraw from the study at any time without being asked why they did not participate; no penalty or other consequences would be imposed. If a respondent chose to withdraw from the study at any point, their data would be properly discarded.

Voluntary Non Coercive recruitment of respondents

Respondents had the right to withdraw their consent at any time without fear of penalty or negative consequences. This ensures that respondents' autonomy and agency were respected throughout the research process and that they were not coerced or pressured into participating in the study.

Contribution of results to the society

The contribution of the outcome to society was in establishing whether the water refillers at their trusted water refilling station were aware of and compliant with health sanitation practices and whether they were able to put those practices into action for the safety of their customers, as well as the community's health.

The findings contributed the refillers' capacity-building by providing them with the knowledge and skills needed to maintain proper sanitation and hygiene practices, as well as to the improvement of public health and development by providing evidence-based recommendations for improving refillers' knowledge and compliance in water

refilling stations and improving policies and programs aimed at encouraging proper sanitation and hygiene practices in water refilling stations.

Dissemination Plan

The study provided recommendations to improve refillers' knowledge and compliance, as well as the quality and safety of water from water refilling stations. The study's findings were disseminated to the larger community through a variety of channels, including academic publications, public health forums, and research colloquia and research flora designed for a wide audience, including refillers, water refilling station owners, public health experts, and policymakers.

Data-Gathering Procedure

A letter of request was sent to the officer in charge to conduct the research study. The researchers inquired and requested the list of the total number of water refilling stations in Iloilo City from the City Health Office to determine the study's target water refilling stations within Iloilo City. The questionnaires and informed consent were distributed to the chosen water refilling stations and after they gave their approval to be in the study, the researchers handed out the questionnaires, which included the formal letter, an informed consent form, and the questionnaire itself in hardcopy.

Data-Processing Procedure

The collection of the answered questionnaires was done after one week of receiving the questionnaire and were encoded in Google Sheets. The researchers gathered data through survey questions that included their age, sex, educational attainment, training and work experience, level of knowledge, compliance with the Iloilo Health Sanitation Code, health sanitation practices, and water refilling stations. After the

completion of the survey questionnaires, the paper was checked, tallied, interpreted, and analyzed in tabular form and synthesized utilizing the Statistical Package for the Social Sciences (SPSS).

Data-Analysis Procedure

The data collected from the survey were analyzed using the Statistical Package for the Social Sciences (SPSS) software. Data were initially inputted in Google Sheets and then transferred to SPSS for further analysis.

Frequency and percentage count. This was used to determine the refiller's work experience and training.

Experience was categorized by computing the mean average (2.66 years) and subsequently dividing it into three distinct categories: below 1 year, 1-3 years, and more than 3 years.

Knowledge scores were categorized based on the mean average of the result (12.47 points). It was divided into three categories: Low (0-11 points), Moderate (12 to 13 points), and High (14 to 15 points).

Compliance was categorized based on the mean average of the result (4.55). It was divided into three categories: Below Average (1.0 - 4.25), Average (4.26 - 4.75), and Above Average (4.76 - 5.0).

Spearman's rho test. It is set at a significance level of 0.05 and is used to determine the relationship between two categorical variables when analyzing the relationship between the knowledge and sanitation practices of providers.

Statistical Matrix

Table 1

Descriptive Statistics of the Variables

Name of Variable	Level of Measurement	Statistical Test
Antecedent (Work Experience & Training)	Nominal	Frequency and Percentage count

Table 2

Statistical Matrix among Variables

Independent	Dependent	Statistical Measure of Relationship
Knowledge (Scale)	Compliance (Scale)	Spearman's rho

Chapter 4

Results and Discussion

This chapter presents the statistical findings and analysis of results, and discussions supporting data. The data were collected among 136 Refillers of Selected Water Refilling Stations in districts Jaro I, Jaro II, and Mandurriao in Iloilo City. The findings are discussed in the following areas: respondents' demographic profile, duration of work experience, training attended, level of knowledge, compliance on health sanitation practices, and the relationship between knowledge and compliance.

Respondents' Demographic Profile Distribution

Table 3 presents the frequency distribution of the 136 respondents when grouped based on demographic profile as age, sex, and education. The data shows that the highest portion of the respondent's characteristics were aged 26-35, male, and most of the refillers were from college level.

When respondents were grouped according to age, those with 25 or below of age, made up 43 or 31.6% of the population. Moreover, those with 26-35 of age made up 56 or 41.2% of the population. Lastly, those with 36 or above of age, made up 37 or 27.2% of the population.

When respondents were grouped according to sex, males are dominant which consists of 93 respondents or 68.4% of the population, while only 43 respondents or 31.6% of the population are females.

In terms of education, refillers with an elementary level of education makeup 11 or 8.1% of the population; 41 respondents or 30.1% of the population for those with junior high school level of education; 34 respondents or 25% of the population for those

with senior high school level of education; and, 50 respondents or 36.8% of the respondents for those with college level education.

Table 3

Distribution of the respondents according to demographic profile

Categories of Variables	f	%
Age:		
25 or below	43	31.6
26-35	56	41.2
36 or above	37	27.2
Sex:		
Male	93	68.4
Female	43	31.6
Education:		
Elementary	11	8.1
Junior High School	41	30.1
Senior High School	34	25
College	50	36.8

Respondents' Experience Distribution

From Table 4, participants below one year of experience constitute the majority, with a frequency of 54 participants, accounting for 39.7%. Moving on, those with one to three years of experience make up 44 participants, representing 32.4% of the total 136 participants. While participants with more than three years of experience total 38,

contributing to 27.9%. The sum of these frequencies appropriately equals the total sample size of 136, with each percentage reflecting the proportional distribution within their respective experience categories.

Table 4

Distribution of the respondents according to experience

Categories of Variables	f	%
Experience		
Below 1 year	54	39.7
1-3 years	44	32.4
More than 3 years	38	27.9
Total	136	100
Mean= 2.6 years Minimum=.08 Maximum = 12 S.D= 3.039		

Respondents' Training Distribution

Table 5 shows the distribution of respondents according to the training they have attended which reveals that a significant portion of the participants have engaged in training activities. Among the respondents, 111 individuals, comprising 81.6% of the total sample, have participated in training sessions. Conversely, 25 respondents, representing 18.4% of the total sample, have not attended any training.

Table 5*Distribution of the respondents according to trainings attended*

Categories of Variables	f	%
Training		
Without	25	18.4
With	111	81.6
Total	136	100

In summary, the top five items with high scores in the Level of Knowledge of Refiller on Health Sanitation Practices in Water Refilling Station, based on the study of Espinosa et al. (2021), agree that cross-contamination can be reduced and improved by health sanitation practices by promoting a healthy living environment and preventing the spread of disease. Some of these behaviors include maintaining clean and uncontaminated water sources, wearing personal protection equipment, disposing of trash properly, and practicing good personal hygiene. In order to have a clean and safe source of water, it is also mentioned that the business owners are aware of and in compliance with the proper sanitary codes imposed by local government representatives.

This implies that the refillers who refill at the water refilling stations have a better understanding of health and sanitation procedures and follow regulations to ensure consumers acquire safe and clean water. They also have a greater capacity to follow these procedures diligently.

Refillers' Knowledge Level Distribution

From table 6, it displays the test results for 136 respondents regarding their knowledge on the health sanitation code. The distribution of scores is as follows: 44 respondents (32.4%) got a score between 0 to 11; 39 respondents (28.7%) got a score between 12 to 13; and, fifty-three respondents (39%) got a score between 14 to 15. A total of 136 respondents (100%). With a mean of 12.5%, minimum of 6%, maximum of 15% and a standard deviation of 2.076%

This agrees with the findings of Sridhar et al. (2020), Hidayah, E. N., et al. (2021), Berhe et al., (2020) regarding health sanitation having knowledge about proper sanitation and clean environment plays a vital role in producing clean water for the people to drink and consume in their everyday life. This indicates that the security and quality of the consumable water can be guaranteed by someone with sufficient knowledge of operating the water refilling station. In order to maintain a safe and hygienic environment that promotes general well-being and prevents the spread of infectious diseases, people must have a thorough understanding of health sanitation. This understanding allows individuals to grasp the different aspects of proper sanitation methods.

This also aligns with the findings of Zahayu Yusof et al. (2019), where they highlight that a significant portion (35%) of employees have more extensive history in the field. This could indicate a level of expertise and institutional knowledge among this segment of the workforce, and most likely granting them a stronger knowledge of the intricacies involved in upholding the water refillers' safety and quality standards.

Table 6*Distribution of the refillers according to their level of knowledge*

Categories of Variables	f	%
Level of Knowledge		
0-11	44	32.4
12 to 13	39	28.7
14 to 15	53	39
Total	136	100

Mean= 12.5 Minimum= 6 Maximum = 15 S.D= 2.076

Refillers' Compliance Level Distribution

Table 7. It displays the distribution of scores among refillers regarding compliance. 19 respondents (14%) were categorized as below average, while 64 respondents (47.1%) fall within the average classification. Furthermore, 53 respondents (39%) are classified as above average in terms of compliance.

These findings align with the study conducted by Sari, S., Faisal, M., et al. (2020), which emphasizes ensuring regular and systematic training for both owners and refillers can enhance their skills, not only improving knowledge but also shaping attitudes, thereby increasing compliance with standards and regulations. Furthermore, local authorities should schedule regular inspections of drinking water refilling stations to ensure compliance with production and raw water quality standards. Innovative cleaning methods for refill gallons and outlet taps in drinking water refilling stations are vital to prevent water recontamination, and maintaining water treatment methods and adhering to SOPs are crucial for drinking water refilling station owners to ensure quality control.

In addition, the findings align with the study of Nurang et al. (2020). Emphasizes that the absence of effective implementation of supervision management in water refilling stations has an adverse effect on bacteriological quality, which is unacceptable, and operators should cease operational permits if they violate safety and hygiene standards. Practices such as handwashing before carrying out work, checking health status every six months, and the use of formal work clothes included in food handler courses should be strictly followed.

Table 7

Distribution of refillers according to their Level of Compliance

Categories of Variables	f	%
Level of Compliance		
Below Average (1.0 - 4.25)	19	14
Average (4.26 - 4.75)	64	47.1
Above Average (4.76 - 5.0)	53	39
Total	136	100

Mean= 4.55 Minimum= 2.40 Maximum = 5 S.D= .498

Relationship between experience and knowledge of the refillers

From Table 8, this illustrates the relationship between experience and knowledge among refillers. 21 individuals (38.9%) have an experience of below one year, ranging from 0-11 on the knowledge scale. Nine participants (20.5%) have an experience of one to three years, scoring between 12-13. Additionally, 16 refillers (42.1%) had an experience of more than three years, scoring between 14-15. These findings suggest a

weak relationship between experience and knowledge among refillers in selected water refilling stations.

Analysis of the relationship between knowledge and experience reveals a weak positive correlation, as indicated by the Spearman's rho coefficient of 0.276. This suggests that as experience increases, there is a tendency for knowledge levels to increase as well, although the relationship is not notably strong. Importantly, the statistical significance of this relationship is confirmed by a p-value of 0.040, indicating that the observed correlation is unlikely to be due to random chance. Overall, the data highlight a notable but modest association between knowledge and experience among the respondents, underscoring the potential influence of experience on knowledge acquisition within the surveyed population.

This is in line with a study by Zahayu Yusof et al. (2019), which found that experience levels correlate with knowledge gain. This means that refillers with fewer than a year of experience still lack basic knowledge of sanitary procedures. Refillers with one to three years of experience become more knowledgeable, indicating that they are capable of operating the water refilling station. The refillers who have worked for more than three years may exhibit a level of knowledge and expertise that is indicative of their level of experience in handling the water refilling station within the workforce.

Table 8*Relationship between experience and knowledge of the refillers*

Variables	Knowledge							
	0-11		12-13		14-15		Total	
	f	%	f	%	f	%	f	%
Experience								
Below 1 year	21	38.9	19	35.2	14	25.9	54	100
1 to 3 years	12	27.3	9	20.5	23	52.3	44	100
More than 3 years	11	28.9	11	28.9	16	42.1	38	100

Spearman's rho =.276 (weak relationship) p=.040 (significant)

Variation in Refillers' Knowledge Levels Based on Attended Trainings

Table 9 illustrates the difference in the level of knowledge of the refillers when they were grouped into trainings attended among refillers. 25 respondents did not attend any trainings (\bar{x} = 11.04, sd = 2.39), and 111 respondents attended training (\bar{x} = 12.8, sd = 1.86). Analysis reveals that there is a significant difference in the level of knowledge of the respondents when they are grouped into trainings attended with a p-value of .000 (standard alpha $p > 0.05$). This implies that there is a direct relationship between knowledge and trainings attended; when refillers attend trainings, their level of knowledge also increases.

The results presented in Table 9 align with the study conducted by Lengkong et al. (2019), who describe work experience and training as transformative processes that enhance learning and foster positive behavioral traits. Similarly, Foster and Karen et al. (2001) emphasize that a lack of competencies and understanding impedes job performance, highlighting the importance of training to improve proficiency, which is

supported by the significant knowledge gain observed in the study. Additionally, Molina et al. (2021) underscore the necessity of structured programs in achieving health and sanitation targets, suggesting that training leads to better knowledge and practices, consistent with the table's results.

Huang et al. (2021) also affirm the role of education in promoting General Health Knowledge (GHK) and achieving Sustainable Development Goals (SDGs), further corroborating the significant impact of training on knowledge enhancement demonstrated in this study.

Table 9

Difference in the level of knowledge of the refillers when they are grouped into trainings attended

Training	N	Mean	S.D	p-value	Interpretation
Without	25	11.04	2.39		
With	111	12.8	1.86	.000	Significant
Total	136	12.48	2.08		

Relationship between knowledge and compliance of the refillers

Table 10 illustrates the relationship between knowledge and compliance among refillers. 12 individuals (27.3%) scored below average, ranging from 0-11 on the knowledge scale. 22 participants (56.4%) achieved an average classification, scoring between 12-13. Additionally, 26 refillers (49.1%) were classified as above average, scoring between 14-15. Spearman's Rho analysis reveals a weak correlation (Spearman's rho = 0.292) between compliance and knowledge levels, suggesting that as knowledge levels increase, there is a tendency for compliance to improve as well.

This relationship is statistically significant ($p = 0.001$), indicating that it is unlikely to occur by random chance. Overall, the data highlights a positive association between compliance and knowledge levels among the respondents. It implies that a higher level of knowledge may contribute to better compliance with established practices or guidelines. Thus, indicating a direct relationship between knowledge and compliance within this demographic.

The relationship between knowledge and compliance observed in Table 8 can be contrasted with several findings from related literature. In the study conducted by Lengkong et al. (2019), work experience was identified as a transformative process fostering learning and the development of positive behavioral traits. This supports the idea that both knowledge and practical experience contribute to compliance with health and sanitation standards.

Molina et al. (2021) highlighted the critical role of knowledge in achieving health and sanitation targets at the local level. Their study revealed gaps in meeting sanitation targets despite the implementation of national and global guidelines, emphasizing the need for increased knowledge and adherence to these standards. This aligns with the findings in Table 8, where higher knowledge levels correlated with better compliance.

Espinosa et al. (2021) reported that a significant proportion of water refilling stations failed to comply with proper sanitation practices, despite routine inspections. This lack of compliance could be attributed to insufficient knowledge and training, underscoring the importance of education in improving compliance rates. Similarly, Nurlang et al. (2020) found that the absence of effective supervisory management and regular training adversely affected the bacteriological quality of water in refilling depots.

Overall, these studies reinforce the positive association between knowledge and compliance observed among the refillers. Both knowledge and work experience play crucial roles in enhancing compliance with health and sanitation practices, suggesting that targeted educational interventions and continuous training can lead to better adherence to established guidelines.

Table 10

Relationship between knowledge and compliance of the refillers

Variables	Compliance								
	Below Average (1.0 - 4.25)		Average (4.26 - 4.75)		Above Average (4.76 - 5.0)		Total		
	f	%	f	%	f	%	f	%	
Knowledge									
0-11	12	27.3	16	36.4	16	36.4	44	100	
12 to 13	6	15.4	22	56.4	11	28.2	39	100	
14 to 15	1	1.9	26	49.1	26	49.1	53	100	
Total	19	14	64	47.1	53	39	136	100	

Spearman's rho =.292 (weak relationship) p=.001 (significant)

Chapter 5

Summary, Findings, Conclusions, and Recommendations

This chapter is made up of the following parts: (1) Summary; (2) Major Findings, (3) Conclusions; and (4) Recommendations.

Summary

In this study, the researchers aimed to explore the level of knowledge and compliance among refillers in different water refilling stations in Iloilo City. The study was conducted through a researcher-developed questionnaire in October 2023. It surveyed refillers from all water refilling stations in districts of Jaro I, Jaro II, and Mandurriao of Iloilo City to assess their knowledge and compliance with the health sanitation code of the Philippines. The goal was to determine if these stations provided potable water and have sufficient sanitary facilities to prevent the transmission of infectious diseases, ultimately aiming to reduce morbidity and mortality rates. The data were analyzed using SPSS. Descriptive (frequency, percentage, mean, standard deviation) and inferential statistics (chi-square) were used.

Major findings

1. The highest portion of the respondent's characteristics were aged 26-35, male, and most of the refillers were from college level. In terms of age, those with twenty-five or below of age, made up 31.6% of the population. In terms of sex, males are dominant which consists of 68.4% of the population. Lastly, in terms of education, refillers with an elementary level of education made up 8.1% of the population.

2. Participants with those below 1 year constitute the majority (39.7%) among refillers of selected water refilling stations in Iloilo City, and those with 1-3 years and more than 3 years of experience accounting for 32.4% and 27.9%, respectively. This highlights the significance of considering the varying levels of experience when assessing knowledge and compliance to health sanitation practices in water refilling stations.
3. A significant proportion of respondents have actively participated in training sessions. Specifically, 81.6% of the total sample have engaged in various training opportunities, indicating a widespread enthusiasm for acquiring skills and knowledge within the surveyed population. Conversely, while the majority have embraced training activities, a smaller portion of respondents, accounting for 18.4% of the total sample, have not attended any training sessions.
4. The study underscores that a significant proportion of respondents, constituting the majority at 67.6%, exhibited a high level of knowledge regarding health sanitation practices among water refilling station refillers. Additionally, 28.7% of respondents demonstrated moderate knowledge, while a smaller group, representing 3.7%, indicated a lower level of knowledge. This distribution emphasizes the predominant high level of knowledge within the surveyed population of 136 participants.
5. Compliance with health sanitation practices was assessed using a 15-item questionnaire featuring statements indicating various aspects of health sanitation. The compliance of Presidential Decree 856 (Sanitation Code of the Philippines) was high, with 80.9% of respondents always adhering to this regulation. Majority of respondents consistently practiced proper water filtration processes to avoid waterborne illnesses such as E. coli, salmonella, typhoid fever, cholera, and hepatitis A or E, with 79.4% always adhering to these practices. Bringing health

cards to the water refilling station was a common practice among respondents, with 75% always bringing them. The inspection of container contents for possible debris before sealing was prioritized by a significant majority of respondents, with 74.3% always inspecting the container. Flushing out residues before refilling the water container to prevent bacterial contamination was a common practice among respondents, with 74.3% always flushing out residues.

6. The study reveals that refillers with less than 1 year of experience tend to score lower on the knowledge scale (0-11), while those with 1-3 years of experience score slightly higher (12-13), and those with over 3 years of experience show the highest knowledge scores (14-15). This suggests a weak relationship where prolonged experience may contribute to better knowledge acquisition. The Spearman's rho coefficient of 0.276 and a p-value of 0.040 indicated that, on average, as refillers' experience increases, there is a tendency for their knowledge levels to rise, underscoring the potential impact of experience on knowledge acquisition in health sanitation practices within this population.
7. The research findings indicated a significant difference in the level of knowledge of the respondents when they were grouped into trainings attended with a p-value of .000 (standard alpha $p > 0.05$). The study observed that twenty-five respondents did not attend any trainings ($x = 11.04$, $sd = 2.39$), and one hundred eleven respondents attended trainings ($x = 12.8$, $sd = 1.86$). The analysis implies that there is a direct relationship between knowledge and trainings attended; when refillers attend trainings, their level of knowledge also increases.
8. The research findings indicated a significant relationship between knowledge and compliance among refillers. The study observed that while twelve individuals (27.3%) scored below average on the knowledge scale (ranging from 0-11), twenty-two participants (56.4%) were classified as average (scoring between 12-

13), and twenty-six refillers (49.1%) were classified as above average (scoring between 14-15). Analysis using Spearman's rho revealed a weak correlation ($\rho = 0.292$) between compliance and knowledge levels. However, this relationship was statistically significant ($p = 0.001$), suggesting that higher knowledge levels are associated with improved compliance.

Conclusions

Based on the findings of the study, the following conclusions have been drawn:

1. A significant portion of the respondent's characteristics were aged 26-35, male, and most of the refillers were from college level. These findings reveals that most refillers in this demographic range are young adults pursuing or having completed higher education which reflects a trend towards a more educated and potentially career-oriented segment of the population engaging in refilling practices.
2. A significant portion of the sampled population in the study consisted of individuals with less than one year of experience. This concentration of participants in the lower experience bracket, accounting for 38.9%, implies a notable presence of newcomers or those with limited tenure in the workforce. Additionally, the distribution indicated a relatively smaller proportion of individuals with more extensive experience, emphasizing the prevalence of less experienced individuals within the studied context of water refilling stations.
3. The analysis of training participation rates underscores the prevalent culture of continuous learning and professional development among the surveyed population. The high level of engagement in training activities, as evidenced by the significant majority of respondents, reflects a proactive approach to skill enhancement and knowledge acquisition within the field.

4. The findings indicated that most water refilling station refillers have a positive perception of health sanitation practices. The observed patterns of knowledge distribution highlight the importance of tailored strategies for reinforcing and standardizing awareness levels across this occupational group. These findings contribute to the larger goal of improving hygiene practices and public health in water refilling station settings.
5. The findings indicated a high level of compliance with health sanitation practices among refillers at the water refilling stations. This suggests that refillers in Iloilo City are committed to maintaining health and sanitation standards within these establishments.
6. The research shows the complex relationship between experience and knowledge among water refillers in selected stations in Iloilo City. The findings reveal a weak yet statistically significant positive correlation, indicating that prolonged experience is associated with higher knowledge scores in health sanitation practices. It is essential to acknowledge, however, that this relationship is not strong. This underscores the importance of considering both experience and knowledge when developing strategies to enhance compliance with health sanitation practices among water refillers. Recognizing these suggested interactions can inform targeted interventions for sustained improvements in health safety within this critical industry.
7. The findings indicated that most refillers were equipped with trainings which increases their knowledge with proper health sanitation practices. It is notable that the majority of the refillers were trained, however, there is still room for improvement in certain aspects of their knowledge, particularly in understanding and implementing advanced safety measures and staying updated on the latest developments in health sanitation practices for some refillers. These results

emphasize the importance of training in enhancing knowledge levels among refillers to promote better sanitation practices.

8. The research underscores a notable association between knowledge and compliance among refillers in selected water refilling stations in Iloilo City. Despite the varying levels of knowledge observed among participants, it suggests that higher levels of knowledge tend to correlate with improved compliance with established practices or guidelines. This association, though weak, is statistically significant, indicating that it is unlikely to occur by random chance. These results emphasize the importance of enhancing knowledge levels among refillers to promote better adherence to established standards, ultimately contributing to improved practices.

Recommendations

Based on the findings the researchers recommend the following:

1. **Community.** In order to maintain public health and safety, it is crucial that water refilling stations adhere to strict regulations set by government agencies on cleanliness and hygienic practices. To prevent contaminated water that may contain diseases, they should also select a clean water refilling station.
2. **Consumers.** To ensure that the water they use is safe and in compliance, consumers should select water refilling stations with reputable certificates for safety and water quality standards.
3. **Refiller.** As water refillers working in water refilling stations are tasked with ensuring that people have access to clean and safe drinking water, they should place a high priority on gaining an in-depth understanding of water purification procedures, hygiene standards, and regulatory compliance. Furthermore, it lies

on their knowledge in managing the water refilling station correctly and their ability to prevent any potential cross-contamination.

4. **City Health Office.** In order to guarantee that water refilling stations follow proper hygiene and safety standards and that the safety of the public and trust in the safety of water refilling stations within the community are protected, the city health office should place a high priority on implementing regular inspections, training programs about water refilling station, strict implementation of health sanitation practices, and prioritizing the health of the community.
5. **Department of Health.** It is crucial to make sure that refillers at water refilling stations are aware and follow Department of Health regulations in order to uphold both good hygiene practices and public health standards. Refillers should receive regular training on proper sanitary procedures and their significance, maintenance of equipment and cleaning, and the importance of strictly complying to health regulations in order to prevent health problems.
6. **Lawmakers/City Councilors.** To protect everyone's right to clean and safe water, lawmakers should place a high priority on establishing strict regulations that guarantee water refilling stations adhere to safety and quality standards. In order to guarantee that refillers have the skills and knowledge required to handle water safely, as well as to expand their knowledge and improve their abilities in handling the water refilling station, mandatory training and certification programs are in place.
7. **Local Chief Executives.** To maintain consumer safety and trust in the water supply, local chief executives may recommend implementing routine inspections, inspections of water refilling stations to verify adherence to safety and quality standards, raising awareness of health issues, and using licensed and compliant refillers. In order to improve their understanding of correct practices and laws and

achieve positive results when it comes to providing high-quality services and safe and high-quality water, they should also encourage refillers to participate in training and certification programs.

8. ***Future Researchers.***

- a. Evaluate the communities' awareness, compliance, and attitudes toward environmental responsibility and waste disposal near water refilling stations.
- b. A comparative study in determining the sources of untreated water to water that has been filtered to evaluate how well filtration techniques remove microorganisms.
- c. Examine factors driving behavior change toward working conditions and evaluate refillers' knowledge, attitudes, and actions regarding the dangers associated with bare hand contact with water container surfaces.
- d. Investigating the attitudes and views of the refillers at water refilling stations, as well as identifying barriers to compliance and methods for behavior modification
- e. Examine ways to raise public knowledge and comprehension of the dangers of drinking water contaminated with radioactive materials.
- f. Widen the scope of the study to incorporate water refillers outside of Iloilo City and examine their compliance with regulations and level of knowledge.
- g. Encouraging future researchers to conduct similar research on the Knowledge and Compliance to Health Sanitation Practices among Water Refillers.

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Appendix A

Letter of Approval to the Dean



CENTRAL PHILIPPINE UNIVERSITY
COLLEGE OF NURSING
Jaro, Iloilo City, Philippines



December, 2022

PROF. MELBA SALE

OIC

College of Nursing

Central Philippine University

Dear Ma'am:

Greetings of Peace and Prosperity!

We are the Group 4 of BSN-3G from Central Philippine University, enrolled in nursing research. In partial fulfillment of the requirements for the degree of Bachelor of Science in Nursing, we will be conducting a research study entitled "**Knowledge and Compliance to Health Sanitation Practices among Refillers of Water Refilling Stations in Iloilo City.**" We would like to ask for your permission to conduct a quantitative face-to-face survey study regarding the knowledge and compliance of refiller with health sanitation practices at water refilling stations in Iloilo City.

The general objective of this study is to determine the relationship between knowledge and compliance with health sanitation practices at water refilling stations in Iloilo City.

Specifically, this study aims to determine:

1. the duration of work experience for the refillers employed within water refilling stations.
2. if the refillers have undergone formal training for operating a water refilling station.
3. the level of knowledge on the health sanitation practices among refillers of water refilling stations.
4. the level of compliance to the health sanitation practices among refillers of water refilling stations in Iloilo City.
5. if there is a significant relationship between the knowledge on and compliance to health sanitation practices among refillers of water refilling stations in Iloilo City.

In this regard, we would like to request that your kind office enable us to conduct our survey. Informed consent will be distributed to the respondents, before the conduct of the study, to have permission in their knowledge and compliance of the health sanitation code.

Upon completion of the study, we undertake to provide the university with a bound copy of the full research proposal. We are looking forward to your favorable action in this regard.

Thank you very much and God bless!

Respectfully yours,

ZAHRA O. QURESHI
Research Team Leader

Noted By:

DR. RAYMUND H. PARTISALA
Research Adviser

Approved By:

PROF. MELBA C. SALE
Dean, CPU College of Nursing

Appendix B

Informed Consent

Informed Consent

Research Title: Knowledge and Compliance to Health Sanitation Practices among Refillers of Selected Water Refilling Stations in Iloilo City

NAME OF PRINCIPAL INVESTIGATOR: ZAHRA O. QURESHI

This Informed Consent Form has two parts:

- I. Information Sheet**
- II. Certificate of Consent**

I. Information Sheet

Introduction

The author(s) of this study is/are going to conduct a descriptive-correlational design about the knowledge and compliance with health sanitation practices of water refilling stations in Iloilo City. This study is in partial fulfillment of the requirements for our subject, NCM 3113: Nursing Research.

Please read this Explanatory Statement in full before deciding whether or not to participate in this research. If you would like further information regarding any aspect of this project, you are encouraged to contact the project leader, Zahra Qureshi, via the following email address or cell phone number: zahra.queshi-20@cpu.edu.ph/09216563063.

By taking part, you are agreeing that you have read and understood the information about the study below. Please ensure you have read and understood this information before continuing.

Purpose of the Study

This study aims to determine the relationship between knowledge and compliance with health sanitation practices at water refilling stations in Iloilo City.

Specifically, this study aimed to determine:

1. the duration of work experience for the refillers employed within water refilling stations.
2. if the refillers have undergone formal training for operating a water refilling station.
3. the level of knowledge on the health sanitation practices among refillers of water refilling stations.
4. the level of compliance to the health sanitation practices among refillers of water refilling stations in Iloilo City.
5. if there is a significant relationship between the knowledge on and compliance to health sanitation practices among refillers of water refilling stations in Iloilo City.

Who are we looking for?

As mentioned, each study in this project has a target group participant. The common characteristics of all participants in this study are the water refilling stations located in Iloilo City.

Type of Research Intervention

This study will utilize researcher-made questionnaires to elicit information from the respondents to determine their knowledge of and compliance with health sanitation practices at water refilling stations in Iloilo City.

The Respondents

The respondents of the study, upon consenting to participate, are expected to share their knowledge and compliance with health sanitation practices at water refilling stations in Iloilo City. The number of respondents will be determined based on a Total or Complete Enumeration Method sampling technique. The respondents will not receive any tokens or compensation for participating in the study. Moreover, the participation of the respondent is voluntary, and they may withdraw anytime without penalty or loss of benefit to which they are entitled.

Procedures

The respondents will be contacted personally and will be given consent forms along with the questionnaires. Questionnaires will be given to respondents and collected personally by the researchers.

Duration

This study may take around 10 to 15 minutes to answer the given questionnaires.

Risk

There are no foreseeable risks for study participants when taking part in the study other than time spent on the survey and potential discomfort. Should you feel uncomfortable and want to leave the study, you are free to do so without any consequences.

Benefits

The findings of this study will benefit the following:

Community. The findings of this study will greatly benefit the community by increasing awareness around the community, particularly where people can acquire drinkable water and the sanitation process is done by water refilling stations in their area. This also provides them with safety and protection by guaranteeing that the water source they obtain from the water refilling station is clean. This is a significant help to the community, especially the vulnerable sectors that are susceptible to sickness and want to avoid it.

Consumers. Consumers will be able to use the information from this study to be more attentive to the health sanitation practices of the water refilling stations they purchase from in Iloilo City in order to ensure the health and safety of their family members as well as meet their needs and prevent illness.

Refiller. The research findings will be used to further strengthen the staff's understanding of how to handle proper sanitation of water refilling stations, the prevention of diseases caused by improper filtration of drinking water and practices, and how to improve the quality and safety of their water refilling stations in order for the water they generate to be safe to drink and consumable by the community. Furthermore, the value of these research findings to the Refiller is that they will acquire the trust of the community by providing safe drinking water.

City Health Office. The information gathered in this research study will aid in the efficient formulation and implementation of policies, plans, programs, and projects aimed at improving the health of city residents, as well as the execution and enforcement of all public health-related laws, ordinances, and regulations.

Department of Health. The results of this study will benefit the DOH by providing data that will serve as a basis for implementing mitigation and other health-

related programs.

Lawmakers/City Councilors. The findings of this study will assist councilors in drafting city ordinances and disseminating them to the community, ensuring that the quality of water sanitation processes is maintained.

Local Chief Executives. The research findings of this study will assist them in strengthening policy guidelines and enforcing proper health sanitation practices at all water refilling stations.

Future Researchers. The information acquired and the conclusions of this study may be used as a tool by other future researchers to further extend relevant data on the knowledge and compliance with health sanitation practices of water refilling stations in Iloilo City for their future research attempts. Additionally, this can help future researchers generate interest and widen approaches in the same area. The information acquired will also help future researchers evaluate the study before conducting another in the same area.

Reimbursements

The respondents will not be given any amount or token for participating in the study.

Confidentiality

Respondents will be informed of their answers, which will be treated with the utmost confidentiality; they will not be divulged to anybody and will be solely utilized for research purposes. At the conclusion of the study, recorded answers will be kept by the researchers for safekeeping.

Sharing of results

The results will be put in a report to be submitted to the Central Philippine University College of Nursing. The results will be presented in an oral defense as a requirement of the course. The information from this study will be disseminated and distributed after the analysis. The confidentiality and anonymity of the respondents will be upheld by avoiding the use of their names when the results are discussed. The respondents are allowed to access the results of the study as they wish. They will be provided with all the results pertaining to the study in which they are involved. Moreover, they will be informed in a timely manner if information becomes available.

Participants' Rights to Refuse and Withdraw

The respondents' participation is entirely voluntary, and they may withdraw from the study anytime they wish.

II. Certificate of Consent

I, _____, volunteer to participate in descriptive-correlational research conducted by Qureshi, Zahra; Rafols, Maydane Lyrah; Ranario, Javen; Rasgo, Erick Joshua; Rico, Ericka Iris; and Robles, Gwyn, of the Bachelor of Science in Nursing from Central Philippine University.

I understand that the research study is designed to gather information about the knowledge and compliance to health sanitation practices of water refilling stations in Iloilo City.

1. My participation in this research study is completely voluntary, and I do understand that I will not be paid for my time and participation. I also understand that I have the freedom to withdraw or discontinue my participation at any time without any penalty.

2. Participation involves questionnaires from Central Philippine University. The questionnaire will be sent after answering. If I don't want to answer, I will not be able to participate in this study.
3. I understand that the researcher will not identify me by name in any reports using the information obtained from this questionnaire and that my confidentiality as a participant in this study will remain secure. Subsequent use of records and data will be subjected to standard policies that protect the anonymity of the participants.
4. Given that I am personally submitting anonymous data, it will not be possible to withdraw my answers after they have been submitted.
5. I understand that this research study has been reviewed and approved by the CPU Research and Development Center, Jaro, Iloilo City.
6. I have read and fully understand the explanation provided to me. I have had all the questions answered to my satisfaction, and I voluntarily agree to participate in this study.
7. I have been given a copy of this consent form.

Printed Name with signature

Date

Please note that you can stop the survey at any time. There are no consequences whatsoever if you do.

By ticking the box, you are agreeing that you are at least 18 years old, that you have read the information about the project and the particular study, and that you have voluntarily agreed to take part in it.

Appendix C

Curriculum Vitae



Overview

Name: Zahra O. Qureshi

Age: 21 years old

Address: Brgy. Pandan, Dingle, Iloilo

I am an ambitious and dedicated student currently pursuing a bachelor of science in nursing. I am a fast learner, adaptable, and possess excellent communication skills. I am eager to gain practical experience and apply my theoretical understanding in real-world settings.

Education

Elementary Level

Degree Title: Elementary Graduate

School Name: Educare Foundation Secondary School

Achievements: With Honors

Junior High School Level

Degree Title: Junior High School Graduate

School Name: Colegio de la Inmaculada Concepcion, Hijas de Jesus

Achievements: With Honors

Senior High School

Degree Title: Senior High School Graduate

School Name: St. Paul University Iloilo

Achievements: With High Honors

College Level

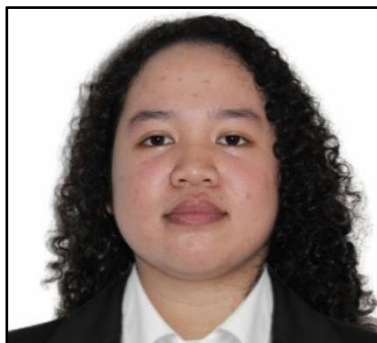
School Name: Central Philippine University

Course: Bachelor of Science in Nursing

Relevant Experience

- Underwent Red Cross seminar and training last 2018

- Former Science Technology Engineering and Mathematics (STEM) student of St. Paul University Iloilo
- Conducted a study of “Fermented Snail as liquid organic fertilizer”
- Conducted a study on the "Knowledge and Compliance to Health Sanitation Practices among Refillers of Water Refilling Stations in Selected Districts in Iloilo City".

**Overview**

Name: Maydane Lyrah P. Rafols

Age: 22 years old

Address: M.H. Del Pilar St. Dumangas, Iloilo

A hardworking and dedicated individual ready to utilize skills and passion to face challenges in life.

Education

Elementary Level:

Degree Title: Elementary Graduate

School Name: Dumangas Christian School-Tabucan (S.Y. 2012 - 2013)

Junior High School Level:

Degree Title: Junior High School Graduate

School Name: Central Philippine University (S.Y. 2017- 2018)

Senior High School Level:

Degree Title: Senior High School Graduate

School Name: Central Philippine University (S.Y. 2019 - 2020)

College Level:

School Name: Central Philippine University

Course: Bachelor of Science in Nursing

Relevant Experience

Former Science Technology Engineering and Mathematics (STEM)-NMPL student of Central Philippine University

Senior High School - Conducted a study of "LEADERSHIP ROLES OF ELECTED BARANGAY OFFICIALS AT BARANGAYS DUNGON A, B, AND C IN MOTIVATING ACTIVE COMMUNITY PARTICIPATION IN SOLID WASTE MANAGEMENT"

College (BSN)- Conducted a study about the "Knowledge and Compliance to Health Sanitation Practices among Refillers of Water Refilling Stations in Selected Districts in Iloilo City".

**Overview**

Name: Javen P. Ranario

Age: 22 years old

Address: Brgy. Capul-an, Mina, Iloilo

Possesses a strong commitment to generating high-quality work, time management skills for working on tasks, organizational skills, communication skills, and the capacity to contribute to the team for efficient teamwork.

Education:

Elementary Level:

Degree Title: Elementary Graduate

School Name: Pototan Pilot Elementary School (S.Y. 2013-2014)

Junior High School Level:

Degree Title: Junior High School Graduate

School Name: Pototan National Comprehensive High School (S.Y. 2017- 2018)

Achievement: With Honors

Senior High School Level:

Degree Title: Senior High School Graduate

School Name: Central Philippine University (S.Y. 2019-2020)

Achievement: With Honors

College Level:

School Name: Central Philippine University

Course: Bachelor of Science in Nursing

Relevant Experience

Experienced in conducting research since Senior High School and have demonstrated to have the values, knowledge and enthusiasm necessary to learn something new.

Former Science Technology Engineering and Mathematics (STEM) student of Central Philippine University

Senior High School: Conducted a study of Utilization of Tsitsirika *Catharanthus roseus*, Linnaeus, 1798) Leaf Extract as Alternative Ingredient for Anti-microbial Liquid Handsoap Against *Staphylococcus* (*Staphylococcus aureus*, Ogston, 1880)

College: Conducted a study about the “Knowledge and Compliance to Health Sanitation Practices among Refillers of Water Refilling Stations in Selected Districts in Iloilo City”.

**Overview**

Name: Erick Joshua R. Rasgo

Age: 22 years old

Address: Brgy. Bakhaw Sur, Kalibo, Aklan

Demonstrates a strong commitment to delivering work of the highest caliber, as well as the skillful time management necessary for task completion. Exhibits organizational competence, proficient communication abilities, and a strong ability to build productive teamwork within the collaborative framework.

Education:

Elementary Level:

Degree Title: Elementary Graduate

School Name: Infant Jesus Academy (S.Y. 2012-2013)

Junior High School Level:

Degree Title: Junior High School Graduate

School Name: Infant Jesus Academy (S.Y. 2016- 2017) Achievement: With Honors

Senior High School Level:

Degree Title: Senior High School Graduate

School Name: Infant Jesus Academy (S.Y. 2018-2019) Achievement: With Honors

College Level:

School Name: Central Philippine University

Course: Bachelor of Science in Nursing

Relevant Experience

Capable of carrying out research since senior high school, constantly demonstrating the necessary values, expertise, and excitement needed to pick up new abilities and information.

Former Science Technology Engineering and Mathematics (STEM) student of Infant Jesus Academy.

Senior High School: Conducted a study of “Perspective of Infant Jesus Academy students on Computer Games.

Experienced being an On the Job Trainee at MMG Clinics (Finance Department) in Aklan.

College: Conducted a study about the “Knowledge and Compliance to Health Sanitation Practices among Refillers of Water Refilling Stations in Selected Districts in Iloilo City”.

**Overview**

Name: Ericka Iris B. Rlco

Age: 22 year-old

Address: 121 Zerrudo St. Brgy. Sto. Rosario-Duran, Iloilo City

Dedicated and collaborative 4th year nursing student with a strong commitment to producing high-quality work. Demonstrates excellent organizational and communication skills, fostering effective teamwork and collaboration on research projects.

Education

Elementary Level:

Degree Title: Elementary Graduate

School Name: Colegio Del Sagrado Corazon De Jesus (S.Y. 2012-2013)

Junior High School Level:

Degree Title: Junior High School Graduate

School Name: Colegio De Las Hijas De Jesus (S.Y. 2017- 2018)

Senior High School Level:

Degree Title: Senior High School Graduate

School Name: Central Philippine University (S.Y. 2019-2020)

College Level:

School Name: Central Philippine University

Course: Bachelor of Science in Nursing

Relevant Experience

Former Science Technology Engineering and Mathematics (STEM) NMPL student of Central Philippine University

Junior High School - Conducted a study of "The Effects of Different Flavors of Bubblegum in Memorizing".

Senior High School - Conducted a study of "Antimitotic Inhibition of Alugbati (*Basella alba*) leaf extract on the Telophase stage of Meristematic onion (*Allium cepa*) root tip cell".

College (BSN) - Conducted a study about the "Knowledge and Compliance to Health Sanitation Practices among Refillers of Water Refilling Stations in Selected Districts in Iloilo City".

**Overview**

Name: Gwyn Felipe Robles

Age: 21 years old

Address: Cuartero, Capiz

A 4th year bachelor of science in nursing student currently taking up Nursing Research II at Central Philippine University, possessing excellent organizational ability, combined with strong interpersonal and communication skills. Adaptable and resourceful, with the ability to thrive in fast-paced and dynamic environments.

Education

Elementary Level

Degree Title: Elementary Graduate

School Name: Cuartero Central School

Achievements: 6th honorable mention

Junior High School Level

Degree Title: Junior High School Graduate

School Name: Cuartero National High School

Achievements: With Honors

Senior High School

Degree Title: Senior High School Graduate

School Name: Central Philippine University

Achievements: With Honors

College Level

School Name: Central Philippine University

Course: Bachelor of Science in Nursing



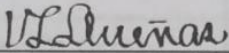
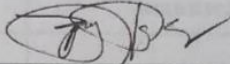
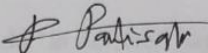
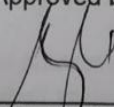
Relevant Experience

Former Science Technology Engineering and Mathematics (STEM) NMPL student of Central Philippine University

Senior Highschool: Conducted a study of "Acceptability of (Musa Acuminata Balbisiana, Colla 1820) Banana Peelings and (Cocos Nucifera, Linnaeus 1521) Coconut Oil as Alternative Components of Shoe Polish".

College: Conducted a study about the “Knowledge and Compliance to Health Sanitation Practices among Refillers of Water Refilling Stations in Selected Districts in Iloilo City”.

Appendix D
Certificate of Technical Review

	<p>Central Philippine University Jaro, Iloilo City College of Nursing <i>The First Nursing School in the Philippines, 1906</i> Bachelor of Science in Nursing</p>	
<p>ENDORSEMENT SHEET FOR ETHICS REVIEW (Technical Panel Approval Sheet)</p>		
<p>This undergraduate thesis proposal entitled <u>Knowledge and Compliance to Health Sanitation Practices among Refillers of Water Refilling Stations in Iloilo City</u> prepared and submitted by <u>Qureshi, Zahra; Rafols, Maydane Lyrah; Ranario, Javen; Rasgo, Erick Joshua; Rico, Ericka Iris; and Robles, Gwyn</u>, in partial fulfillment of the requirements for the degree of BACHELOR OF SCIENCE IN NURSING, has been presented in a Proposal Review on <u>April 14, 2023</u>.</p>		
<p>Further, the suggestions and recommendations of the technical panel have been complied with.</p>		
<p>This proposal is now recommended for ethical review.</p>		
 <hr style="width: 100%;"/> <p>Verna Lynn Dueñas Chair/Panelist</p>	 <hr style="width: 100%;"/> <p>Geoffrey C. Leysa Chair/Panelist</p>	
 <hr style="width: 100%;"/> <p>Raymund H. Partisala Adviser</p>		
<p>Approved by:</p>  <hr style="width: 100%;"/> <p>Prof. Melba M. Sale OIC Dean, College of Nursing</p>		

Appendix E
Plagiarism Scan Certificate



REVIEW, CONTINUING EDUCATION and CONSULTANCY CENTER

Central Philippine University

Jaro, Iloilo City

Tel. No. 329-1971 local 1008 email: rceccsec@cpu.edu.ph

Website: rcecc.cpu.edu.ph



March 06, 2023

C E R T I F I C A T I O N

This is to certify that the research proposal entitled “**KNOWLEDGE AND COMPLIANCE TO HEALTH SANITATION PRACTICES OF WATER REFILLING STATIONS IN ILOILO CITY**” by **Qureshi, Zahra O., Rafols, Maydane Lyrah P., Ranario, Javen P., Rasgo, Erick Joshua R., Rico, Ericka Iris B., Robles, Gwyn F.** has undergone Turnitin similarity checking with a passing percentage of **15%** and have passed the requirements (Chapters 1-3).

Prepared by:

PINKY E. LUTERO-TONGOL
Staff -in-charged

Approved by:

LENNY ROSE P. MUCHO, EdD.
Director, RCECC

Appendix F
Questionnaire



CENTRAL PHILIPPINE UNIVERSITY
COLLEGE OF NURSING
Jaro, Iloilo City, Philippines



Part I. Demographic Profile

1. Name (Optional): _____
2. Cell Phone Number (Optional): _____
3. Please provide your age as of your last birthday in years ____
4. What is your sex?
 - Male
 - Female
5. What is your highest educational attainment?
 - Elementary graduate
 - Junior High School graduate
 - Senior High School graduate
 - College graduate
6. Have you undergone formal training?
 - Yes
 - No
7. Number of months/years of work experience? _____

Disclaimer: We will keep completely confidential all information arising from surveys concerning individual respondents to which we gain access. We will not discuss, disclose, disseminate, or provide access to survey data and identifiers.

Part II. Level of Knowledge of Refiller on Health Sanitation Practices in Water Refilling Station

Directions: Please read each statement below carefully. Place a check mark (✓) in each of the following items if you think the statement is TRUE or FALSE.

1- True	2- False		
Level of Knowledge of Refiller on Health Sanitation Practices in Water Refilling Station		1 True	2 False
1.	The Presidential Decree 856 is the Code on Sanitation of the Philippines which the water refilling station must comply with.		
2.	Avoidance of practicing unsanitary actions (e.g. spitting inside the workplace, taking off gloves, mask and not wearing proper sanitary equipment) within the premises is not necessary to avoid cross contamination.		
3.	Disinfection of hands with alcohol after handling money or any foreign objects that will cause cross-contamination.		
4.	It is recommended to employ the use of personal protective equipment like facemasks, apron, gloves, and shoes with closed-toe protection, as well as hairnet. Also it is essential to keep proper hygiene practices like thorough handwashing with soap and water after using the bathroom.		
5.	Inspection of contents of the container for any possible debris such as dirt, insects or strands of hair before sealing it.		
6.	A dumping site outside the water refilling station is acceptable.		
7.	Touching any surfaces of the water container with bare hands is a sanitary action.		
8.	Before refilling the water container, flush out the residues of the remaining product to ensure there would not be any bacteria that may come in contact with the newly purified water.		
9.	Water is safe to drink despite being close to a radioactive source that is stored within a 10 meter radius.		
10.	Poor water filtration cannot cause water borne illnesses that can be found in water such as e.coli, salmonella etc. and cause typhoid fever, cholera, and hepatitis A or E.		
11.	Thorough sanitation of the water refilling area together with other Refiller is being done before beginning the business for the day.		

12. Well units are protected by fences and gates with locks to prevent possible contamination or damage to facilities by trespassers.		
13. Use of any solution in cleaning the exterior surface of the pump cylinders and drop pipe is acceptable.		
14. It is necessary to obtain a health certificate from the local health officer before the water refilling station starts operating.		
15. The water refilling stations do undergo an initial and periodic water examination to test for any radioactive or bacteriological contamination before they are operated and open to the public.		

Part III. Compliance of Refiller on Health Sanitation Practices in Water Refilling Stations.

Directions: Please rate each of the following items according to your desire or extent of compliance of Refiller on Health Sanitation Practices in Water Refilling Stations.

	5 - Always	4 - Often	3 - Sometimes	2 - Rarely	1 - Never
A. Compliance of Refiller on Health Sanitation Practices in Water Refilling Stations	5 Always	4 Often	3 Sometimes	2 Rarely	1 Never
1. I am complying with the Presidential Decree 856 (Sanitation Code of the Philippines).					
2. I avoid performing unhygienic practices within the facility (such as spitting in the workplace, removing gloves and masks, and not wearing proper hygiene equipment) to prevent cross-contamination.					
3. I regularly disinfect my hands with alcohol after handling money or any foreign objects that may cause cross-contamination.					
4. I utilize wearing a face mask, apron, gloves, protective footwear such as closed shoes, and a hair net, before entering the workplace, and maintain good personal hygiene, especially washing hands with soap and water after using the restroom. Washing is essential.					

5. I inspect the contents of the container for any possible debris such as dirt, insects or strands of hair before sealing it.					
6. I inspect the surroundings of the water refilling station if there is any dumping site.					
7. I avoid touching any surfaces of the water container with bare hands to avoid any unsanitary action.					
8. I flush out the residues of the remaining product before refilling the water container to ensure there would not be any bacteria that may come in contact with the newly purified water.					
9. I ensure that the location of our water refilling station is not close to any radioactive source or any radioactive material stored within a 25 meter radius. If so, it is safely enclosed with proper shielding.					
10. I practice the proper water filtration process to avoid any water borne illnesses that can be found in water such as e.coli, salmonella etc. and cause typhoid fever, cholera, and hepatitis A or E.					
11. I sanitize the water refilling area together with other refillers before beginning the business for the day thorough sanitation of the water refilling area together with other Refiller is being done.					
12. I ensure that completed well units are protected by fences and gates with locks to prevent possible contamination or damage to the facilities by trespassers					
13. I use chlorine solution in cleaning the exterior surface of the pump cylinders and drop pipe.					
14. I bring my health card with me to the water refilling station.					
15. I ensure there is no radioactive or bacteriological contamination in the					

water, we undergo an initial and periodic water examination before they are operated and open to the public.					
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Appendix G

Certificate of Research Instrument Validation



Central Philippine University
College of Nursing
Jaro, Iloilo city


CERTIFICATION OF RESEARCH INSTRUMENT VALIDATION (QUANTITATIVE RESEARCH)

This is to certify that the study entitled: Knowledge and Compliance to Health Sanitation Practices among Refillers of Water Refilling Stations in Selected Districts in Iloilo City, has undergone instrument validation. Necessary changes have been checked and approved.

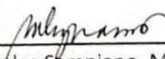
This certification is issued upon the request of the authors: Qureshi, Zahra; Rafols, Maydane Lyrah; Ranario, Javen; Rasgo, Erick Joshua; Rico, Ericka Iris; and Robles, Gwyn. As an expert of this subject, I have reviewed the instruments and its contents as to its appropriateness and accuracy based on the problem statement, objectives, conceptual framework, and operational definition of terms.

Issued this 6th day of June, 2023 to the above mentioned student researchers in compliance with their requirements in their research subject.

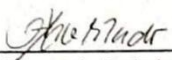
Respectfully,



Prof. Alvin John H. Gustilo, MAN, RN



Prof. Ma. Lourdes Sampiano, MAN, RN



Prof. Herme A. Borlado, MAN, RN

Appendix H

Findings of the Study

Table 1A

Distribution of refillers on items under knowledge

Items	Correct f	Incorrect f
1. Disinfection of hands with alcohol after handling money or any foreign objects that will cause cross-contamination.	133	3
2. It is necessary to obtain a health certificate from the local health officer before the water refilling station starts operating.	133	3
3. It is recommended to employ the use of personal protective equipment like facemasks, apron, gloves, and shoes with closed-toe protection, as well as hairnet. Also it is essential to keep proper hygiene practices like thorough handwashing with soap and water after using the bathroom.	129	7
4. Thorough sanitation of the water refilling area together with other Refiller is being done before beginning the business for the day.	129	7
5. The Presidential Decree 856 is the Code on Sanitation of the Philippines which the water refilling station must comply with.	126	10
6. The water refilling stations do undergo an initial and periodic water examination to test for any radioactive or bacteriological contamination before they are operated and open to the public.	125	11
7. Before refilling the water container, flush out the residues of the remaining product to ensure there would not be any bacteria that may come in contact with the newly purified water.	124	12
8. Use of any solution in cleaning the exterior surface of the pump cylinders and drop pipe is acceptable.	123	13
9. Inspection of contents of the container for any possible debris such as dirt, insects or strands of hair before sealing it.	122	14
10. Well units are protected by fences and gates with locks to prevent possible contamination or damage to facilities by trespassers.	121	15
11. A dumping site outside the water refilling station is acceptable.	92	44
12. Poor water filtration cannot cause water borne illnesses that can be found in water such as e.coli, salmonella etc. and cause typhoid fever, cholera, and hepatitis A or E.	89	47
13. Touching any surfaces of the water container with bare hands is a sanitary action.	88	48
14. Avoidance of practicing unsanitary actions (e.g. spitting inside the workplace, taking off gloves, mask and not wearing proper sanitary	87	49

equipment) within the premises is not necessary to avoid cross contamination.

15. Water is safe to drink despite being close to a radioactive source that is stored within a 10 meter radius.	80	56
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Table 2A*Distribution of refillers on items under compliance*

Items	Always		Often		Sometimes		Rarely		Never	
	f	%	f	%	f	%	f	%	f	%
1. I am complying with the Presidential Decree 856 (Sanitation Code of the Philippines).	110	80.9	20	14.7	4	2.9	1	0.7	1	0.7
2. I practice the proper water filtration process to avoid any water borne illnesses that can be found in water such as e.coli, salmonella etc. and cause typhoid fever, cholera, and hepatitis A or E.	108	79.4	22	16.2	3	2.2	1	0.7	2	1.5
3. I bring my health card with me to the water refilling station.	102	75	30	22.1	3	2.2	1	0.7	-	-
4. I inspect the contents of the container for any possible debris such as dirt, insects or strands of hair before sealing it.	101	74.3	29	21.3	5	3.7	1	0.7	-	-
5. I flush out the residues of the remaining product before refilling the water container to ensure there would not be any bacteria that may come in contact with the newly purified water.	101	74.3	20	14.7	10	7.4	4	2.9	1	0.7
6. I sanitize the water refilling area together with other refillers before beginning the business for the day. Thorough sanitation of the water refilling area together with	98	72.1	33	24.3	5	3.7	-	-	-	-

	other Refiller is being done.										
7.	I avoid performing unhygienic practices within the facility (such as spitting in the workplace, removing gloves and masks, and not wearing proper hygiene equipment) to prevent cross-contamination.	96	70.6	30	22.1	7	5.1	1	0.7	2	1.5
8.	I avoid touching any surfaces of the water container with bare hands to avoid any unsanitary action.	92	67.6	28	20.6	11	8.1	1	0.7	4	2.9
9.	I regularly disinfect my hands with alcohol after handling money or any foreign objects that may cause cross-contamination.	88	64.7	40	29.4	5	3.7	2	1.5	1	0.7
10.	I ensure that completed well units are protected by fences and gates with locks to prevent possible contamination or damage to the facilities by trespassers	87	64	35	25.7	7	5.1	1	0.7	6	4.4
11.	I utilize wearing a face mask, apron, gloves, protective footwear such as closed shoes, and a hair net, before entering the workplace, and maintain good personal hygiene, especially washing hands with soap and water after using the restroom. Washing is essential.	86	63.2	38	27.9	12	8.8	-	-	-	-
12.	I inspect the surroundings of the water refilling station if there is any dumping site.	86	63.2	27	19.9	19	14	2	1.5	2	1.5
13.	I ensure there is no	83	61	35	25.7	16	11.	-	-	2	1.5

radioactive or bacteriological contamination in the water, we undergo an initial and periodic water examination before they are operated and open to the public.						8					
14. I ensure that the location of our water refilling station is not close to any radioactive source or any radioactive material stored within a 25 meter radius. If so, it is safely enclosed with proper shielding.	81	59.6	35	25.7	13	9.6	4	2.9	3	2.2	
15. I use chlorine solution in cleaning the exterior surface of the pump cylinders and drop pipe.	72	52.9	41	30.1	15	11	1	0.7	7	5.1	

Appendix I

Dummy Tables

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
AGE	136	17.00	58.00	31.3382	9.87044
EXPERIENCE	136	.08	12.00	2.6611	3.03903
KNOWLEDGE	136	6.00	15.00	12.4779	2.07620
COMPLIANCE	136	2.40	5.00	4.5505	.49803
Valid N (listwise)	136				

AGE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	25 OR BELOW	43	31.6	31.6	31.6
	26 TO 35	56	41.2	41.2	72.8
	36 OR ABOVE	37	27.2	27.2	100.0
	Total	136	100.0	100.0	

SEX

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	MALE	93	68.4	68.4	68.4
	FEMALE	43	31.6	31.6	100.0
	Total	136	100.0	100.0	

EDUCATION

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	ELEM	11	8.1	8.1	8.1
	JHS	41	30.1	30.1	38.2
	SHS	34	25.0	25.0	63.2
	COLLEGE	50	36.8	36.8	100.0
	Total	136	100.0	100.0	

EXPERIENCE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	BELOW 1 YEAR	54	39.7	39.7	39.7
	1 TO 3 YEARS	44	32.4	32.4	72.1
	MORE THAN 3 YEARS	38	27.9	27.9	100.0
	Total	136	100.0	100.0	

TRAINING

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO	25	18.4	18.4	18.4
	YES	111	81.6	81.6	100.0
	Total	136	100.0	100.0	

Frequency Table

K1

	Frequency	Percent	Valid Percent	Cumulative Percent

Valid	.00	10	7.4	7.4	7.4
	1.00	126	92.6	92.6	100.0
	Total	136	100.0	100.0	

K2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	49	36.0	36.0	36.0
	1.00	87	64.0	64.0	100.0
	Total	136	100.0	100.0	

K3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	3	2.2	2.2	2.2
	1.00	133	97.8	97.8	100.0
	Total	136	100.0	100.0	

K4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	7	5.1	5.1	5.1
	1.00	129	94.9	94.9	100.0
	Total	136	100.0	100.0	

K5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	14	10.3	10.3	10.3
	1.00	122	89.7	89.7	100.0
Total		136	100.0	100.0	

K6

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	44	32.4	32.4	32.4
	1.00	92	67.6	67.6	100.0
Total		136	100.0	100.0	

K7

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	48	35.3	35.3	35.3
	1.00	88	64.7	64.7	100.0
Total		136	100.0	100.0	

K8

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	12	8.8	8.8	8.8
	1.00	124	91.2	91.2	100.0
Total		136	100.0	100.0	

K9

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	56	41.2	41.2	41.2
	1.00	80	58.8	58.8	100.0
	Total	136	100.0	100.0	

K10

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	47	34.6	34.6	34.6
	1.00	89	65.4	65.4	100.0
	Total	136	100.0	100.0	

K11

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	7	5.1	5.1	5.1
	1.00	129	94.9	94.9	100.0
	Total	136	100.0	100.0	

K12

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	15	11.0	11.0	11.0
	1.00	121	89.0	89.0	100.0
	Total	136	100.0	100.0	

K13

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	13	9.6	9.6	9.6
	1.00	123	90.4	90.4	100.0
	Total	136	100.0	100.0	

K14

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	3	2.2	2.2	2.2
	1.00	133	97.8	97.8	100.0
	Total	136	100.0	100.0	

K15

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	11	8.1	8.1	8.1
	1.00	125	91.9	91.9	100.0
	Total	136	100.0	100.0	

KNOWLEDGE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-11	44	32.4	32.4	32.4
	12 TO 13	39	28.7	28.7	61.0
	14 TO 15	53	39.0	39.0	100.0

Total	136	100.0	100.0
--------------	------------	--------------	--------------

C1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	1	.7	.7	.7
	2.00	1	.7	.7	1.5
	3.00	4	2.9	2.9	4.4
	4.00	20	14.7	14.7	19.1
	5.00	110	80.9	80.9	100.0
	Total	136	100.0	100.0	

C2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	2	1.5	1.5	1.5
	2.00	1	.7	.7	2.2
	3.00	7	5.1	5.1	7.4
	4.00	30	22.1	22.1	29.4
	5.00	96	70.6	70.6	100.0
	Total	136	100.0	100.0	

C3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	1	.7	.7	.7

2.00	2	1.5	1.5	2.2
3.00	5	3.7	3.7	5.9
4.00	40	29.4	29.4	35.3
5.00	88	64.7	64.7	100.0
Total	136	100.0	100.0	

C4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.00	12	8.8	8.8	8.8
	4.00	38	27.9	27.9	36.8
	5.00	86	63.2	63.2	100.0
	Total	136	100.0	100.0	

C5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.00	1	.7	.7	.7
	3.00	5	3.7	3.7	4.4
	4.00	29	21.3	21.3	25.7
	5.00	101	74.3	74.3	100.0
	Total	136	100.0	100.0	

C6

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	2	1.5	1.5	1.5
	2.00	2	1.5	1.5	2.9
	3.00	19	14.0	14.0	16.9
	4.00	27	19.9	19.9	36.8
	5.00	86	63.2	63.2	100.0
	Total	136	100.0	100.0	

C7

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	4	2.9	2.9	2.9
	2.00	1	.7	.7	3.7
	3.00	11	8.1	8.1	11.8
	4.00	28	20.6	20.6	32.4
	5.00	92	67.6	67.6	100.0
	Total	136	100.0	100.0	

C8

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	1	.7	.7	.7
	2.00	4	2.9	2.9	3.7
	3.00	10	7.4	7.4	11.0

4.00	20	14.7	14.7	25.7
5.00	101	74.3	74.3	100.0
Total	136	100.0	100.0	

C9

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	3	2.2	2.2	2.2
	2.00	4	2.9	2.9	5.1
	3.00	13	9.6	9.6	14.7
	4.00	35	25.7	25.7	40.4
	5.00	81	59.6	59.6	100.0
	Total	136	100.0	100.0	

C10

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	2	1.5	1.5	1.5
	2.00	1	.7	.7	2.2
	3.00	3	2.2	2.2	4.4
	4.00	22	16.2	16.2	20.6
	5.00	108	79.4	79.4	100.0
	Total	136	100.0	100.0	

C11

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.00	5	3.7	3.7	3.7
	4.00	33	24.3	24.3	27.9
	5.00	98	72.1	72.1	100.0
	Total	136	100.0	100.0	

C12

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	6	4.4	4.4	4.4
	2.00	1	.7	.7	5.1
	3.00	7	5.1	5.1	10.3
	4.00	35	25.7	25.7	36.0
	5.00	87	64.0	64.0	100.0
	Total	136	100.0	100.0	

C13

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	7	5.1	5.1	5.1
	2.00	1	.7	.7	5.9
	3.00	15	11.0	11.0	16.9
	4.00	41	30.1	30.1	47.1
	5.00	72	52.9	52.9	100.0
	Total	136	100.0	100.0	

C14

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.00	1	.7	.7	.7
	3.00	3	2.2	2.2	2.9
	4.00	30	22.1	22.1	25.0
	5.00	102	75.0	75.0	100.0
	Total	136	100.0	100.0	

C15

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	2	1.5	1.5	1.5
	3.00	16	11.8	11.8	13.2
	4.00	35	25.7	25.7	39.0
	5.00	83	61.0	61.0	100.0
	Total	136	100.0	100.0	

COMPLIANCE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	BELOW AVERAGE	19	14.0	14.0	14.0
	AVERAGE	64	47.1	47.1	61.0
	ABOVE AVERAGE	53	39.0	39.0	100.0
	Total	136	100.0	100.0	

EXPERIENCE * KNOWLEDGE Crosstabulation

		KNOWLEDGE			Total	
		0-11	12 TO 13	14 TO 15		
EXPERIENC E	BELOW 1 YEAR	Count	21	19	14	54
		% within EXPERIENCE	38.9%	35.2%	25.9%	100.0%
	1 TO 3 YEARS	Count	12	9	23	44
		% within EXPERIENCE	27.3%	20.5%	52.3%	100.0%
	MORE THAN 3 YEARS	Count	11	11	16	38
		% within EXPERIENCE	28.9%	28.9%	42.1%	100.0%
Total		Count	44	39	53	136
		% within EXPERIENCE	32.4%	28.7%	39.0%	100.0%

Correlations

		EXP	KT	
Spearman's rho	EXP	Correlation Coefficient	1.000	.276*
		Sig. (2-tailed)	.	.040
		N	136	136
KT	KT	Correlation Coefficient	.276*	1.000
		Sig. (2-tailed)	.040	.
		N	136	136

*. Correlation is significant at the 0.05 level (2-tailed).

Report

KNOWLEDGE ACCORDING TO TRAINING

TRAIN	Mean	N	Std. Deviation
NO	11.0400	25	2.38886
YES	12.8018	111	1.86265
Total	12.4779	136	2.07620

Nonparametric Tests

Hypothesis Test Summary

Null Hypothesis	Test	Sig.	Decision
1 distribution of KT is the same across categories of TRAIN.	Independent-Samples Mann-Whitney U Test	.000	Reject the null hypothesis.

Asymptotic significance is displayed. The significance level is .050.

KNOWLEDGE * COMPLIANCE Crosstabulation

		COMPLIANCE			Total	
		BELOW AVERAGE	AVERAGE	ABOVE AVERAGE		
KNOWLEDGE	0-11	Count	12	16	16	44
		% within KNOWLEDGE	27.3%	36.4%	36.4%	100.0%
	12 TO 13	Count	6	22	11	39
		% within KNOWLEDGE	15.4%	56.4%	28.2%	100.0%
	14 TO 15	Count	1	26	26	53
		% within KNOWLEDGE	1.9%	49.1%	49.1%	100.0%
Total		Count	19	64	53	136
		% within	14.0%	47.1%	39.0%	100.0%

KNOWLEDGE			
------------------	--	--	--

Nonparametric Correlations

Correlations

			KT	CT
Spearman's rho	KT	Correlation Coefficient	1.000	.292**
		Sig. (2-tailed)	.	.001
		N	136	136
	CT	Correlation Coefficient	.292**	1.000
		Sig. (2-tailed)	.001	.
		N	136	136

** . Correlation is significant at the 0.01 level (2-tailed).

Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	22	100.0
	Excluded ^a	0	.0
	Total	22	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.837	15

Appendix J

Ethical Clearance



RESEARCH ETHICS REVIEW BOARD
CENTRAL PHILIPPINE UNIVERSITY
Lopez Jaena St., Jaro, Iloilo City, Philippines
329-1971 to 79 local 3336



ETHICAL CLEARANCE

RERB Form No.22-2
Version No.: 04
Date of Effectivity: 17 May 2023

Date of Approval: August 23, 2023

RERB Code: **2023-224-UG-ROBLES et al.**

Protocol Title: ***“Knowledge and Compliance to Health Sanitation Practices among Refillers of Water Refilling Stations in Selected Districts in Iloilo City”***

Version No. 03

Researcher/s: **Qureshi, Zahra O.
Rafols, Maydane Lyrah P.
Ranario, Javen P.
Rasgo, Erick Joshua R.
Rico, Ericka Iris B.
Robles, Gwyn F.**

Upon resubmission of the following documents, Research Proposal Chapters 1, 2, and 3 with references and Informed Consent Form, the above protocol is hereby **APPROVED** by the CPU-RERB. This ethical clearance is valid from **August 23, 2023** to **August 23, 2024**.

The researcher/s are hereby required to submit the following:

- ✓ Progress Report on or before **September 23, 2023** to researchethics@cpu.edu.ph
- ✓ Final Report Form and one (1) copy of the completed protocol **within one (1) month** after completion of the study.

For any amendment or alteration in the protocol that will change the nature, or the level of risk involved after approval, the Research Ethics Review Board must be notified through writing and accomplishing the following forms as needed: Protocol Deviation Form, Serious Adverse Events, Amendment Form, and/or Early Termination Report.

Very truly yours,


JOY G. RASO, PhD.

Chair, CPU-RERB

Date: 8/23/23

Appendix K

Revision and Ethics Review Committee Payment Receipt



Central Philippine University, Inc.
 CPU Bldg., Lopez Jaena St., Jaro, Iloilo City, Philippines
 VAT REG. TIN 000-999-525-000
 VAT-EXEMPT
OFFICIAL RECEIPT No. **150311** C

Received from: QURESHI, Zahra Oberiano [00-X000-001]

Acct Explanation	Amount
A098 Specific for Research Ethics Committee.....	1,500.00
TOTAL.....	1,500.00

[Mary Jane] [2023/06/09/03:24:09 PM] [2023SU] [2010.00:-510.00]

Teller _____

This document is not valid for claim of input tax | This Official Receipt shall be valid for five (5) years from the date of ATP
 100 BOXES X 4000 SETS 2-PIV BIR ATP NO. 2AUM0002437072 DATED 02/21/20 VALID UNTIL 02/20/25 PARADIGM DIVERSIFIED RESOURCES INC. MANDAUE CITY TIN 004-270-370-000 VAT
 SN 8650018-10000008; 000001C-265000C | LOOSE LEAF PERMIT NO. 074-11-076-98 DATED 07/14/1998 PRINTERS ACCREDITATION NO. 080MP2019000000012 DATE ISSUED: 01/10/19

Appendix L
Certificate of Reliability Test




Central Philippine University
Jaro, Iloilo city

STATISTICIAN'S CERTIFICATION

This is to certify that this research study entitled, Knowledge and Compliance to Health Sanitation Practices among Refillers of Selected Water Refilling Stations in Iloilo City and submitted by Qureshi, Zahra O.; Rafols, Maydane Lyrah P.; Ranario, Javen P.; Rasgo, Erick Joshua R.; Rico, Ericka Iris B.; Robles, Gwyn F.

For the degree of Bachelor of Science in Nursing is certified to have undergone statistical analysis and reviewed by the undersigned.

Issued this 3rd day of March, 2024, Central Philippine University, Jaro, Iloilo City, Philippines.


Prof. Tony Ray Canaman
Statistician

Appendix M

Plagiarism Scan Certificate

**REVIEW, CONTINUING EDUCATION and CONSULTANCY CENTER**

Central Philippine University

Jaro, Iloilo City

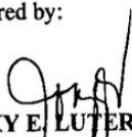
Tel. No. 329-1971 local 1008 email: rcceccsec@cpu.edu.phWebsite: rccecc.cpu.edu.ph

April 16, 2024


CERTIFICATION

This is to certify that the paper entitled “**KNOWLEDGE AND COMPLIANCE TO HEALTH SANITATION PRACTICES AMONG REFILLERS OF SELECTED WATER REFILLING STATIONS IN ILOILO CITY**” by **Zahra O. Qureshi, Maydane Lyrah P. Rafols, Javen P. Ranario, Erick Joshua R. Rasgo, Ericka Iris B. Rico, and Gwyn F. Robles** has undergone Turnitin Similarity Checking with a passing percentage of 10% and has passed the requirements (Chapter 1-5).

Prepared by:


PINKY E. LUTERO-TONGOL
Staff-in-charge

Approved by:


LENNY ROSE P. MUCHO, EdD
Director, RCECC

Appendix N

Grammarian Certificate

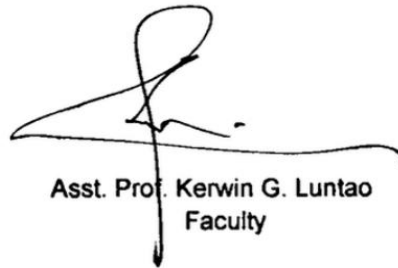


COLLEGE OF ARTS AND SCIENCES
CENTRAL PHILIPPINE UNIVERSITY
Department of Languages, Mass Communication and Humanities

CERTIFICATION



This is to certify that the research study entitled **KNOWLEDGE AND COMPLIANCE TO HEALTH SANITATION PRACTICES AMONG REFILLERS OF SELECTED WATER REFILLING STATIONS IN ILOILO CITY** by *Qureshi, Z., Rafols, M.L., Ranario, J., Rasgo, E.J., Rico, E.I., and Robles, G.* was checked for grammar and other mechanics of writing.

Issued this 2nd of May, 2024.



Asst. Prof. Kerwin G. Luntao
Faculty

Appendix O
Progress Report

	<p>CENTRAL PHILIPPINE UNIVERSITY RESEARCH ETHICS REVIEW BOARD Lopez Jaena St., Jaro, Iloilo City, Philippines 329-1971 to 79 local 3336</p>	
PROTOCOL REVIEW OF PROGRESS REPORT	RERB Form No. 09-1	
	Version No. 01	
	Date of Effectivity: 17 May 2023	

INSTRUCTIONS TO THE RESEARCHER/s:

This form is required thirty (30) days after your Data Collection. Obtain an electronic copy of this form and supply

All information required in the space provided. This form shall be signed by the researcher and adviser before submission to researchethics@cpu.edu.ph

GENERAL INFORMATION

Title of Study	Knowledge and Compliance to Health Sanitation Practices among Refillers of Selected Water Refilling Stations in Iloilo City		
RERB Code:	2023-224-UG-ROBLES et al	Study Site	Central Philippine University
Name of Researcher	Zahra O. Qureshi		
Contact No.	09216563063	Email Address	zahra.qureshi-20@cpu.edu.ph
Co-researcher (if any)	Maydane Lyrah P. Rafols, Javen P. Ranario, Erick Joshua R. Rasgo, Ericka Iris B. Rico, and Gwyn F. Robles		
Institution	Central Philippine University		

Address of Institution	Jaro, Iloilo City
Ethical clearance effectivity period:	From: <u>August 23, 2023</u> To: <u>August 23, 2024</u>

PROGRESS REPORT

1. Start of study: September, 2022
2. Expected end of study: June, 2024
3. Number of enrolled participants: 136
4. Number of required participants: 136
5. Number of participants who withdrew: 0
6. Deviations from the approved protocol: The researchers have revised the conceptual framework by adding Training and Work Experience under the Antecedent variables, as new specific objectives were added to assess whether the refillers have undergone formal training for operating a water refilling station.
7. New information (literature or in the conduct of the study) that may significantly change the risk-benefit ratio: None
8. Issues/problems encountered: Several refillers expressed hesitancy in granting permission to survey their water refilling stations, citing concerns about feeling interrogated. Additionally, some individuals encountered difficulty in understanding the survey questions due to varying literacy levels. In response to these challenges, the researchers took the time to explain the survey questions in the respondents' native language. Emphasis was placed on explaining each question in detail, ensuring respondents could articulate their perspectives accurately and coherently.
Recommendations (For RERB use only)

<p>DECISION: (For RERB use only)</p>	<p><input type="checkbox"/> Ask for further information <input type="checkbox"/> Noted and Accept report</p>
<p>Comments of Primary Reviewer (For RERB use only)</p>	

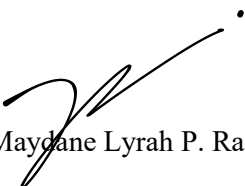
RERB Primary Reviewer: *(For RERB use only)*

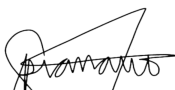
Signature over Printed Name

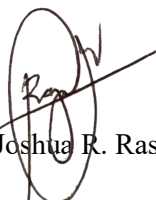
Date:

Researcher/s:


Zahra O. Qureshi


Maydane Lyrah P. Rafols


Javen P. Ranario

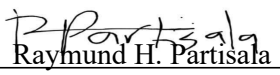

Erick Joshua R. Rasgo


Ericka Iris B. Rico


Gwyn F. Robles

Date: June 6, 2024

Adviser:




Raymund H. Partisala
Adviser

Date: June 6, 2024

Appendices P

Final Report

INSTRUCTIONS TO THE RESEARCHER/s:

	RESEARCH ETHICS REVIEW BOARD CENTRAL PHILIPPINE UNIVERSITY Lopez Jaena St., Jaro, Iloilo City, Philippines 329-1971 to 79 local 3336	
FINAL REPORT FORM	RERB Form No. 13-1	
	Version No. 01	
	Date of Effectivity: 17 May 2023	

This form is required upon completion of the study. Obtain an electronic copy of this form and supply all information required in the space provided. This form shall be signed by the researcher and adviser before submission to researchethics@cpu.edu.ph

GENERAL INFORMATION

RERB Protocol Number	2023-224-UG-ROBLES et al.	Date (DD/MM/YYYY)	05/06/2024
Protocol Title	Knowledge and Compliance to Health Sanitation Practices among Refillers of Selected Water Refilling Stations in Iloilo City		
Principal Investigator/s	Zahra O. Qureshi		
Department/College	College of Nursing		
Contact No.	09216563063	*Email Address	zahra.queshi-20@cpu.edu.ph
Co-investigator/s (if any)	Maydane Lyrah P. Rafols, Javen P. Ranario, Erick Joshua R. Rasgo, Ericka Iris B. Rico, and Gwyn F. Robles		
Contact No.	09216563063	Email Address	zahra.queshi-20@cpu.edu.ph
Institution of Researcher/s	Central Philippine University		

Address of Institution	Jaro, Iloilo City
Effective period of Ethical Clearance	From: <u>August 23, 2023</u> To: <u>August 23, 2024</u>
(*for RERB) Primary Reviewer/s	

Type of Study	<input type="checkbox"/> Clinical <input type="checkbox"/> Epidemiology <input type="checkbox"/> Observational study
	<input type="checkbox"/> Document Review <input type="checkbox"/> Individual based <input type="checkbox"/> Genetic
	<input checked="" type="checkbox"/> Social Survey <input type="checkbox"/> Others, specify _____
Review Status	<input type="checkbox"/> Full Board <input checked="" type="checkbox"/> Expedited

FINAL REPORT

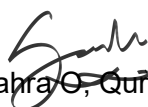
1. Start/end of the Study: September, 2022 - June, 2024
2. Number of enrolled participants: 136
3. Number of required participants: 136
4. Number of participants who withdraw: 0
5. Deviations from the approved protocol: The researchers have revised the conceptual framework by adding Training and Work Experience under the Antecedent variables, as new specific objectives were added to assess whether the refillers have undergone formal training for operating a water refilling station.
6. Issues/problems encountered: Several refillers expressed hesitancy in granting permission to survey their water refilling stations, citing concerns about feeling interrogated. Additionally, some individuals encountered difficulty in understanding the survey questions due to varying literacy levels. In response to these challenges, the researchers took the time to explain the survey questions in the respondents' native language. Emphasis was placed on explaining each question in detail, ensuring respondents could articulate their perspectives accurately and coherently.

7. Summary of findings:


In this study, the researchers aimed to explore the level of knowledge and compliance among refillers in different water refilling stations in Iloilo City. The study was conducted through a researcher-developed questionnaire in October 2023. It surveyed refillers from all water refilling stations in districts of Jaro I, Jaro II, and Mandurriao of Iloilo City to assess their knowledge and compliance with the health sanitation code of the Philippines. The goal was to determine if these stations provided potable water and have sufficient sanitary facilities to prevent the transmission of infectious diseases, ultimately aiming to reduce morbidity and mortality rates. The data were analyzed using SPSS. Descriptive (frequency, percentage, mean, standard deviation) and inferential statistics (chi-square) were used.

8. Actions for dissemination of study results:

The study's findings were disseminated to the larger community through a variety of channels, including academic publications, public health forums, and research colloquia and research flora designed for a wide audience, including refillers, water refilling station owners, public health experts, and policymakers.

Researchers:


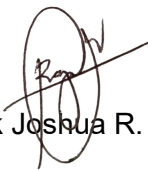
Zahra O. Qureshi



Maydane Lyrah P. Rafols



Javen P. Ranario



Erick Joshua R. Rasgo




Ericka Iris B. Rico



Gwyn F. Robles

Date: June 6, 2024



Raymund H. Partisala
Adviser

Date: June 6, 2024

Appendix Q

Budgeting

Table 3A

List of Personnel Fees

Personnel	Unit	Cost per Unit	Subtotal (In Pesos)
Statistician Fee	1	3000	3000
Expert's Fee (Validation and Reliability)	3	300	900
Plagiarism Fee	6	250	1500
Research Ethics Review	1	1500	1500
Grammarians Fee	1	2000	2000

Table 4A

List of Items needed in Reproduction and Related Costs

Items	Unit	Cost per Unit	Subtotal (in Pesos)
Printing Fee	-	-	1000
Photocopying Fee	-	-	300
White Long Folder	10	8	80
Bond paper	3	255	755
White Short Folder	4	7	28
Binder Clip	10	15	150
Fare Expenses	-	3000	3000

Total: P14,213

