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**ADDIS ABABA UNIVERSITY
COLLEGE OF DEVELOPMENT STUDIES
CENTER FOR REGIONAL AND LOCAL DEVELOPMENT**

**THE IMPACT OF WATER, SANITATION AND HYGIENE
INTERVENTIONS ON STUDENT SCHOOL PERFORMANCE IN ADDIS
ABABA GOVERNMENT SCHOOLS: THE CASE OF YEKA SUB CITY**

BY

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ADDIS ABABA, ETHIOPIA

Addis Ababa University
College of Development Studies
Center for Regional and Local Development Studies

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By
Tsege Afrassa

**A Thesis Submitted to Center for Regional and Local Development Studies,
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This is to certify that the thesis prepared by Tsege Afrassa entitled “The impact of WASH interventions on student school performance in Addis Ababa governmental schools: The case of Yeka sub city” and submitted in partial fulfillment of the requirements for the degree of Master of Art in Regional and Local Development studies fulfills with the regulations of Addis Ababa University and meets the accepted standards with respect.

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I, the undersigned, declare that this thesis is my original work and has not been presented for a degree in any other university and that all sources of materials used for the thesis have been duly acknowledged.

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Acronyms

WASH	Water, Sanitation and Hygiene
WHO	World Health Organization
UNDP	United Nation Development Program
UNICEF	United Nations International Children’s Emergency Fund
UN-Water	United Nation Water
SDG	Sustainable Development Goals
MDG	Millennium Development Goals
OWNP	One Wash National Program
CSA	Central Statistical Agency
WRMP	Water Resources Management Policy of Ethiopia
ECA	Economic Commission for Africa
AAEB	Addis Ababa Education Bureau
AAWSA	Addis Ababa Water and Sanitation Agency
JMP	Joint Monitoring Program
FoMH	Federal Ministry of Health
LMICs	Low- and middle-income countries LMICs
AHA	Amref Health Africa
DP	Development Partners

Abstract

The purpose of this study was to investigate the impact of WASH interventions on students' school performance in Addis Ababa Yeka sub-city primary and secondary government schools. The study used a descriptive and explanatory research design, as well as primary and secondary data sources. A multistage sampling procedure was used to select twelve schools purposively and draw a sample of 279 students at random. The questioner was distributed, and 221 relevant data points were collected, as well as 12 key informant interviews. Propensity score matching was used to analyze quantitative data in this study using STATA 14, and inductive analysis was used to analyze qualitative data. According to the study's findings, only a some of WASH intervention packages significantly improved students' school performance as measured by rank and absenteeism. The findings revealed that providing safe water and hygiene intervention at school has no effect on students' grades. On the other hand, having proper sanitation at school has a significant impact on student rank. In terms of student absenteeism, statistical analysis shows that having safe drinking water at school helps to improve student school performance by lowering student absenteeism. In contrast, access to proper sanitation and hygiene facilities at school has no statistically discernible impact on student absenteeism. As a result, this study concludes that while not all WASH intervention packages have an impact on student school performance, some of them can reduce absenteeism and improve student rank. The study recommended that, the school community should take more ownership and accountability for the proper operation and proactive maintenance of WASH facilities. To bring accountability, the government should also have a policy that includes School WASH in education and the MoE's training policy. In addition, the government should have clear and agreed-upon indicators at all levels. This study also suggests that WASH actors conduct research before embarking on any project.

Key Words: *Safe drinking water, Sanitation, Hygiene, Intervention, Schools, School performance, Rank, absent rate.*

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The Sustainable Development Goals (SDGs) were designed in 2015 to build on this forward-thinking strategy and complete what was not accomplished with the MDGs. A global organization set the 17 goals for the betterment of the world. The goals accept that extreme poverty is the largest problem in the world, and long-term sustainability includes the removal of it. Other activities under the initiative include: the development of equitable and quality education, the end of poverty, the achievement of gender equality, the protection of the oceans and the creation of resilient infrastructure (Life Water, 2018).

The fact that WASH is the focus of concrete goals within the context of the SDG 6 indicates its fundamental role in the field of public health and, thus, in sustainable development in the future. In 2010 the UN general assembly agreed accessing clean water and sanitation is a human right. There is a need for the right structures to make universal enforcement of these rights a reality: well-resourced, competent organizations providing programs and transforming behavior in resilient and appropriate ways. It is important that after assistance leaves developed countries, the wheels continue to spin. This goal recognizes that only when stakeholders and local communities engage in their own growth does sustainability happen. And there must be standards and administration at the national level to manage water resources. This is all to ensure that every person receives access to clean water and better health, regardless of their social status or financial situation (UN water, 2020).

The benefit of having a better source of drinking water can only be fully realized if proper sanitation and hygiene practices are also available. In addition to the obvious immediate benefits of hydration and health, WASH (water, sanitation, and hygiene) has significant socio-economic implications, especially for women and girls (UN water, 2020).

According to a recent study by UNICEF and the WHO, billions of people worldwide already suffer from inadequate access to water, sanitation, and hygiene. Globally 2.2 billion people lack safe drinking water, 4.2 billion lack proper sanitation facilities and 3 billion lack basic washing facilities (UNICEF & WHO, 2019). According to UNICEF, 400 million children are infected

with intestinal worms each year because of poor sanitation and contaminated drinking water. For school-aged children, parasitic infections increase their chances of contracting other diseases, deplete their resources, and limit their ability to learn. Lack of water and basic sanitation in schools is especially harmful to girls, especially those who have reached puberty. Many girls do not attend school during menstruation if clean and separate latrines for girls are not available. Their absenteeism also results in low performance in schools and high dropout rate (Child Fund, 2020).

In Ethiopia, almost 33 million people lack access to basic water supplies and almost 89 million do not have access to basic sanitation. 90 percent of diarrheal disease cases, Ethiopia's leading cause of child mortality, are due to a lack of access basic water and sanitation. To combat this, the Ethiopian government and partners developed the One WASH National program in 2013. The goal was to drastically improve access to safe water and sanitation services across the country (Borgen, 2020).

In rural and urban areas, the One WASH National program aims to improve the health and well-being of communities. Rising equitable and safe access to clean water sources, sanitation facilities and good hygiene practices is their strategy to achieve this. As the IRC states, "It combines a comprehensive range of water, sanitation and hygiene interventions, including capital investments aimed at expanding first-time access to water and sanitation, as well as investment, with a focus on enabling the environment, capacity building, sustainability of service delivery and behavioral change." It has components of rural, urban, institutional WASH and capacity building (Borgen, 2020).

Over the seven-year period 2013-2020, the One WASH National program (OWNP) contains some USD 2.4 billion in expenditure. The program brings together four main government ministries and their relevant sectors to modernize the way citizens access water and sanitation services. It integrates the efforts of the Department of Water, Irrigation and Energy (headed by the Department of Water and Sanitation Supplies), the Department of Health, the Department of Education and the Department of Finance and Economic Development. The program also puts together a structured program of government, development partner and NGO activities in WASH (IRC, 2017).

The OWNP aims to improve the health and well-being of rural and urban communities by ensuring equitable and long-term access to water and sanitation, as well as promoting good hygiene practices. It incorporates a wide range of water, sanitation, and hygiene initiatives, including capital investments aimed at expanding access to water and sanitation for the first time, as well as investments aimed at improving the environment, building capacity, ensuring the sustainability of the provision of services, and transforming behavior. It has components for rural, urban, institutional WASH and capacity building (IRC, 2017).

Article 10, sub-articles 1 and 2 of the Constitution of the Federal Democratic Republic of Ethiopia (1995), states that: Human rights and freedoms resulting from the existence of mankind are inviolable and inalienable. And: People's and people human and democratic rights shall be respected. These basic human rights form the basis of the Ethiopian government's policies, including those linked to WASH. The Constitution also states in Article 90 that, to the extent permitted by resources, policies seek to provide access to health and education, clean water, accommodation, food, and social security for all Ethiopians. There are three related policy areas in the WASH market: water, health, and environment (National WASH Coordination Office et al., 2016).

In 1999, the Water Resources Management Policy of Ethiopia (WRMP) was published. It deals with the country's general water supplies, including both surface and groundwater. The policy sets out how these water supplies, including water supply and sanitation, irrigation, and hydropower, can be economically and sustainably used for various purposes. The WRMP's ultimate objective is to 'enhance and encourage all national efforts to make reliable, equitable and optimal use of Ethiopia's available water resources for significant socio-economic development on a sustainable basis (MoWR, 1999).

In Addis Ababa, about 400,000 children attend government schools. Access to secure WASH is available in 31% of primary schools and 29% of secondary school students (MoE, 2016). It was noticed in 444 government schools surveyed by Splash and the Addis Ababa Education Bureau (AAEB) that only 6% of schools had secure access to water five consecutive school days a week, only 35% had available toilets, only 66% of hand washing taps were working, and only 10% of schools had soap. It is not shocking then that more than 50% of the children surveyed said that they never use the school bathroom (Mathijs et al., 2018).

In general, clean water, sanitary facilities and good hygiene practices are all integrally linked to a child's right to education and eradicating extreme poverty because each significantly contributes to the health, well-being, and school attendance of children. Many studies have been conducted in Ethiopia and around the world regarding WASH and related issues but there is a limited amount of research about urban WASH especially school WASH in Addis Ababa. This research presents a wider framework to evaluate the impact of WASH interventions on the improvement of student's school performance. Therefore, addressing WASH in school is a global issue, one that is critical for the fulfillment of the 2030 Agenda for Sustainable Development.

1.2 Statement of the Problem

According to a recent UNICEF and WHO study, approximately 2.2 billion people worldwide do not have safe drinking water services, 4.2 billion do not have safe sanitation services, and 3 billion do not have basic hand washing facilities. Every year, 297,000 children under the age of five die as a result of diarrhea caused by a lack of WASH. Poor sanitation and pollution are also linked to the spread of diseases such as cholera, dysentery, hepatitis A, and typhoid (UNICEF & WHO, 2019).

School and childhood should go hand in hand, but many children in low-income communities without access to scrub are unable to attend class because they are sick with diarrheal disease or must spend a significant portion of their day fetching water for their families, especially girls in rural areas. The situation for children at school may not be any better than it is at home: approximately one-third of schools worldwide lack a clean water source or proper sanitation, leaving children dehydrated and less ready to focus, and requiring students to use insufficient latrines or go to the rest room outside the varsity grounds (UN Water, 2019).

According to the WHO/UNICEF Joint Monitoring Program 2014 report, Ethiopia has improved its water supply by 57% (97% in urban areas and 42% in rural areas), thus achieving the Millennium Development Goal (MDG) 7 target 7C. While the sanitation goal has not yet been reached, there has been considerable progress over the last decade in improving sanitation and ending open defecation. Progress was primarily due to the creation of a government-led WASH coordination system (ONE WASH program) involving the Ministry of Water, Health, Education and Finance and Economic Development, as well as development partners (WHO Regional office for Africa, 2021).

Worldwide several studies conduct on WASH but there are some studies in relation to WASH activities in Ethiopia. The studies are: Impacts of WASH education on childhood intestinal parasitic infections in rural Dembiya, northwest Ethiopia: by Gizaw, Z, et al.(2019); Impact of Water, Sanitation, and Hygiene Interventions on Improving Health Outcomes among School Children by (Joshi & Amadi, 2013); Evidence of Households' WASH Performance Improvement Following a WASH Education Program in Rural Dembiya, Northwest Ethiopia studied by Zemichael Gizaw and Ayenew Addisu (2020); Knowledge, Attitude, and Practices on Water, Sanitation, and Hygiene among Rural Residents in Tigray Region, Northern Ethiopia (A. Berhe, A. Aregaye, A. Abreha et al. 2020); The impact of drinking water quality and sanitation on child health: Evidence from rural Ethiopia studied by Usman, Muhammed A.; Gerber, Nikolaus; von Braun, Joachim (2016). Menstrual hygiene practices among high school girls in urban areas in Northeastern Ethiopia: by Y. Habtegiorgis, T. Sisay, H. Kloss, et al. (2021).

However, there are few studies in Addis Ababa such as School WASH in Addis Ababa: Landscape study conducted by the Addis Ababa Education Bureau (AAEB), Splash Ethiopia, and IRC Ethiopia (2018); the foremost Important Recommended Times of Hand Washing with Soap and Water in Preventing the Occurrence of Acute Diarrhea Among Children Under Five Years aged in Slums of Addis Ababa, Ethiopia by M.Adane, B. Alemu, W. Mulat et al. (2018) and Assessment Of Menstrual Hygiene Management and Its Determinants Among Adolescent Girls: A Cross-Sectional Study in School Adolescent Girls in Addis Ababa, Ethiopia by B. Ephrem, T. Worku, T. Nardos et al. Most of these studies focused on the rural parts of Ethiopia, WASH impacts on children health and some of them focus on one or two WASH package. The only study conducted by AAEB, splash and IRC focused on what thematic areas NGO's work in, which schools they work in, and what challenges they face as well as practices of hand washing and environmental sanitation.

Improvements in child health and education are key targets in many international development programs, but relatively little is known about the impact of WASH interventions on student's school performance. The researcher believes that WASH interventions significantly impact students' school performance by increasing students' rank and reduce absenteeism. This research, therefore, is intended to contribute to the existing body of knowledge by providing additional insights regarding the impact of WASH interventions on the improvement of students' school

performance in Addis Ababa in the case of selected primary and secondary government schools at Yeka sub city.

1.3 Research Objectives

The general objective of this study is to investigate the impacts of WASH interventions on student's school performance in the selected government primary and secondary schools in Addis Ababa. The specific objectives are: -

- To analyze the WASH impact on student's school performance such as rank and absent rate in the study area.
- To assess the impact of WASH on students who receive the intervention at school.
- To assess the existing policies and institutional arrangements to provide access to water, sanitation, and hygiene for all students.

1.4 Research Questions

Hence the researcher aims to answer the following questions: -

- Does the School WASH intervention have an impact on students' school performance in the study area, such as rank and absenteeism?
- How much of the WASH intervention impacted the students who received it at school? What are the existing Ethiopian policies and institutional arrangement to provide access to water, sanitation, and hygiene for all students?

1.5 Significance of the Study

Every child has the right to a quality education, which includes access to drinking water, sanitation, and hygiene (WASH) services while at school. Children spend a significant portion of their day at school where WASH services can impact student learning, health, and dignity, particularly for girls. When schools have safe water, toilets and soap for hand washing, children have a healthy learning environment, and girls are more likely to attend when they are on their period. Beyond the schoolyard, children who learn safe water, sanitation and hygiene habits at school can reinforce positive life-long behaviors in their homes and their communities. However, millions of children go to school every day in unsafe learning environments, with no drinking water, no proper toilets, and no soap for washing their hands.

This study focuses on assessing the impact of WASH interventions on student's school performance of children in primary and secondary schools in Addis Ababa the case of Yeka sub city. It therefore has its own contribution to other researchers who are interested in studying similar topics and can serve as a springboard for further study. Given the limited literature available, this study helps to fill the gap in the area under study and provide insight into WASH at school. In addition, academics, donors, development organizations, and policymakers will benefit from this research. It may serve as a source of information for other readers interested in urban WASH issues. It might be of interest to other readers who are interested in urban WASH issues. It also enables WASH actors to assess the level of WASH impact on student school performance and devise a better approach. It provides donors and development organizations additional information and for those interested in becoming involved in urban school WASH programs.

1.6 Scope of the Study

This research focuses on the impact of WASH interventions on the improvement of children's school performance in Addis Ababa. Various WASH actors are involved in implementing WASH in schools. NGOs are most commonly active in all three WASH components: water, sanitation, and hygiene. Methodologically, the study confines to quantitative and qualitative research methods. In terms of geographic scope, the study concentrates on Addis Ababa's Yeka sub-city, where both governmental primary and secondary schools which WASH interventions exist and do not exist.

1.7 Limitation of the Study

Due to time and budget constraints, collecting data on entire schools in Addis Ababa was extremely difficult. As a result, this study is limited to the schools in the Yeka sub-city. Because we were limited to 12 schools, the findings of this study may not be representative of the entire Addis Ababa school WASH program's impact on students' school performance.

In addition to the issue, the COVID pandemic made it difficult to locate many students at school. The information was gathered during the 2020/21 academic year. The government set up a two-shift program to reduce the number of students at school for the sake of social distancing. The classrooms only had 30-40 students at any given time, and students came to school only three days in a week forcing to take the sample from shift one students.

1.8 Ethical Considerations

Yeka sub city education bureaus and each school granted permission to the researcher to collect the data. The researcher prioritized research ethics and did everything possible to ensure the safety of study participants throughout the process. The participants in the study were well informed about the study, and they needed parental consent to participate. Participation in this study is contingent on the participant's willingness to share their experience. Those who refused to participate in the study were not required to do so. The researcher also considered the rights of study participants, such as the right to be informed about the study and the right to refuse to answer questions with which they are uncomfortable. Finally, the information obtained from the subjects was kept confidential, secret, and used only for the study, and the subjects' anonymity was maintained.

1.9 Organization of the Study

This research is divided into five basic chapters. The second chapter goes over the theoretical and related empirical literatures that have been reviewed from various sources and draws a conceptual framework for the study. Following that, the third chapter describes the research method used for sampling, data collection, and analysis method and model. The fourth chapter discusses the study's major findings and research results. Finally, the last chapter, the conclusions and recommendations are presented.

CHAPTER TWO

LITERATURE REVIEW

The purpose of this chapter is to review and summarize the concepts, theoretical perspectives, empirical review and draw a conceptual framework to synthesize knowledge and familiarize with pertinent information on WASH at school. Thus, the first section defines fundamental terms in WASH in school programs, such as WASH, school performance, rank, and absenteeism and review empirical evidence about the issue. The second section discusses some theories related to the research topic, and the third section presents the conceptual framework.

2.1 Definition and Concept of WASH

Concepts are terms that are used as analytical categories in research to aid in the understanding of the study topic at hand. It is critical to have a clear understanding and definition of the various concepts used in this research to maintain consistency throughout the entire research. This is accomplished by reviewing various related literature and materials relevant to the study's subject matter. As a result, this section discusses the main concepts that serve as the foundation for this research and reviewed related empirical studies.

The word WASH stands for "water, sanitation, and hygiene." WASH access that is universal, affordable, and sustainable is a critical public health issue in international development, and it is the focus of the first two SDG 6 targets. The SDG Targets 6.1 and 6.2 aim to provide everyone with equitable and accessible water and sanitation. The term "access to WASH" refers to the availability of safe drinking water, adequate sanitation, and hygiene education (UNDP, 2021).

2.1.1 Safe Drinking Water

There is no consensus on what constitutes "safe drinking water." Drinking water that is safe to drink is defined as water that poses no significant health risk over the course of a lifetime of use. Water that is pure, wholesome, healthy, and potable must be delivered. Water that is safe to drink is not always pure; it may contain impurities. There are traces of magnesium, calcium, carbonates, bicarbonates, and other salts in it. The term "purity" and "safety" are both subjective and debatable terms. There are no minerals in clean/pure water, only H and O. According to the Monitoring organizations overseen by the JMP, "safe drinking water" is defined as water from a

"improved water source," which includes household connections, public standpipes, boreholes, protected dug wells, protected springs, and rainwater collections (Dinka, 2018).

Water that can be delivered to the user and is safe for drinking, food preparation, personal hygiene, and washing is referred to as safe drinking (potable) water. At the point of supply to the users, the water must meet the required (chemical, biological, and physical) quality standards. As a result, safe drinking water is a relative term that depends on a country's standards and guidelines; the standards set for the various quality parameters differ. WHO's standard is not identical to that of the United States, Canada, the European Commission, Russia, India, South Africa, Ethiopia, and other countries (Dinka, 2018).

A "safely managed drinking water service" is defined as "one that is on-site, available when needed, and free of contamination." The JMP of UNICEF and WHO coined the terms 'improved water source' and 'unimproved water source' in 2002 as a drinking water monitoring tool. The term "improved water source" refers to "piped water on premises (piped household water connection located within the user's dwelling, plot, or yard) and other improved drinking water sources (public taps or standpipes, tube wells or boreholes, safe dug wells, safe springs, and rainwater collection) (Africa, 2015).

Water that is safe and easily accessible is essential for public health, whether it is used for drinking, domestic use, food production, or recreation. Improved water supply and sanitation, as well as better water resource management, can boost countries' economic growth and contribute significantly to poverty reduction (World Health Organization, 2019).

2.1.2 Sanitation

Sanitation is defined by WHO as a collection of methods for collecting human excreta and urine, as well as community waste waters, in a sanitary manner that does not jeopardize human or community health. Sanitation methods aim to limit disease spread by treating wastewater, excreta, and other waste, properly handling water and food, and limiting the occurrence of disease-causing agents (Sari Huuhtanen, 2006)

Sanitation is a system that promotes and sustains a healthy lifestyle and environment. Its goal is also to provide people with enough clean water for washing and drinking. Typically, health and hygiene education are linked to sanitation to teach people where health problems arise and how

to improve sanitation through their own actions. Building and maintenance education on sewerage systems, washrooms, and toilet facilities is an essential part of sanitation (Sari Huuhtanen, 2006).

In the definition of the United Nations Millennium Development Goals (MDG), two terms are used in sanitation: improved sanitation and the broader concept of basic sanitation. The Joint Monitoring Program (JMP) “Global water supply and sanitation assessment 2000” of WHO and UNICEF define developed sanitation services. As developed sanitation services, the following methods are used: Septic tank, public sewer, pour-flush latrine, pit latrine with slab, ventilated improved pit, and ecological sanitation are all available (UNICEF & WHO, 2015).

2.1.3 Hygiene

Hygiene is a set of practices used to keep one's health in check. "Hygiene refers to conditions and practices that help to maintain health and prevent the spread of diseases," according to the World Health Organization (WHO). Personal hygiene is the practice of keeping one's body clean (WHO, 2017b).

Hand hygiene - According to UNICEF hand hygiene is a cornerstone of safe and effective health care. It is a highly cost-effective public health measure that is also crucial to protecting against a range of diseases like pneumonia and diarrhea. Even within countries, global and national estimates show vast disparities in access to hand washing. Where hand hygiene facilities are available, research has shown that people, particularly men, do not consistently use them. More political support and behavioral change interventions are required to make significant improvements in the policies, strategies, and actions that drive long-term change (WHO & UNICEF, 2020).

Three billion people worldwide do not have access to a water and soap-based hand washing facility at home. Almost half of all schools lack water and soap hand washing station, affecting 818 million school-age children. Approximately 32% of health-care facilities lack hand hygiene facilities where patients are treated (UNICEF, 2017).

Menstrual hygiene- Every month, 1.8 billion people worldwide menstruate. Millions of these girls, women, and non-binary people are unable to manage their menstrual cycle in a healthy and dignified manner. Menstruation ushers in a new phase and new vulnerabilities – in the lives of

adolescents. During menstruation, however, many adolescent girls face stigma, harassment, and social exclusion. Menstrual health and hygiene needs can go unmet due to gender inequality, discriminatory social norms, cultural taboos, poverty, and a lack of basic services such as toilets and sanitary products. This has far-reaching ramifications for millions of people. It limits their mobility and personal options. It has an impact on school attendance and community participation. It also jeopardizes their safety, adding to their stress and anxiety. These difficulties are exacerbated in humanitarian crises (UNICEF, 2019a). Interventions in menstrual health and hygiene can help overcome these barriers. They not only meet an unmet need for menstrual hygiene products, but they also protect dignity, boost confidence, and improve sexual and reproductive health, particularly among adolescents (UNICEF, 2019b).

2.1.4 School Performance

The complexities of academic performance begin with its conceptualization. It is also known as school readiness, academic achievement, and school performance, but the distinction between the concepts is only explained by semantics because they are synonyms. Academic performance should be used in university populations and school performance in regular and alternative basic education populations, according to convention. We will only mention a few because there are so many different definitions (Revisi & Lamas, 2015).

Several authors agreed that Academic performance is the result of learning, which is prompted by the teacher's teaching activity and produced by the student. According to humanistic approach academic performance is "the product given by students, which is usually expressed through school grades." In 1985 Pizzaro defined as "a measure of the indicative and responsive abilities that express, in an estimated way, what a person has learned as a result of a process of education or training"(Revisi & Lamas, 2015).

2.1.5 Student Rank

Student rank refers to a student's hierarchical position based on academic performance or grade point average. Rankings can be numerical (first, second, third, top ten, etc.) or stated as percentiles (top ten percent, top twenty-five percent, etc.). Class rank is established at the end of middle or high school and is used to decide academic distinctions such as valedictorian (first in class) and salutatorian (second in class) (second in the class). While schools seldom make the

whole set of rankings for a graduating class public, it is customary for schools to publicly declare and congratulate top-ranked students, particularly those who wind up in the "top ten percent" (Great schools partnership, 2014).

2.1.6 Absenteeism

Absenteeism refers to the frequent and repeated absence of students from curricular activities due to poor motivation, insufficient study conditions, but also to other reasons such as health issues, forced-to-work children, or other school pressures (Ungureanu, 2017). Repeat is the condition in which a student is expected to take the same classes again during the next year, who has taken the requisite classes to conclude an academic year. Retaking the classes is based on various standards, but it is not enough to give the student the opportunity to engage in the same activities that previously created the failure to avoid making this a punishment and instead to turn it into a school reintegration technique, but to incorporate an individual instructional plan in accordance with the needs of the student who repeats it (Ungureanu, 2017).

Research also indicates that irregular attendance can be a precursor for dropping out from school regardless of the gender of the pupils. However, it can be argued that school absenteeism can be somewhat negatively more effective for early dropout from school female students. In this regard, Manacorda (2012) also argues that girls are at a greater risk of absenteeism, repetition, and dropout, and have lower educational achievement than boys in upper primary school. There are some causes for girls' dropout because of absenteeism. For instance, teenage pregnancy among girl is commonly associated with frequent absence from school initially, then permanent and or temporary dropout. Girls also can more drop out because of absenteeism due to child labor or household work. This is because a good deal of literature on household work found that girls do more household work than boys which may increase non-attendance in schools for girls. Moreover, availability of toilets and access to feminine hygiene supplies impact on girls' absenteeism. In this regard, Gran (2013) indicates that female students were more likely to be absent if their toilets at school were dirty. In addition, Ngales (2005) found that in Ethiopia, female students were often absent in class during menstruation and frequent absence led them to drop out from school (Shahidul & Karim, 2015).

2.2 Theoretical Perspective

This study adopted two theories which are Maslow's theory of need and the slow impact theory. Previous research studies by De Leonibus (1978) and reviewed in 2008 by Owens suggests that student absenteeism and lack of motivation are intertwined. Educators have begun to investigate the theories of motivation to apply them to create policies in attempt to reduce the problem of student absenteeism. Motivation is usually considered as being related to human needs, which in turn motivates behavior.

As further explained by Owens (2008), once the lowest order of needs on the hierarchy is met, a higher order need appears, and the individual has a desire to satisfy that need. The hierarchy of needs as used in Maslow's theory of motivation is as follows: basic physiological needs (food, water, shelter, sex), security and safety, social affiliation, esteem; and self-actualization. Maslow's theory of need states that people are motivated to achieve certain needs and that some needs take precedence over others. Our most basic need is for physical survival and will be the first thing that motivates our behavior. Once that level is fulfilled the next level up is what motivates us and so on (SARFO, 2017).

Figure 1. Maslow's theory of need



Source- <https://worldofwork.io/2019/02/maslows-hierarchy-of-needs/2019>

An overview of the above figure 1 outlines the basic needs of a person to survive (food, water, warmth, and rest). These physiological requirements are important to guarantee the continuity of life. Man has little interest in considering safety needs without food. After fulfilling basic needs, man starts thinking about his protection needs. When a man feels secure, he is driven to pursue association and affection. Finding intimate relationships and friends is something that preoccupies his mind because, he now feels secured. Once man finds attachments, he is he becomes in need of esteem. He starts searching for glory and richness to make him feel successful. When all these stages have been reached, man starts to feel up to date. Its maximum potential is realized here. This means that man has no desire to reach higher heights without doing the most important simple stuff like that (SARFO, 2017).

An important link between this theory and the subject under consideration is that children do not want to go to school if basic matters are not provided, such as water, sanitation, and hygiene facilities in schools. Once the children's basic needs are met, they are motivated to reach higher levels through the learning process.

The second theory is the Solow impact theory. This research is based on David Romer's (2001) Solow Impact Theory. According to the theory, one of the major determinants of institutional performance is school attendance (Burke and Beegle, 2004). The Solow Impact, according to Orazem and Gunnarsson (2003), demonstrates the relationship between school attendance, academic performance, and social productivity. Bhattarai (2017) backs up this claim by claiming that social productivity is dependent on physical capital, labor, human capital, and knowledge, all of which have an impact on innovation and growth. According to Todd and Wolpin (2003), the aim of faculties is to develop human capital and knowledge to support citizens' social productivity roles. According to Ramirez and Boli (1987), the social productivity function is determined by a positive relationship between human capital per worker and output per worker.

According to Klenow and Rodriguez-Claire (1997), the academic achievement variable can be used to calculate human capital per worker. Academic achievement, according to Rana et al. (2015), is measured by the number of school years attended and the intellectual performance demonstrated. There is a widespread belief that when a society educates its workers, it increases the stock of human capital produced (Bils and Klenow, 2000; Todaro and Smith, 2015).

Finally, school access and regular attendance, also as satisfactory progress, and completion, are variables that have a big impact on educational achievement and human capital attainment (Thapa, 2013). (Dubow et al., 2009). For this study, the Solow Impact Theory was chosen because it emphasizes the importance of educational attainment, school attendance, and academic achievement. Academic success is the foundation for building a strong human capital that supports social productivity and development.

2.3 Empirical Review

Water and sanitation are major concerns around the world; for example, many of the world's school-age children have attended classes without running water or toilets; surprisingly, 40% of the world's school-age children have worm infections, predisposing to cognitive and developmental problems; and approximately 5000 children die every day because of water, sanitation, and hygiene-related diseases. Water and sanitation are among the world's top priorities and providing schools with adequate water and sanitation facilities has been designated as one of the components of the goal 6 post-2015 (MDG) target (UNICEF, 2020a).

According to WHO/UNICEF state that a school with adequate water, sanitation, and hygiene (WASH) has a reliable, sufficient, and clean water supply; enough toilets that are private, safe, clean, and gender segregated; hand washing facilities with water and soap; and hygiene education in the school curriculum. All children, including small children, girls of menstrual age, and children with disabilities, should have access to facilities. However, many schools in developing countries lack WASH services, which may have a negative impact on health and school attendance. In 2016, only 57 percent of schools in LDCs had adequate drinking water facilities, and 53 percent had adequate sanitation (Chard et al., 2019).

In low-income countries, students in intervention schools had better WASH knowledge, hygiene behavior (including hand washing after using the toilet), and fewer absences due to diarrhea than students in nonintervention schools. Students appear to have played a role as change agents at the household level as well, with self-reported hand washing at critical times significantly higher among intervention school household members. It should be noted that this evaluation is an assessment of a specific intervention rather than the potential for WASH in Schools to have an impact in any context (Vally et al., 2019).

Twelve studies in low-income countries were identified that examined the impact of school-based WASH programs on student absence and enrolment. Improved school WASH conditions may reduce student absence by providing services (including, importantly, for girls who are menstruating) and by reducing illness transmission. There is some evidence that improved handwashing with soap at school can reduce illness in school-aged children thereby reducing absence from school.

Interventions that deliver hand-washing promotion and point-of-use water treatment have reported reductions in student absence of between 21% and 61% with one study specifically identifying reduced absence among girls (i.e., 58% reduction in the odds of absence for girls). A school-based water and hygiene intervention in public primary schools in Kenya found a decrease in student absence of 35% relative to baseline as compared to a 5% increase in neighboring schools. Talaat et al. identified a 21% reduction in school absence from all illnesses (e.g., diarrhea, conjunctivitis, influenza) because of an intensive hand-washing campaign in Egypt; absences caused by influenza-like illness, diarrhea, conjunctivitis, and laboratory-confirmed influenza were reduced by 40%, 33%, 67%, and 50%, respectively (Talaat et al, 2011).

A small pilot study in Ghana entailed provision of sanitary pads and puberty education to adolescent girls in both intervention and control schools, with the intervention found to significantly improve attendance. Evaluation of a comprehensive WASH intervention in schools in Bangladesh using a non-experimental survey design reported a 9-12% reduction in school absence among girls (varying between schools). A trial of school-based WASH interventions in Kenya found that cleanliness of latrines was strongly correlated with recent student absence. And a study of hand-washing intervention in Chinese primary schools found that the expanded intervention (standard government education plus hand-washing program, soap for sinks, and peer hygiene monitors) reported 42% fewer absence episodes and 54% fewer days of absence, and the standard intervention (handwashing program) reported 44% fewer absence episodes and 27% fewer days of absence.

Some intervention studies, however, found no evidence of impact on attendance. A study in the Chitwan region of Nepal trialed the use of menstrual cups (a silicone cup used internally for menstrual flow management) with a small sample of schoolgirls. The study found the technology

had no impact on school attendance or school test outcomes; the authors suggest this is because the technology assisted only with management of blood and did not reduce cramps which were reported as the primary reason for non-attendance. However, the study had several limitations including self-reporting of menstrual cup usage, and lack of consideration of existing water and sanitation facilities in schools. And a trial in Kenya to assess the impact of a scalable, low-cost, school-level latrine cleaning intervention on pupil absence did not find a reduction in absenteeism; the authors hypothesized that the additional impact of cleaning may not have been sufficient to reduce absence beyond reductions attributable to the original WASH intervention (Vally et al., 2019).

The Ethiopian government has included water and sanitation in its development agenda; the National Hygiene and Sanitation Strategy aims for community and school adoption of improved sanitation and hygiene. In Ethiopia WASH related diseases are a critical problem, it is estimated that 88% of diarrheal disease is caused by lack of safe water supply, inadequate sanitation, and bad hygiene behavior. Many Ethiopian schools lack adequate water and sanitation services, which may have a negative impact on health and school attendance. It is estimated that only 33% of Ethiopian schools have improved sanitation facilities for students and teachers, and only 31% have access to water. Water, hygiene, and sanitation issues affect children's right to education in a variety of ways. For example, 400 million school-aged children are infected with intestinal worms each year, which research shows reduces their learning abilities (Tsige et al., 2019).

2.4 Conceptual Framework of the Study

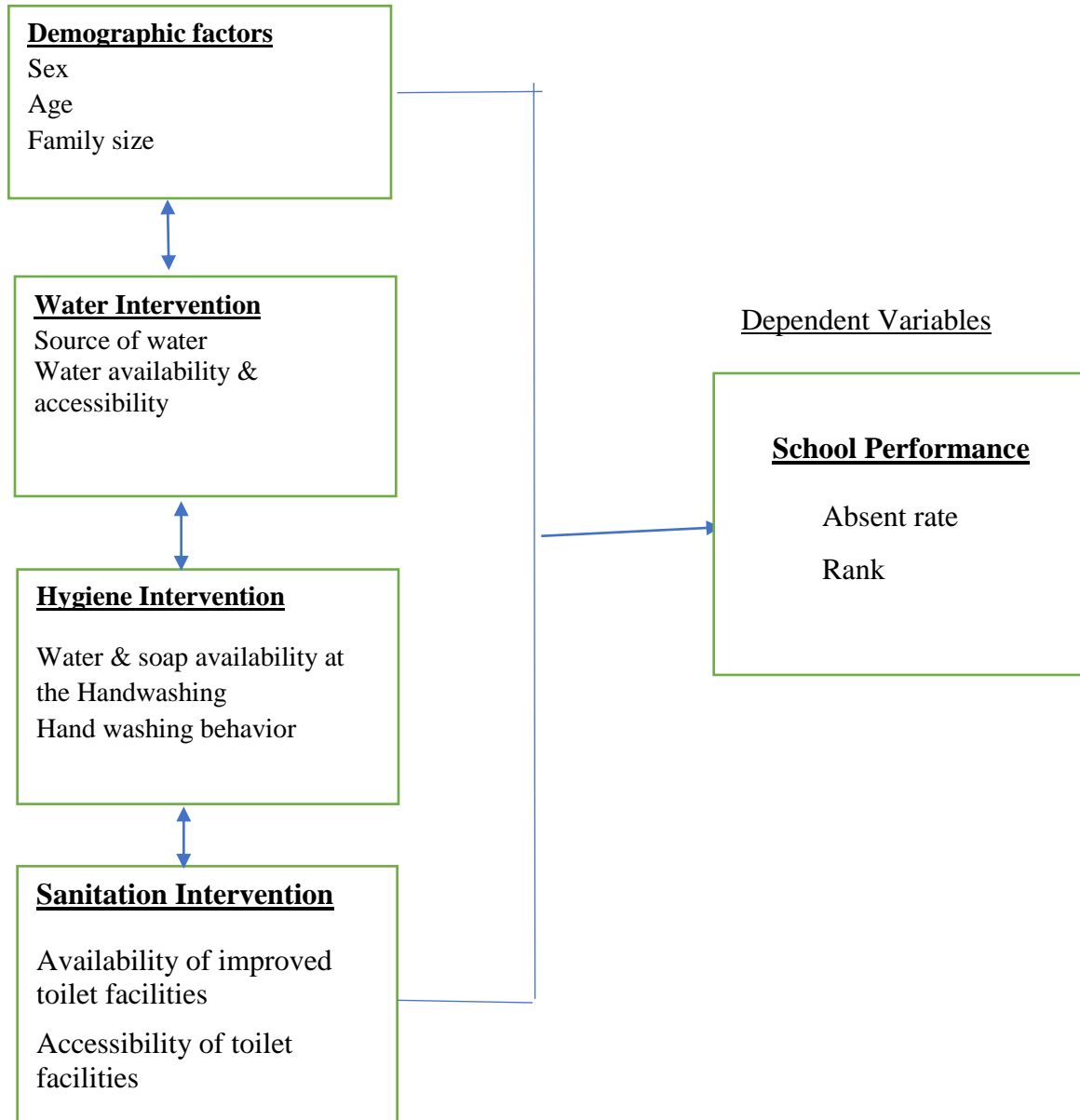
After conducting a different theoretical and empirical review, it is important to develop a conceptual framework that shows the link between water, sanitation, and hygiene interventions in children's school performance, such as absences and rank. This conceptual framework will serve as a guide for research in the collection and analysis of relevant data. Therefore, the framework provides details of the variables examined and the expected relationship/impact between the different variables considered for research.

Schools with adequate water, sanitation, and hygiene (WASH) facilities have: a reliable water system that provides safe and sufficient water, especially for hand washing and drinking; enough toilets for students and teachers that are private, safe, clean, and culturally and gender appropriate; water-use and hand-washing facilities, including some close to toilets; and sustained

hygiene promotion. Facilities should cater to all, including small children, girls of menstruation age, and children with disabilities. WASH conditions in schools in many low-income countries, however, are inadequate with associated detrimental impacts on health and school attendance. An evaluation by UNICEF found that in schools in low-income countries, only 51% of schools had access to adequate water sources and only 45% had adequate sanitation. Globally, school-based WASH interventions variously aim to: (i) reduce the incidence of diarrhea and other hygiene related diseases; (ii) improve school enrolment, school performance, and attendance; and (iii) influence hygiene practices of parents and siblings whereby children act as agents of change in their households and communities (McMichael, 2019). As indicated in on the below conceptual framework all these dimensions impact children school performance directly or indirectly. The dependent variable for this research is school performance which measured by absent rate and rank. The independent variable for this study that they have effects for student's school performance in Addis Ababa government schools. The figure below demonstrates how several factors interact to influence children's school performance in Addis Ababa government primary and secondary schools. These are demographic factors, water intervention, hygiene intervention, and sanitation intervention. Water supply and availability at schools have been shown to have a positive impact on students' academic performance. Students in schools that have benefited from WASH actors such as hygiene have improved their academic performance. Another factor is that sanitation interventions are likely to have an impact on students' academic performance.

Figure 2: The impact of WASH interventions on student’s school performance: a conceptual framework

Independent Variables



Source- Own formulation 2021

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

This chapter presents the research methodology and procedures employed in conducting this research. The chapter covers research design, data sources, method of data collection and instruments, sampling method, Here the description of the study, research approach, research design the source of data and type of data, the target population, sampling techniques, sampling size, instrument of data collection, and data analysis methods are discussed under this chapter.

3.1 Description of Study Area

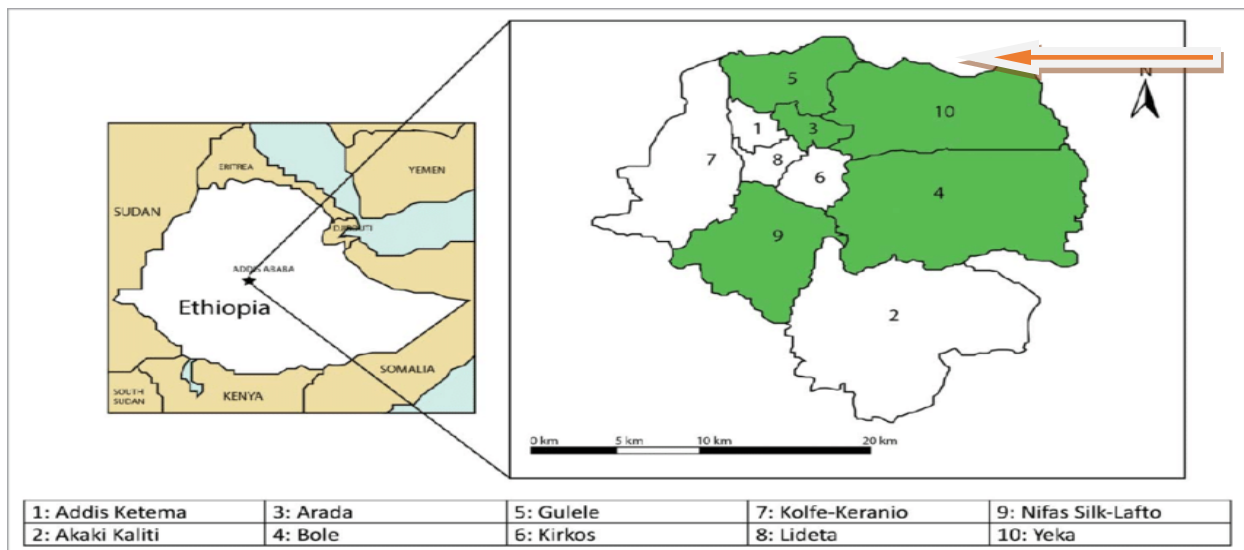
The city of Addis Ababa is the capital and largest city in the country which located in the center of Ethiopia. It is also considered the political capital of Africa; Addis Ababa is where the African Union is headquartered and the sit of different continental and international organizations including United Nations Economic Commission for Africa (ECA). The population of Addis Ababa in 2021 is now estimated to be 5,005,524. Addis Ababa had a population of 392,000 people in 1950. Since 2015, Addis Ababa has grown by 211,825 people, representing a 4.42 percent annual increase. These population estimates and projections are based on the most recent revision of the United Nations World Urbanization Prospects. These figures represent Addis Ababa's urban agglomeration, which typically includes the city's population as well as adjacent suburban areas (United Nation, 2021).

According to the 2007 national census, 98.64 percent of Addis Ababa's housing units had access to safe drinking water, with 14.9 percent having flush toilets, 70.7 percent having pit toilets (both ventilated and unventilated), and 14.3 percent having no toilet facilities. There were 63 public toilets in the city in 2014, with plans to build more. Other reported common indicators of Addis Ababa's standard of living in 2005 include the following: Adult literacy for men is 93.6 percent and for women is 79.95 percent, the highest in the country for both sexes; and the civic infant mortality rate is 45 infant deaths per 1,000 live births, which is less than the national average (T. Finance, 2015).

The problem of access to clean water, sanitation and hygiene affects majority of the Ethiopian population. This research will specifically focus on the impact of school WASH interventions on

the improvement of student’s school performance in Addis Ababa at the selected primary and secondary schools. Hence the research area for this study is Addis Ababa at Yeka sub city which is the second populous sub city in Addis Ababa. There are 17 NGOs in Addis Ababa who works WASH in school project. Yeka sub-cities have the highest number of implementing NGOs, which is 8 organizations from 17 NGOs since 2013 (Mathijs et al., 2018). Yeka Sub-City is geographically found at north-eastern part of Addis Ababa, having dynamic topography. Based on CSA population projection for the year 2016, Yeka Population is estimated 424,217.

Figure 3: Map of study area



Source <https://www.researchgate.net/figure/Map-of-Addis-Ababa-with-administrative-sub-city-designations-Highlighted-sub-cities>

3.2 Research Design and Approach

The study employed a cross-sectional study design to examine the impact of WASH interventions on the improvement of children’s school performance in Addis Ababa. A mixed-methods approach was used in the study. The study used both qualitative and quantitative approaches to collect data to conduct a thorough analysis and understanding of the impact of WASH intervention on improving student school performance in the study area. STATA 14 was used to express the results in numerical and quantitative forms using a quantitative approach. Closed-ended questionnaires were analyzed quantitatively to help reach a conclusion about the impact of WASH intervention on school performance improvement. Secondary data obtained from related documents was also analyzed using document review. To analyze open-ended

questions, a qualitative approach was used. Key informant interview items for school principals, NGO officials, and AAEB officials were prepared in a semi-structured format. The key informant interview results were used to supplement the data collected through the various instruments used in this study.

The findings in this study were presented using a descriptive and explanatory approach and analysis. The descriptive approach's main goal is to describe the characteristics of the phenomenon. As a result, descriptive design is appropriate for assessing the impact of WASH intervention on student school performance. The explanatory design was also used to explain the impact of the WASH intervention on their academic performance.

3.3 Methods of Data Collection and Instruments

To gather the data from relevant sources, both primary and secondary data collection techniques were used. Primary data was collected through fieldwork by using a questionnaire. The survey questionnaire was prepared in English and translated to Amharic. In addition, a checklist was used for guiding key informant interviews that will be carried out with selected key informants from among the school communities such as school principals and experts and officials from relevant governmental and non-governmental organizations.

In this study, 12 key informant interviews were conducted. Six of the interviews were with principals and two with Splash International staff. The remainder was from the AHA and AAEB. The reason for choosing these respondents is that AHA and Splash addressed many schools in Addis Ababa, particularly in the Yeka sub-city. Following students, school principals are the second most knowledgeable respondents. And the Addis Ababa Education Bureau oversees monitoring NGO activities in the city. Secondary data was gathered, from related literature, publications in various journals, CSA reports and databases, and non-governmental organizations' reports.

3.4 Data Collection Techniques

As stated in the previous section, the study focused on schools in the Yeka sub-city. According to the Yeka sub-city education bureau, the sub-city has 50 schools. Out of 50 schools, 8 of which are KG schools, 22 of which are KG and primary, 10 of which are primary schools, 1 of which is primary and secondary, 7 of which are secondary, 1 of which has both secondary and

preparatory, and the remainder 1 is preparatory. For this study, only primary and secondary schools have been selected. Students should have the ability to analyze questions, answer appropriately and they should understand the intervention provided in their school and identify the gaps to participate in this study. Students were selected starting from grade 5 because the researcher learned students who are in the upper primary schools tend to use WASH infrastructures and hygiene behavior programs. Furthermore, female students over the age of 14 tend to be in the menstruation cycle, which allows them to understand the issue of school menstrual health management and hygiene facilities.

Purposive sampling was adopted to select the schools in the Yeka sub-city for this study. According to the Yeka sub-city education bureau, 44 schools have received one or two WASH intervention packages. Out of the 44 schools, only ten schools have received all WASH intervention package from various organizations since 2013. The remaining six schools receive no WASH assistance from any of the organizations. The researcher used all nonintervention schools as a control group and purposefully chose six schools from the ten that received a full WASH intervention based on the number of students. The researcher chose six schools to be proportional to the non-intervention group and to ensure that the results were not biased due to the large difference in sample size between the intervention and non-intervention groups. The six schools were chosen based on the project's life cycle, or how long the WASH intervention has been in place at the school. Following the school selection, the researcher randomly selected students from a one-time shift student list ranging from fifth to tenth grade. Simple random sampling was chosen for this study because it is the most common and simplest method of sampling. A type of probability sampling in which a subset of participants is chosen at random from a population is known as simple random sampling. Everyone in the population has an equal chance of being selected. The information is then gathered from as large a proportion of this random subset as possible. This method is the simplest of all probability sampling methods because it only involves a single random selection and requires little prior knowledge of the population. (Thomas, 2020)

3.4 Sample Size Determination

There are several methods for calculating the sample size of respondents from a limited population. Because the study population is limited, the sample size is determined using

Yamane's (1970) formula. This method is the best way to determine sample size for a finite population. For this study, the total number of one shift students was 493 and 432 students were from the non-intervention group. This calculation is shown as follows: -

Where N is the total population

n = desired sample size

e = precision level valid at a 95% confidence level (0.05).

Then, the samples contained 221 students were selected using random sampling from 12 schools.

$$\text{Thus, } n = \frac{N}{1 + N(e)^2}$$

$$n = \frac{925}{1 + 925(0.05)^2}$$

$$n = 925 / 1 + 2.3125$$

$$n = 925 / 3.3125$$

$$\mathbf{n = 279}$$

N - Total Population size = 925

n - Sample size = 279

3.5 Sources of Data

Collecting data from both primary and secondary sources is necessary to layout answers to the main research questions. As a result, primary and secondary data sources were used in this study. Primary sources of data were gathered from various categories of informants via key informant interviews and student questioners. Secondary data was gathered from a variety of relevant works of literature, including publications, books, government and non-governmental official documents, WASH reports, and internet websites.

3.5.1. Primary Data Source

(A) Student Survey Questionnaire: a questionnaire is a collection of carefully crafted questions designed to address specific objectives or research questions. (Babbie, 1990) As a result, it's a search instrument that consists of a series of questions designed to elicit information from respondents. Closed-ended questionnaires were distributed to study participants for this study. The goal of using a questionnaire is to reduce the interviewer's bias by collecting information

from many respondents in a short period of time. Furthermore, it allows for the use of a large sample size, which may result in dependable and reliable results (C.R.Kothari, 2004).

As a result, to collect enough information and increase the dependability and reliability of the results, this study employs a structured and semi-structured questionnaire as a data collection instrument. The questionnaire was translated into Amharic and distributed to student respondents.

(B) Key Informant Interviews: depending on the needs of the study, interviews can be in-depth or key informant, structured, unstructured, or semi-structured. They are regarded as popular data collection methods because they enable the interviewer to gather in-depth, detailed, and specific information from a small number of informants (MASON, 2002).

Key informant interviews are a rich source of information that effectively delve into people's thoughts, opinions, experiences, and aspirations (H. Strydom, 2011). As a result, key informant interviews were conducted using structured, semi-structured, and unstructured mechanisms in the study. The main goal of using key informant interviews is to gather a significant amount of information from a few carefully chosen informants. Key informant interviews were conducted with a select group of school principals, NGO workers, and government officials.

3.5.2. Secondary Data Source

This study collected secondary data from both published and unpublished sources. Published data gathered from various federal and regional office publications (e.g., census reports, annual reports, and departmental reports); and ii) various publications of foreign governments or international bodies and their subsidiary organizations (WHO, UNDP, UNICEF, UN-Water). iii) A variety of research reports IV) Authors' books, magazines, newspapers, articles, proclamation, strategies, guidelines, reports, and different web sites for analysis.

3.6 Description of Study Variables

There are two categories of variables: dependent and independent variables.

Dependent Variable: the dependent variable is the result or expected impact of a change in the independent variable. For this study the dependent variable is school performance which expressed by rank and absenteeism. Both are continuous variables that were measured in descending order. When the absent rate falls to one or zero-days, it is a lower absent rate, which

has a positive impact on school performance. Rank is also measured as a better rank when students' semester rank is closer to 1 and is thought to have a direct relationship with school performance.

Independent Variables: the independent variable is the variable that is thought to influence the dependent variable. Four independent variables were used by the researcher. The first variable was demographic information such as gender, age, and educational level. The second variable was water intervention, which was defined as safe water supply and water availability at school. The third variable was the availability and accessibility of proper sanitation facilities at school for all students. Hygiene programs, such as students' handwashing behavior, water availability, and soap availability at handwashing stations, were the fourth independent variable.

3.7 Unit of Analysis

One of the most critical concepts in a research project is the unit of analysis. Individuals, groups, regional units (city, census panel, state), and social interactions (books, photos, newspapers) are some examples of research sections in an evaluation (dyadic relations, divorces, arrests). This study's primary unit of analysis is students enrolled in the 2013 E.C. These students were chosen from Addis Ababa's primary and secondary government schools in the Yeka sub-city. Additional data was gathered from school principals, non-governmental organization workers, and government officials.

3.8 Method of Data Analysis

In this study both quantitative and qualitative method of data analysis were used. The questionnaire and key informant interviews were used to collect relevant data. In addition, secondary data were used.

Quantitative data analysis: which was then analyzed using the descriptive and inferential statistics model used were used with the help of the computer software STATAT 14. It is critical to examine the impact of WASH interventions on students' school performance in the study area. Cross-tabulations, graphs, and charts are used to present the results. In addition, in this study Pearson's correlation analysis were used to see the association between variables.

Qualitative data analysis: data collected from key informant interviews was analyzed by examining the transcriptions of interviews and identifying common themes from respondents' description through inductive analysis.

3.9 Model Specification

Propensity Score Matching (PSM) model was used to see the average treatment impact of the study. PSM is a statistical matching technique that attempts to estimate the impact of a treatment, policy, or other intervention by accounting for the covariates that predict treatment receipt. PSM attempts to reduce the bias caused by confounding variables in an estimate of the treatment impact obtained by simply comparing outcomes between units that received the treatment versus those that did not. The technique was invented in 1983 by Paul R. Rosenbaum and Donald Rubin.

Bias exists because a difference in treatment outcome (such as the average treatment impact) between treated and untreated groups may be caused by a factor that predicts treatment rather than the treatment itself. Randomization in randomized experiments allows for unbiased estimation of treatment impacts; for each covariate, randomization implies that treatment groups will be balanced on average due to the law of large numbers. Matching attempts to reduce the treatment assignment bias, and mimic randomization, by creating a sample of units that received the treatment that is comparable on all observed covariates to a sample of units that did not receive the treatment (Brewer & Picus, 2016).

Various approaches are available in the literature that can be used for studying causal relationships (Angrist, 2008). For this specific study a Propensity Score Matching (PSM) technique is used to identify the treatment impact of WASH interventions because the data used for the present study is an observational data and as such, we do not have a baseline.

In this research we have two groups, students who are benefited from the WASH interventions and students who are not benefited from the WASH interventions. So that the researcher used PSM to see treatment impact. The primary benefit of using PSM is the extent to which observed characteristics drive program participation. If the selection bias from unobserved characteristics is likely to be negligible, PSM may be a good alternative to randomized estimates. Another

advantage of PSM is that it does not always necessitate a baseline or panel survey, though the resulting cross-section does as it's known this study used a onetime data.

Consider an intervention in the form of a treatment intended to produce a desired outcome. This can be conceptualized in terms of potential outcomes under treatment and control. Within this framework, the causal impact, the resulting outcome, can be measured as a difference between an observed outcome its counterfactual. Let Y_{i1} and Y_{i0} be the potential outcome for student i if she receives the treatment and does not receive the treatment. The treatment impact for each student can be defined as,

$$(1) \quad \tau_i = Y_{i1} - Y_{i0}$$

A problem with this formulation of measuring the treatment impact is that Y_{i1} and Y_{i0} cannot be observed both at the same time. If T_i is a treatment indicator which assumes a value of 1 if the student is in the treatment group and 0 if the student is in the control group, then equation (1) above can be rewritten as,

$$(2) \quad Y_i = T_i Y_{i1} + (1 - T_i) Y_{i0}$$

If the assignment to treatment is randomized, then treatment assignment is independent of all baseline variables. Hence, with increasing sample size baseline variables, both observed and unobserved, are balanced between treatment and control groups, i.e., $\{Y_{i0}, Y_{i1} \perp T_i \text{ for } i = 0,1\}$. Taking expectations, at the baseline the balance between all variables can be denoted as,

$$(3) \quad E(Y_{ij}|T_i = 1) = E(Y_{ij}|T_i = 0) = E(Y_i|T_i = j) \text{ for } j = 0,1$$

The Average Treatment Impact (ATE) for the sample can be estimated as,

$$(4) \quad ATE = \tau = E(Y_{ij}|T_i = 1) - E(Y_{ij}|T_i = 0)$$

In a randomized experiment, students in the treatment and control groups are exchangeable. Hence, equation (4) can be rewritten as,

$$(5) \quad ATE = \tau = E(Y_{ij}|T_i = 1) - E(Y_i|T_i = 0)$$

In an observational setting, which is the context of the present research, variables are not balanced between treatment and control groups. In this case, the Average Treatment impact on the Treated (ATT) becomes the casual or impact measurement of interest. The ATT is given as,

$$(6) \quad ATT = \tau|(T = 1) = E(Y_{i1}|T_i = 1) - E(Y_{i0}|T_i = 1)$$

A problem with equation (6), however, is that it cannot be estimated directly because Y_{i0} is not observable for the treated. One way of circumventing this hurdle is to assume that selection into the treatment group depends on observed variables, \mathbf{X} . This can be used to conclude that treatment assignment unconfounded conditional on a vector of observed variables, \mathbf{X} , i.e., $\{Y_{i0}, Y_{i1} \perp T_i \mid \mathbf{X} \text{ for } i = 0,1\}$, and that there is overlap, i.e., $0 < \Pr(T = 1 \mid \mathbf{X}) < 1$. These two conditions makeup the strong ignitability of treatment assignment which is need for identification of the ATE. For ATT estimation, the balance assumption can be reduced to mean independence requirement, and the overlap assumption requires that the support of \mathbf{X} for the treated be a subset of the support of \mathbf{X} for the control observations. This overlap is calibrated using a propensity score generated as the probability of being assigned into the treatment group. Hence, Equation (3) can be rewritten as,

$$(7) \quad E(Y_{ij} \mid \mathbf{X}, T_i = 1) = E(Y_{ij} \mid \mathbf{X}, T_i = 0) = E(Y_i \mid \mathbf{X}, T_i = j) \text{ for } j = 0,1$$

The ATT can then be given as,

$$(8) \quad ATT = \tau \mid (T = 1) = E\{E(Y_{i1} \mid \mathbf{X}, T_i = 1) - E(Y_i \mid \mathbf{X}, T_i = 0) \mid T_i = 1\}$$

Where the outer expectation is taken over the distribution of $X_i \mid (T_i = 1)$ which is the distribution of baseline variables in the treated group.

For balancing between student observations in the treatment and control groups, various matching approaches are practiced in the literature (Angrist, 2008). For the present study, we employed a one-to-many nearest neighborhood matching where one student in the WASH intervention group is matched with at least one student in the non-intervention group.

CHAPTER FOUR

DATA ANALYSIS, RESULT AND DISCUSSION

This section discusses the Demographic characteristics, descriptive and inferential results of the study. Furthermore, the qualitative findings of the study are presented in this chapter. Discussions about the demographic and socioeconomic characteristics of the sample students are included in the descriptive statistics results section. In terms of response rate, the researcher distributed 279 questionnaires to 12 schools in the Yeka sub-city but received only 79.2 percent of the total response rate (221).

4.1 Summary Statistics

We had 221 observations for this study, and the average rank of the student is 10, with a maximum rank of 38 and a minimum rank of 1. The absent rate is one of the dependent variables in this study; among the total 221 respondents, the maximum day that students were absent from school was 9 days, whereas there were students who had not been absent from school due to WASH-related disease in the previous academic year. Safe water availability is one of the WASH components being studied in terms of its impact on student school performance. We examined water sources and water availability at each school and found that 38.5 % of respondents have access to safe drinking water at their school. Concerning sanitation, 23 % of students reported having access to proper sanitation at their school, while the remaining reported not having access to proper sanitation at their school.

In this study, hygiene was defined as the availability of water and soap at the hand washing station, as well as the behavior of students who washed their hands before lunch and after using the restroom. From the total of 221 respondents, 9.5 % have all hygiene facilities and practice good hygiene behavior.

As stated in demographic section of this study, 60.63 % of the respondents are female students, with the remainder being male students. In this study, the researchers selected students at random from grades 5 to 10, with a minimum grade of 5 and a maximum grade of 10. The researcher determined the family size of each student who took part in this study. Students have a maximum family size of ten and a minimum family size of two. As a result, the average family size in this study is six.

To examine the impact of WASH on student school performance, the researcher collected data from schools that benefited from WASH interventions and schools that did not benefit from WASH interventions implemented by various WASH actors in Addis Ababa. The treatment group accounts for 46.6 % sample size and the rest are a control group.

Table 1: Statistical summary of the variables

Variable	Obs	Mean	Std. Dev.	Min	Max
Rank	221	10.1086	7.642404	1	38
Absent	221	.321267	1.495736	0	9
Water	221	.3846154	.4876087	0	1
Sanitation	221	.2307692	.4222815	0	1
Hygiene	221	.0950226	.2939119	0	1
Sex1	221	.6063348	.4896712	0	1
Grade	221	7.271493	1.651047	5	10
Family size	221	5.61086	1.590503	2	10
Intervention	221	.4660633	.4999794	0	1

Source: Survey data computed in STATA 14, 2021.

4.2 Respondents' distribution by WASH interventions

The purpose of this study was to learn about the impacts of WASH interventions on students' school performance in Addis Ababa. In this case, we have two groups that receive WASH interventions from different actors and another group that does not receive any WASH interventions. Table 2 below shows that 118 (53.39 percent) of the total population did not receive the interventions, while the remaining 103 (46.61 percent) received school WASH interventions.

Table 2: Intervention distribution of Respondent

Intervention	Freq.	Percent
Control	118	53.39
Treatment	103	46.61
Total	221	100.00

Source: - Survey data computed in STATA 14,2021

4.3 General Overview of Respondents

4.3.1 Demographic characteristics

In this research questionnaires were distributed to students in Addis Ababa governmental schools to establish the respondents' background and demographics, which is a social measure of the authenticity of the responses on demographic data. From a total sample size of 221 students, 134 female and 87 male respondents dealt with sex (Table 3). As seen in table 2, 134 (60.63 %) of respondents representing the total number of participants were females, while 87 (39.37 %) of respondents representing the total number were males. This clearly shows that there were more female participants than male participants in this study.

Table 3: Sex distribution of the respondents

Sex	Freq.	Percent
Male	87	39.37%
Female	134	60.63%
Total	221	100.00%

Source: - Survey data computed in STATA 14, 2021

A total of 221 pupils, ranging in age from 11 to 20, took part in this study. For this study, the average respondent age was 14.6 years old. The family size is another demographic characteristic for this study. The average family size of the respondents was 5.6, with 2 being the smallest and 10 being the largest (table 3).

Table 4: Age and family size distribution of the respondents

Variable	Obs	Mean	Std. Dev.	Min	Max
Age	221	14.59729	1.73357	11	20
Family Size	221	5.61086	1.590503	2	10

Source: - Survey data computed in STATA 14,2021

The data for this study was gathered from students ranging in educational level from 5 to 10th grade. According to table 4 respondents 165 (74.66 percent) of the students are in grades 5 through 8, with the remaining 56 (25.34) being high school students in grades 9 and 10.

Table 5: Educational level of the respondents

Educational level	Freq.	Percent
5-8	165	74.66
9-10	56	25.34
Total	221	100.00

Source: - Survey data computed in STATA 14,2021

4.4 Impacts of wash (Descriptive statistics)

4.4.1 Status of access and availability of water

According to Table 6:, out of a total of 221 respondents, 206 (93.2 percent) students responded that there is a water source at their school, while 15 (6.79 percent) students responded that there is no water source at school. From this table more than 90% of students have water source at schools.

Table 6: Drinking water sources

Drinking water sources	Freq.	Percent
Yes	206	93.21%
No	15	6.79%
Total	221	100%

Source: - Survey data computed in STATA 14,2021

Table 7: shows that there is statistically significant correlation water source and intervention at the P- value of 0.007 or at 0.7%.

Table 7: Drinking water sources Crosstab with treatment and control groups

Drinking water sources	Intervention		Total
	Control	Treatment	
Yes	105	101	206
	50.97%	49.03%	100%
No	13	2	15
	86.67%	13.33%	100 %
Total	118	103	221
	53.39%	46.61%	100%

Pearson chi2(1) = 7.1592 Pr = 0.007

Source: Survey data computed in STATA 14,2021

There are various types of water sources at schools; 6.1 percent of the total 301 responses were piped water supply into the school building. The most common response (32.6 percent) is piped

water supply into school yard. The filtered piped water supply into the school yard received the second highest response, with a frequency count of 26.1 percent of the responses. The other response that students gave as a source of water was tanker or cart, which accounted for 19.35 percent of all responses. Other options include filtered piped water supply into the school building, piped water supply into the school building, public tap, protected wellspring water, rainwater, and unprotected spring water.

Table 8:Types of water source

Types of water source	Frequency	Percent of responses	Percent of cases
Piped water supply into the school building	19	6.13	8.92
Piped water supply into schoolyard/plot	101	32.58	47.42
Filtered piped water supply into the school building	25	8.06	11.74
Filtered Piped water supply into schoolyard/plot	81	26.13	38.03
Public tap/standpipe out of schoolyard/plot	14	4.52	6.58
Protected well/spring	10	2.91	4.23
Tanker-truck or cart	60	19.67	28.64
Total	310	100.00	145.54

Source: Survey data computed in STATA 14,2021

Water Availability: this refers to both sufficient quantities and reliability of service provisions. From this research participants, 86 (38.91) of them responded that there is an available of water at their school. And the rest of them which is 61.09 % of respondents do not have availability of water at their school. This result shows that out of the 86 students who responded that there is water available at any time in the school, 48 of them are from schools that received WASH intervention. In this research, some students responded no water availability in their school even though the school received the intervention.

Table 9: Water availability

Water availability	Intervention			
	Nonintervention	Intervention	Total	Percent
Yes	38	48	86	38.91%
No	80	55	135	61.09%
Total	118	103	221	100%

Pearson chi2(1) = 4.7964 Pr = 0.029

Source: Survey data computed in STATA 14,2021

4.4.2 Functionality of drinking water stations

From the total of 221 respondents, 135 respondents stated that there is no available water in the school. Water unavailability is caused by the malfunctioning of water points, according to 48 of the 135 respondents. The p-value for this study is 0.000, which means that there is a strong association between water availability and water point functionality in this study.

Table 1: Water availability crosstab with functionality of water point

Water availability	Functionality of water point			
	N/A	Yes	No	Total
Yes	86	0	0	86
No	0	48	87	135
Total	86	48	87	221

Pearson chi2(2) = 221.0000 Pr = 0.000

Source: Survey data computed in STATA 14,2021

In this study we can say that accessibility of water at school have a positive impact on the learning process. The statistical analysis shows that there is a strong association between water availability and the learning process, with a p-value of 0.000.

Table 11: Water availability cross tab with impact on learning process

Water availability	Impact on learning process		
	Yes	No	Total
Yes	86	0	86
No	0	135	135
Total	86	135	221

Pearson chi2(1) = 221.0000 Pr = 0.000

Source: Survey data computed in STATA 14,2021

Table 12: below shows the frequency and percentage of responses that water availability affects the learning process. Water availability has several effects on students' learning processes; 18.06 percent of respondents reported feeling hydrated while at school. From the total 144 responses, 33.33% (48) of responses indicate a sense of well-being or healthy because of the ability to access clean water at any time at school. 21.53% of those who responded said they focused on each lesson. Other responses, such as avoiding thirst and avoiding experiencing frequent dizziness at school, have a frequency of 20 and 19 times, respectively.

Table 12: The effect of water availability on students learning process

Impact on learning process	Frequency	Percent of responses	Percent of cases
Feel Hydrated	26	18.06%	31.71
Feeling healthy	48	33.33%	58.54
Concentrate on each lesson	31	21.53%	37.80
Avoid thirsty	20	13.89%	24.39
Avoid dizziness	19	13.19%	23.17
Total	144	100%	175.61

Source: Survey data computed in STATA 14,2021

There are over 93 million disabled children worldwide. Most of these children are from developing countries, and they are among the most disadvantaged and omitted groups in society. Disabled children have the same rights as any other child, including the right to clean water,

hygiene, and sanitation, but they may have special needs, and it is the responsibility of the WASH sector to meet the needs of ALL children, including disabled children.(UNICEF, 2016)For this study 43.89% of responses mentioned that water points are not accessible for students with limited mobility (disabilities) and the smallest children at schools.

Table 13: Waters point accessibility for disabilities

Water accessible for disabilities	Freq.	Percent
Yes	81	36.65%
No	97	43.89%
I don't know	43	19.46%
Total	221	100.00

Source: Survey data computed in STATA 14, 2021

Respondents listed various reasons for the inaccessibility of the water point at school, with 47 responding that drinking water stations have stairs and narrow doors, complicating the lives of disabled and small children at school. The other reason is insufficient tap height; 34.64 % indicated that drinking water taps are inaccessible to people with disabilities and small children. Some respondents (28 responses) believe that water points without handrails make it difficult for disabled and small children to access drinking water at school. The final reason is that water point taps are difficult to open and close, which received 25 (16.34 %) of the total 153 responses.

Table 14: Reasons for not accessibility of taps for disability and smallest children at school

Reasons	Frequency	Percent of responses	Percent of cases
stairs, narrow door	47	30.72%	48.96%
Inadequate tap height	53	34.64%	55.21%
No handrail	28	18.30%	29.17%
Water taps difficult to open/close	25	16.34%	26.04%
Total	153	100%	159.38

Source: Survey data computed in STATA 14,2021

As stated in the preceding section, all children have the right to access water both at school and at home. This study used statistical analysis to determine the relationship between water availability and accessibility of water points for disabled students and the shortest students at school. In this case, the P-value of 0.001 indicates there is a strong association between water availability and water point accessibility for children with limited mobility and the smallest children.

Table 15: Water availability crosstab with water accessibility for disabilities

Water availability	water point accessible for disabilities			Total
	Yes	No	I don't know	
Yes	43	25	18	86
No	38	72	25	135
Total	81	97	43	221

Pearson chi2(2) = 14.0477 Pr = 0.001

Source: Survey data computed in STATA 14,2021.

According to the findings of this study, schools without WASH intervention have water infrastructure that are inaccessible to children with limited mobility and smallest students. So, with a p-value of 0.009, there is an association between WASH intervention and water point accessibility for students with limited mobility and the smallest child.

Table 16: Water point accessibility crosstab with intervention

Water point accessibility	Intervention		Total
	Control	treatment	
Yes	35	46	81
No	63	34	97
I don't know	20	23	43
Total	118	103	221

Pearson chi2(2) = 9.3984 Pr = 0.009

Source: Survey data computed in STATA 14,2021.

Table 17: below shows that from the total 221 respondents who took part in this study, 62 (or 28.05 percent) were infected with WASH-related diseases such as Typhoid, Cholera, Giardia, Dysentery Diarrhea, etc. The remaining 71.95 percent were not infected.

Table 17: WASH related disease

WASH related disease	Freq.	Percent
Yes	62	28.05%
No	159	71.95%
Total	221	100%

Source: Survey data computed in STATA 14,2021.

Millions of children around the world do not have access to drinking water, toilet facilities, or soap for hand washing at school, making learning difficult and potentially disastrous for their future. Globally, one in every three children does not have access to sanitation or drinking water at school, and nearly half of all schools do not provide basic hygiene services. In this case, children who are unable to wash their hands are more susceptible to infection and diarrheal disease than those who can (UNICEF, 2020a).

As a result, one of the goals of WASH actors is to reduce WASH-related diseases in schools. According to this study, most of the students infected with WASH-related diseases attend schools that do not receive WASH intervention from any of the WASH actors. The statistical analysis reveals that WASH-related illnesses at school and WASH intervention have a p-value of 0.038. (3.8 %).

Table 18: WASH related disease crosstab with intervention

WASH related disease	Intervention		Total
	Control	Treatment	
Yes	40	22	62
	64.52%	35.48%	100%
No	78	81	159
	49.06%	50.94%	100%
Total	118	103	221
	53.39%	46.61%	100%

Pearson chi2(1) = 4.2840 Pr = 0.038

Source: Survey data computed in STATA 14,2021

4.5 Absent Rate

School-aged children are particularly vulnerable to water, sanitation, and hygiene (WASH)-related morbidities, such as soil-transmitted helminths and trachoma; this age group suffers from more than 2.8 billion cases of diarrhea each year. These infections are linked to increased absence, which can lead to poor academic performance and an increased likelihood of dropping out, preventing children from reaping the numerous economic and health benefits associated with education (Trinies et al., 2016). For this study, out of the total of 62 students who were infected by WASH related disease 46 of them which is 74.2% were absent during the illness.

Table 19: WASH related disease crosstab with absent rate

WASH related disease	Absent rate			Total
	N/A	Yes	No	
Yes	0	46	16	62
No	159	0	0	159
Total	159	46	16	22

Pearson chi2(2) = 221.0000 Pr = 0.000

Source: Survey data computed in STATA 14,2021

According to the above statistical analysis, there is a clear association between WASH-related disease infection and school absenteeism. Students who took part in this study stated that absenteeism affects academic performance. Some students stated that missing exams while absent is common, that some students miss important lessons from all subjects, and that others were unable to keep up with the rest of the students and took the time to review the lessons they had missed.

Table 20: The impact of being absent at school

Impact of absenteeism	Frequency	Percent of Percent
Missed exams	24	26.67%
Miss important lessons for all subjects	25	27.78%
could not cope up with the rest of the students	19	21.11%
Took time to cover the lessons	22	24.44%
Total	90	100%

Source: Survey data computed in STATA 14,2021

4.6 Availability and Accessibility of Sanitation Facilities

In 2019, nearly two out of every three children had access to basic sanitation at their school. The presence of functional and private school toilets can have a positive impact on health and learning outcomes, especially for girls. In 2019, nearly 698 million children worldwide (37%) lacked access to basic sanitation at school. Nearly 367 million (19%) of them had no sanitation service at their school. From 2015 to 2019, global coverage of basic sanitation services in schools increased by 0.7 percentage point. To achieve universal access by 2030, current rates of progress would have to be increased fivefold (UNICEF, 2020b). In this study 221 students have been participated, only 8 of responded that there is sanitation (toilet) facility at their school.

Table 21: Sanitation facility

Sanitation facility	Freq.	Percent
Yes	213	96.38%
No	8	3.62%
Total	221	100%

Source: Survey data computed in STATA 14,2021

According to WHO Improved sanitation facilities are those that separate human waste from human contact in a sanitary manner. Flush or pour-flush to piped sewer system, septic tank pit latrines, ventilated-improved pit latrines, or pit latrines with slab or composting toilets are examples of improved sanitation. Sanitation facilities for shared or public use are not considered to be improved. Furthermore, flushing or pouring to another location, pit latrines without slabs or open pits, bucket latrines, hanging latrines, or open defecation are not considered improved sanitation.(WHO, 2021) There were 228 responses for this variable, which expresses the type of sanitation facilities available at the school. Pit latrine with slab accounts for 40.35 % of toilets, pit latrine without slab accounting for 32.89%. The remaining responses are hanging latrine and flushing toilets, which received 16.67% and 10.09% of total responses, respectively.

Table 22: Types of toilet facilities

Types of toilets	Frequency	Percent of responses	Percent of cases
Flush/pour flush toilet	23	10.09%	10.65
Pit latrines with slab	92	40.35%	42.59
Hanging toilet	38	16.67%	17.59
Pit latrines without slab/ open pit	75	32.89%	34.72
Total	228	100%	105.56

Source: Survey data computed in STATA 14,2021

Appropriate WASH facilities are especially important for ensuring girls' safe and healthy participation in school. WASH facilities act as both a 'push' and a 'pull' factor in the education of girls. Girls may struggle to attend and stay in school if they do not have access to safe, single-sex, and sanitary restrooms, which are necessary for menstrual hygiene management (MHM) (Anja Nielsen and Alexander Carnwath, 2019). In this study only 23.08% of the respondents say that the toilets are accessible for girls during menstruation whereas more than $\frac{3}{4}$ of students prove that toilet facilities are not accessible for girls during menstruation.

Table 23: Girls' usage of toilet facilities during menstruation

Accessibility of toilet	Freq.	Percent
Yes	51	23.08%
No	170	76.92%
Total	221	100%

Source: Survey data computed in STATA 14, 2021

4.7 Availability and Accessibility of Hygiene Facilities

In 2019, roughly three out of every five children in the world had access to basic hygiene services at their school. Hand washing has a strong connection to health, especially in public or institutional settings. Despite the importance of soap-free hand washing, nearly 818 million children (43%) did not have access to basic hygiene services at school in 2019. Over 462 million children (25%) did not have access to hygiene services at school. Between 2015 and 2019, the global coverage of basic hygiene services in schools grew by 1% per year. A four-fold increase

in current rates of progress would be required to achieve universal access by 2030. Coverage of basic hygiene services was lower in rural schools (34% vs. 57% overall) and primary schools (56% vs. 57% in secondary schools) (58 percent) (UNICEF, 2020b). We received 44 responses for water availability at hand washing from the total respondents, indicating that water is always available throughout the school year. Some schools with a frequency of 44 have water available for hand washing most of the time. However, the student who responded that water is rarely available at school received the largest share, 50.68 percent. The remaining 9.5 percent have no water at all at the hand washing station.

Table 24: Water availability at hand washing

Water availability at hand washing	Freq.	Percent
Yes	44	19.91%
Most of the time	44	19.91%
Rarely	112	50.68%
Never	21	9.50%
Total	221	100.%

Source: Survey data computed in STATA 14,2021.

Globally, 2 in 5 schools lack basic hygiene services such as water and soap, affecting 818 million students, 462 million of whom attend schools with no facilities at all. In LDCs, 7 out of 10 schools do not have a place for children to wash their hands (UNICEF, 2021). In this study, 49.77 percent of respondents said they rarely see soap at hand washing sanitations. Soap is not available at the hand washing station, according to the second most popular response. Other responses include soap is always available throughout the school year, and soap is available most of the time, with 19.91 percent and 8.6 percent, respectively.

Table 25: Soap availability at the hand washing

Soap availability at the hand washing	Freq.	Percent
Yes	44	19.91%
Most of the time	19	8.60%
Rarely	110	49.77%
Never	48	21.72%
Total	221	100.00%

Source: Survey data computed in STATA 14,2021

Children with disabilities are less likely to benefit from WASH in Schools programs because only half of all disabled children attend school globally. Moreover, inaccessible WASH facilities

in schools create additional obstacles to attendance for children with disabilities. This is especially problematic for girls with disabilities, who must also manage menstrual hygiene in inaccessible facilities, which can jeopardize their dignity, health, and school attendance (UNICEF, 2016). As shown in Table 25 below, 120 respondents indicated that toilets in Addis Ababa's selected schools are inaccessible to people with disabilities and small children. The rest of the students demonstrate that schools have easily accessible hand washing facilities.

Table 26: Accessibility of hand washing facilities

Accessibility of hand washing facilities	Freq.	Percent
Yes	101	45.70%
No	120	54.30%
Total	221	100.00%

Source: Survey data computed in STATA 14, 2021.

Globally, communicable diseases are common among school-age children, and exposure to pathogens that cause preventable diseases is unavoidable in the school population. Poor personal hygiene and inadequate sanitation practices will lead to school absenteeism which affects performance of children because of the illness. The situation is worse in low- and middle-income countries (LMICs) due to inadequate health care facilities, leading to the compromised health status of school children.

Diarrhea and respiratory illnesses; communicable diseases associated with poor hygiene are considered the deadliest killers of young children. Incidence of diarrheal diseases within the initial years has been linked with impaired cognitive performance in later childhood. In developing countries, the intestinal helminthic infection may be a commonly cited problem among school-age children. Furthermore, oral health infections also are commonly found in school-going children worldwide. Infections that occur frequently predispose young children to malnutrition. This can result in a vicious circle, slowing children's physical and cognitive development (Pradhan et al., 2020).

Schoolchildren's hygiene literacy and practices have thus received significant attention to regulate the spread of infections among this group. The infections caused by poor knowledge and unhygienic habits of children lead to compromised academic performance. Knowledge, Attitude, and Practice (KAP) survey of grade school students in Ethiopia indicated that nearly half the

scholars had adequate knowledge of hygiene. However, the practice of hand washing with soap wasn't appreciable (36%)(Pradhan et al., 2020).

This study received 295 responses regarding hygiene activities in the school, with 29.5 percent of responses indicating that hygiene education is included in the curriculum. The other activity is to conduct extracurricular hand washing activities such as hand washing competitions, demonstrations, and training, which accounts for 17.3 percent of the responses. Some schools also have a group hand washing activity. Some schools, accounting for 8.14 percent, have educational materials available. 11.86 percent proved that reminders and posters promoting hygiene were hung at a critical point. Some schools (8.14 responses) mentioned that they received training and awareness-raising events from WASH actors. Another hygiene activity promotion carried out by some schools is raising awareness among selected students, which accounts for 7.46 percent of the total of 295 responses. The remaining respondents stated that there are no hygiene promotion activities at their school.

Table27: Hygiene activities at school

Hygiene Activities	Frequency	Percent of responses	Percent of cases
Hygiene education is included in the curriculum	87	29.49%	42.65
Extracurricular activities on the hand washing	51	17.29%	25.00
Group hand washing activities	19	6.44%	9.31
Education/informative materials made available	24	8.14%	11.76
Reminders and posters hanged at a critical point	35	11.86%	17.16
WASH actors provide training, organize events and awareness creation events at school	24	8.14%	11.76
Selected students provide awareness creations	22	7.46%	10.78
There is no hygiene promotion in our school	33	11.19%	16.18
Total	295	100%	144.61

Source: Survey data computed in STATA 14,2021

4.7.1 School Menstrual Hygiene Management

According to UNICEF estimates, approximately one in ten school-age African girls did not attend school during menstruation or dropped out at puberty due to a lack of cleanliness and separate toilet facilities for female students at schools. Many studies shows that the menstruation related issues affected more than a third of students' class concentration, participation, socialization with peers, test-taking skills, and homework task performance. Dysmenorrhea was found to be significantly associated with school absenteeism, as well as lower academic performance, sports participation, and peer socialization.

43 percent - 50.7 percent of students were absent from school for menstruation-related reasons, ranging from one day to four days. Approximately 90% of students reported that their school did not have a separate sanitary facility for females, and approximately 43% of informants were required to miss school during their menstruation days. In Ethiopia lack of separate toilet facilities was also linked to a high rate of female school dropouts in Oromia (65%) and Amhara (33%) regional states (Tegegne & Sisay, 2014). 11.31 percent of the girls who took part in the study said it is very common for them to miss class due to menstruation. For some students (16.29 percent of those polled), it occurs only rarely during the school year.

Table 28: Girls missing classes during menstruation

Girls Missing classes during menstruation	Freq.	Percent
it is a common phenomenon	25	11.31%
it happens rarely	36	16.29%
Other girls or I do not miss classes because of menstruation	38	17.19%
I do not know	122	55.20%
Total	221	100.00%

Source: Survey data computed in STATA 14,2021.

This study discovered that free menstrual hygiene products are available at some schools, accounting for 28.3 percent of the total 244 responses. Some of them have sanitary bins for the safe disposal of menstrual hygiene products, accounting for 19.67% of the respondents. Other respondents mentioned that menstrual health education materials are available at school. 47 of the responses stated that there is no menstrual health management in their school. The remaining 34 responses contain no information about it.

Table 29: Availability of menstrual health management at school

Availability of MHM at school	Frequency	Percent of responses	Percent of cases
I don't have information about this	34	13.93%	15.53
Private space for girls	21	8.61%	9.59
Free menstrual hygiene products available	69	28.28%	31.51
Sanitary bins used for the safe disposal of menstrual hygiene products	48	19.67%	21.92
Menstrual Health material education	25	10.25%	11.42
There is no availability of MHM	47	19.26%	21.46
Total	244	100%	111.42

Source: Survey data computed in STATA 14,2021

4.8 A Propensity Score Matching: Impact of WASH Interventions

4.8.1 Generating the Propensity Scores

Estimation of the treatment impact of WASH interventions on using a propensity score matching method involves a two-step procedure. In the first step, the propensity of being in the treatment group is predicted using a standard non-linear regression model. This is followed by a treatment impact regression on the student observations matched using propensity scores obtained from the first step.

The propensity scores for balancing the student observations in the treatment category with that of the control category are obtained as predicted probabilities of a student belonging to a treatment category. The standard procedure is to run a logit regression to obtain the coefficients of the observed variables on which the treatment and control groups are balanced. Using these coefficients, the propensity score is recovered as predicted probabilities of belonging to the to the treatment group. The logit regression results are presented in Table 30: below.

Table 30: First step logit regressions to generate the propensity scores

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	For Student Rank			For Student absenteeism		
	Wa	S	H	Wa	S	H
Sex1	-	0.737** (0.356)	-0.585 (0.476)	0.178 (0.305)	0.737** (0.356)	-0.585 (0.476)
Grade	0.384*** (0.0931)	0.0562 (0.101)	-0.303* (0.156)	0.382*** (0.0932)	0.0562 (0.101)	-0.303* (0.156)
Family Size		0.114 (0.101)	-0.0601 (0.153)	-0.00863 (0.0921)	0.114 (0.101)	-0.0601 (0.153)
Intervention	0.421 (0.296)	-0.0920 (0.334)	0.0540 (0.477)	0.404 (0.298)	-0.0920 (0.334)	0.0540 (0.477)
Constant	-3.505*** (0.703)	-2.699*** (0.956)	0.480 (1.372)	-3.547*** (0.892)	-2.699*** (0.956)	0.480 (1.372)
Observations	221	221	221	221	221	221

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source Survey data computed in STATA 14, 2021.

Table 30 above present's six logit regressions divided into two blocks for each of the student performance indicating outcome variables of the study, student rank in the previous semester (Rank) and student absenteeism in the previous semester (Absent). Under each of these two blocks three regressions for each of the three treatment variables, safe drinking water (Wa), proper sanitation (S), and hygiene (H) using the student's sex, grade, family size, and intervention are used as repressors. The coefficients reported can be interpreted as odds ratios. Sex of the student was a significant determinant of a student's access to sanitation facilities (S) (i.e., toilets) at 95% confidence level. Grade of the student, on the other hand, was a statistically significant determinant of availability of clean drinking water (Wa) to the student as 99% confidence.

4.9 The Impact of WASH Intervention on School Performance

Studies conducted in Mali examining the effects of school-based water, sanitation, and hygiene (WASH) interventions have found inconsistencies in students' health and educational outcomes. These could be due in part to poor project fidelity or adherence. The study measured the degree to which schools met four prespecified WASH targets, comprised of 15 criteria, as part of a matched-control trial of a comprehensive school-based WASH project in Mali, 0–3 years after

program implementation. The study compared the achievement of target and criteria between the beneficiary and matched control schools and achievement within beneficiary schools at baseline and follow-up visits. The study looked at the "as-treated" relationships between WASH target achievement and student diarrhea, respiratory symptoms, and absence. Schools met each target with between 44 and 81 percent of beneficiaries. Although adherence varied by school, beneficiary schools met more WASH targets on average than matched control schools, and beneficiary schools also met more WASH targets at follow-up than at baseline. Individually, very few of the targets were linked to health and absenteeism outcomes. Increasing achievement of multiple WASH targets concurrently was associated with a lower likelihood of students experiencing diarrhea and respiratory symptoms, but not with rollcall or pupil-reported absence. These results indicate that a comprehensive WASH intervention and a focus on increasing adherence may help maximize the health effects of school WASH programs, but that WASH alone might not be sufficient to decrease pupils' absenteeism (Garn et al., 2017).

In this study, the availability of safe water has no statistically discernible impact on student rank. Similarly, to the availability of safe drinking water, school-based hygiene interventions have not statistically defined impact on student performance, particularly rank. Whereas 51 of the 221 respondents have access to proper sanitation, students who have access to accessible sanitation facilities can lower their ranking by 2.7 points. This means that the intervention can improve the student rank from 10th to around 7th. Proper sanitation is defined in this study as a school that has a sanitation facility such as a flush/pour-flush toilet, pit latrines with slab, hanging latrines/toilet, and pit latrines without slab/open pit with accessibility.

Table 31: Average treatment impact of Rank

Rank	Coef.	AI Robust Std. Err.	z	P>z	[95% Conf. Interval]	Treated obs	Control obs
ATE Wa (Yes, vs No)	-.1610451	1.077027	-0.15	0.881	-2.271979 1.949888	85	85
ATE S (Yes, vs No)	-2.708974	1.283526	-2.11	0.035	-5.224639 -.1933092	51	51
ATE H (Yes, vs No)	-3.824661	2.213913	-1.73	0.084	-8.16385 .5145285	21	21

Source: Survey data computed in STATA 14,2021

In this study, 85 of the 221 respondents have water sources with water availability at their school compound. Having water sources and safe drinking water available at school has a significant impact on reducing student absenteeism by -0.3 with p value of 0.024 (2.4%). This means that students who do not have access to safe drinking water at school will be absent for three school days more than students who do have access to safe drinking water. In addition, this study discovered that having access to proper sanitation and hygiene facilities at school has no statistically discernible impact on student absenteeism.

Table 32: Average treatment impact of absent rate

Absent	Coef.	AI Robust Std. Err.	Z	P>z	[95% Conf.	Interval]	Treated obs	Control obs
ATE Wa (Yes, vs No)	-.3076923	.1366469	-2.25	0.024	-.5755154	-.0398692	85	85
ATE S (Yes, vs No)	.5248869	.4165414	1.26	0.208	-.2915192	1.341293	51	51
ATE H (Yes, vs No)	-.1176471	.2045078	-0.58	0.565	-.518475	.2831809	21	21

Source: Survey data computed in STATA 14,2021

Even though the statistical analysis finds out that only two variables have the impact on school performance indicators which are rank and absent rate the respondents say that the intervention has a significant impact on teaching and learning process; for example, female students require access to water at school. On average, female students experience menstruation beginning in sixth grade, or at the age of fourteen. So that they can use the toilet, there must be a separate room for changing menstrual pads, and we must provide training to boost their confidence. In this case, they will not be absent from school due to menstruation, and they will be able to be comfortable and concentrate in school. As a result, WASH projects have a significant impact on female student absenteeism.

Unlike the responses given above, some believe that the intervention has an indirect impact on school performance, particularly absenteeism and rank. According to the school principals, the school feeding program is playing a significant role in increasing student attendance. However,

the wash program indirectly benefits students by allowing them to access safe drinking water after lunch or at any time during the school day. However, the school feeding program has had a visible impact on reducing student dropout and absenteeism since it was implemented by the government.

The actors in the hygiene program do not provide hygiene education materials. Although hygiene education is not fully integrated into the lesson plan, some organizations provide hygiene behavior change training to teachers, which are then passed on to students. Following the implementation of the WASH project, student hygiene behavior has changed in some schools. Previously, students took soap from hand washing stations, but after participating in various awareness-raising programs, students developed a sense of ownership.

Schools without WASH interventions face several challenges, the most common of which is the availability of safe drinking water. WASH activities have an impact on student health to some extent, but the school feeding program has a greater impact on student attendance. However, if the school provides both clean water and a feeding program, it will have a positive impact on both student attendance and performance. Students must bring water from home because schools do not have access to drinking water. In this case, some families cannot afford to buy bottled water for their child, so he or she may miss class or refuse to drink water after eating or when thirsty.

The other challenge is students' poor hygiene habits; it is difficult to teach about hygiene when there is no access to water or soap at school. Even though the soap is labeled for hand washing, when water is available, they do not use it; rather, they steal it. Schools' administration took their own measures to address the lack of water by installing water tanks, but this was insufficient because municipal water only flows one or two days per week, leaving insufficient to serve for the entire week.

Toilets fall short of the standards in terms of sanitation. Students do not have access to hand washing stations after using the restroom. For physically disabled students, the toilets are inconvenient. They are also unappealing to girls; at some schools, females have separate toilets, but they are almost always located near male toilets. As a result, changing menstrual pads inside the toilet during menstruation is extremely difficult. The toilets are not private. Most school

restrooms are inadequate for the number of students. Furthermore, accessing water at the toilet stall is difficult, preventing female students from maintaining their hygiene during menstruation.

4.10 Diagnostic Tests

For identifying the ATE and ATT, the strong and weak assumptions are required to be met. This means that the treatment and control groups must be balanced on all observed covariates, and that the two groups have a reasonable area of overlap in the propensity score between the treatment and control group observations. Two sets of tests are run to make sure that the PSM analysis in this paper meets these two assumptions: (1) comparison of mean and standard deviations before and after balancing, and (2) propensity score plot before and after balancing is achieved to indicate overlap.

Table 33: Comparison of mean and standard deviations before and after matching

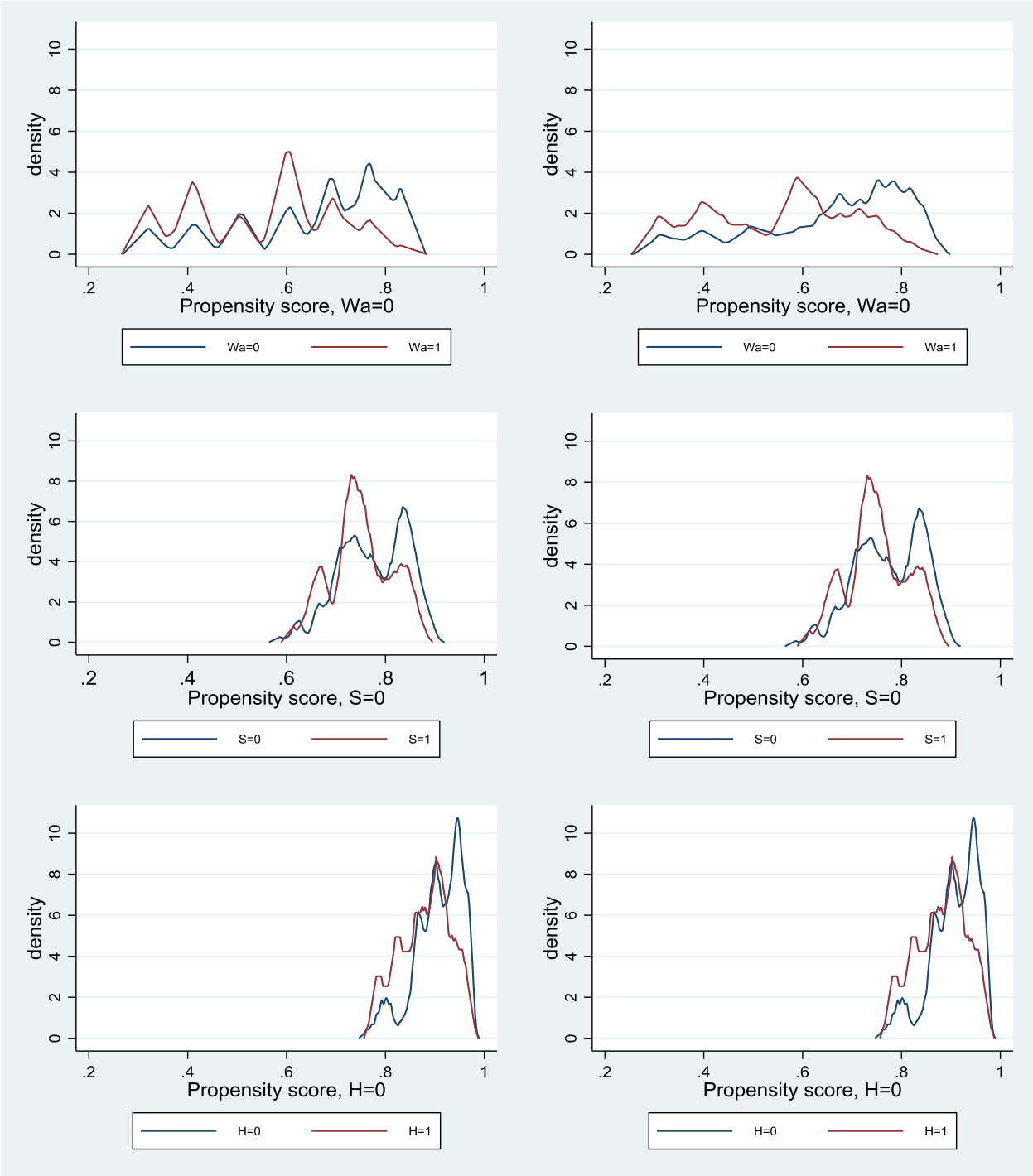
Outcome	Treatment	Balancing variables	Standardized differences		Variance ratio		Sample	
			Raw	Matched	Raw	Matched	Raw	Matched
Rank	Safe drinking water (Wa)	grade	0.6791	0.0000	0.7370	1.0000	–	–
		Intervention	0.3234	0.0000	1.0251	1.0000	–	–
		Number of obs.	–	–	–	–	221	221
		Treated obs.	–	–	–	–	85	85
		Control obs.	–	–	–	–	136	85
		Proper sanitation (S)	sex1	0.3267	-0.0092	0.8242	1.0039	–
	grade		0.1133	0.0503	0.8158	0.9070	–	–
	fsize		0.1405	0.0705	1.0625	1.0078	–	–
	Intervention		0.0117	0.1813	1.0156	0.9983	–	–
	Number of obs.		–	–	–	–	221	221
	Treated obs.		–	–	–	–	51	51
	Proper hygiene (H)	sex1	-0.2880	-0.0092	1.1061	1.0038	–	–
		grade	-0.5037	-0.0294	0.7092	0.7380	–	–
		fsize	-0.0613	0.0058	0.9232	0.9369	–	–
		Intervention	-0.0822	0.0271	1.0271	1.0035	–	–
		Number of obs.	–	–	–	–	221	221
		Treated obs.	–	–	–	–	21	21
	Absent	Safe drinking water (Wa)	sex1	0.1356	0.1031	0.9422	0.9453	–
grade			0.6791	0.0194	0.7370	0.8469	–	–
fsize			-0.0112	0.0869	0.8358	0.9250	–	–
Intervention			0.3234	-0.0636	1.0251	0.9862	–	–
Number of obs.			–	–	–	–	221	221
Control obs.			–	–	–	–	200	21

	Treated obs.	-	-	-	-	85	85
	Control obs.	-	-	-	-	136	85
Proper sanitation (S)	sex1	0.3267	-0.0092	0.8242	1.0039	-	-
	grade	0.1133	0.0503	0.8158	0.9070	-	-
	fsize	0.1405	0.0705	1.0625	1.0078	-	-
	Intervention	0.0117	0.1813	1.0156	0.9983	-	-
	Number of obs.	-	-	-	-	221	221
	Treated obs.	-	-	-	-	51	51
	Control obs.	-	-	-	-	170	51
Proper hygiene (H)	sex1	-0.2880	-0.0092	1.1061	1.0038	-	-
	grade	-0.5037	-0.0294	0.7092	0.7380	-	-
	Fsize	-0.0613	0.0058	0.9232	0.9369	-	-
	Intervention	-0.0822	0.0271	1.0271	1.0035	-	-
	Number of obs.	-	-	-	-	221	221
	Treated obs.	-	-	-	-	21	21
	Control obs.	-	-	-	-	200	21

Source: Survey data computed in STATA 14, 2021

As can be observed from Table 33 above, there is an overall improvement in the balance of the observed covariates after matching student observations in the treatment group with student observations in the control group. In other words, the mean differences for each of the observed variables have moved closer to 0 and the ratio of the variances of the observed variables have moved closed to 1 after matching.

Figure 4:Overlap of treatment and control observations before and after matching



Source: Survey data visualized using STATA 14, 2021.

As can be visualized from above figure 4, there is a reasonable area of overlap between the propensity scores of student observations that fall in the treated and control groups. This visual presentation confirms that the area of overlap, also known as common support, between the propensity score of treated and control student observations has improved. Hence, the results of the ATE and ATT can be considered as causal impacts.

4.11 Actors, Context, and Institutional Arrangement of Intervention

According to the WHO/UNICEF Joint monitoring 2014 report, Ethiopia has made remarkable progress at the areas of water and sanitation for the last two decades. The country achieved MDG 7 target 7c by improving water supply by 57 percent which is 97% in urban areas and 42% in rural areas. Whereas the sanitation target has not yet been met, but remarkable progress has been made, in improving sanitation and eliminating open defecation over the last decade. The establishment of a government-led WASH coordination mechanism (ONE WASH program) involving the Ministries of Water, Health, Education, Finance, and Economic Development, as well as development partners, has contributed significantly to the progress (WHO, 2017a) It is a sector-wide approach to achieving WASH outcomes through officials, strategies, and development plans. It is a flagship government program supported by several development partners (DPs) and non-governmental organizations (NGOs), in which various actors agreed to address water, sanitation, and hygiene as an integrated package aimed at meeting GTP (Wilson et al., 2018).

Following the federal structure, water, health, and education institutions were established through proclamations (Negarit Gazeta, 2010) that defined the roles and responsibilities of each sector; these proclamations had undergone a series of revisions to accommodate changes. According to the proclamation, the Ministry of Health (MoH) has the authority to develop the country's health sector development program and oversee its implementation (this includes health services in institutions such as school sanitation and hygiene). Similarly, the Ministry of Water, Irrigation, and Electricity (MoWIE) has the authority to support the expansion of potable water supply coverage, to monitor and coordinate the implementation of water projects, and to establish quality standards for waters to be used for various purposes. The Ministry of Education has the authority to establish educational and training standards and to ensure their implementation. However, it does not specify the role of the Ministry of Education (MoE) in

providing WASH in schools. This means that the education sector lacks the legal foundation to lead WASH in schools (Ministry of Education, 2017).

Even if it is not backed up by a proclamation, the Ministry of Education has received leadership on the development of WASH in Schools in accordance with the Memorandum of Understanding signed in 2012 between key line ministries (MoWIE, MoH, MoE, MoFEC) and donor representatives. A similar Memorandum of Understanding was signed at the regional level, allowing the Bureau of Education to take the lead in the development of WASH in Schools in their respective regions. Even though this working model has been sufficiently cascaded down to regions and clarity on the roles and responsibilities of WASH in Schools (WinS) is gradually emerging, there are still some enigmatic issues at lower levels. (Ministry of Education, 2017)

The city administration of Addis Ababa has issued proclamations and strategies for the establishment and organization of water supply and sewerage development offices, as well as water service offices. The Addis Ababa Water and Sewerage Authority (AAWSA) is the city's water and sanitation authority who control the overall activities of water and sanitation projects in the city (UNICEF, 2019c).

In addition to AAWSA, several government and non-government organizations are carrying out WASH activities in Addis Ababa. WASH interventions are being carried out by the Addis Ababa City Administration's Health Bureau, Education Bureau, as well as international and local NGOs. Recently, because of COVID 19, various private organizations have begun to implement WASH activities, primarily focusing on hand hygiene hardware and software. Concerning the school WASH intervention, NGOs must collaborate and sign a memorandum of understanding (MOU) with AAWSA and AAEB. The AAEB is involved in project planning, implementation, and monitoring, and has collaborated closely with the NGOs to ensure their commitment and support. Furthermore, the AAEB oversees selecting schools and providing all necessary documents to NGOs, as well as ensuring that the service is properly managed by the school administration.

The Addis Ababa City Administration's Health Bureau is the other major player. It is responsible, in collaboration with other line sector bureaus, particularly the Education Bureau, for providing students with the necessary knowledge of health, hygiene, and nutrition for better academic performance and, later, increased working potential and productivity. Furthermore, the

bureau provides an input to the construction of sanitation facilities to maintain the standard as well as it helps school feeding program in schools.

In Addis Ababa most of NGOs are implementing integrated WASH activities in schools. They are most commonly active in all three WASH components: Water, Sanitation, and Hygiene. Only two organizations (Ratson and Voluntary Service) are not involved in all three. There are 17 organizations who are working on school WASH programs in Addis Ababa. In water, the largest number of organizations works in water supply infrastructure development and drinking water and/or hand washing station development. These organizations are 13 in number out of 17 organizations, followed by storage facilities which are 12 organizations. Only 3 out of 17 indicated drinking water filtration or treatment. For sanitation, partly due to the lower number of categories, the distribution is more even across adaptation, improvement, or 14 of them works on rehabilitation of existing facilities and 15 organizations works on construction of new facilities. In hygiene, the largest number works on hygiene education which are 16 out of 17 organizations, followed by menstrual hygiene management 12/17, and an equal number in hygiene training and provision of materials 10/17 (Mathijs et al., 2018).

Ideally, WASH is one of the pillars in overall schooling where sufficient WASH hardware components must be part of the school establishment along with the standards set by the Education Bureau. However, late alone old schools who served for several decades, newly constructed schools are being lacking sufficient toilets, hand washing stations, water supply and MHM components in line with the standards set with the number of students, teachers, and support staff.

In this study three of the five school principals interviewed for key informant interviews benefited from the WASH intervention in their school. They stated that the community should play a major role in using the infrastructure fixture properly as well cascading the hygiene education in the school During the intervention's implementation, school principals played a role in raising awareness of the intervention approach, providing input to WASH actors, monitoring the project's implementation, monitoring the rest of the staff and students to maintain personal hygiene (behavior change) and the cleanliness of the infrastructure, and assisting NGOs in facilitating general schoolwork.

As the respondents mentioned that several changes occur because of WASH interventions at school, such as students having access to safe water and washing their hands with water and soap before lunch and after toileting, as stated by respondents. Students are taught about personal hygiene and the consequences of poor hygiene habits, such as hygiene-related diseases, through this project. Prior to the intervention, students did not have access to water at any time during the school day. WASH actors install water tankers and water filter machines at the school. So that students have constant access to safe and sufficient water at school. Because we are in a pandemic period, the intervention assisted the school community in protecting their health from diseases such as COVID 19. In addition to the above-mentioned changes, the school community's sense of ownership has grown, which has aided in the sustainability of the project's infrastructure.

In schools, environmental officer of the respective school encompasses WASH interventions. He/she supervise guards and janitors. In addition, operation & Maintenance officer, if the school have such position in its HR structure. The operation & Maintenance officer will be responsible for day-to-day operation and maintenance of WASH hardware components. However, the hygiene component doesn't have a designated person rather it is expected to be addressed by health/hygiene clubs and focal persons as extracurricular activities. In schools, that do not have operation & Maintenance officer, the environmental officer will be the responsible for such activities.

4.11.1 Challenges and Actors' Perception

As mentioned by the respondents there are several challenges that the WASH actors are currently facing to perform their program in schools. There are several challenges of school WASH broadly categorized as Resource, management and commitment related. Some of them are:

Lack of financial and human resources, most schools fail to conduct regular operation and maintenance for WASH facilities. Once WASH interventions are handed over to schools, the school managements are expected to own the project and carryon with all the necessary requirements of sustaining the operation of the facilities provide regular maintenance, follow up of the behavior change activities and so forth. However, the limited budget for procurement of spare parts, lack of skilled technical experts, makes it difficult to sustain the school WASH interventions.

Water Supply: there is shortage of water in Addis. According to the AAWSA Addis Ababa's daily demand is 1.2 million cubic meters of water; AAWSA daily potential and delivery is 578,000 and 535,000 cubic meters where there is up to 35% wastage. Hence, schools are facing water shortage. NGOs like Splash provide water tank and water towers based on 5 liters/day/student for 3 days calculation. However, some schools have smaller water meters like that of a household level and expected to serve thousands of school's communities.

Poor Coordination at sub city and City level: coordination among implementers along with standardization of hardware and software components; lack of up-to-date list of actors with scope and intervention, existence of number of partner organizations (NGOs) that doesn't have any agreement with the bureau of sub city Education office but engaged in WASH activities at school level while other who have agreement but didn't implement any of their deliverables.

Poor Ownership at school management level: negligence on early detection of water system or Toilet facilities breakage, lack of proactive Operation & Maintenance, continuous WASH message dissemination by schools, poor attention by school management to WASH facilities as compared to academic interventions; School managements are expected to provide technical and managerial support to staffs and children to make proper use of the facilities, keep the infrastructures clean, usable, and free from vandalism and misuse, keep the functionality of the systems as well as the hygiene clubs. However, in some schools, due to lack of proper and committed management system, the infrastructures and the behavior change interventions fail from operation in a very short term.

Challenges at System level: poor WASH indicators in supportive supervision checklists of school supervisors (they look only number of taps rather than full functionality, other WASH indicators; lack of allocated budget for WASH facilities (Operation & Maintenance budget is in a lump sum with different school expenses which limit timely maintenance.

In addition to the above-mentioned challenges by respondents, poor monitoring and evaluation regulation and standards on WASH performance. This relates to the tension between design standards and the specific demands of each school location. It also related to the strict standards that function as bottlenecks to actual implementation, as discussed in the infrastructure design and standardization section.

4.12 Analysis of Ethiopian WASH Policy

There is no specific WASH policy in Ethiopia. However, there are different WASH programs, strategies and guidelines which includes: the National hygiene and Environmental Health strategy, Community led total sanitation and hygiene (CLTSH) guideline, National health Promotion and communication strategy, Health extension program package and One WASH National Program (a program that only excluded Addis Ababa). Similarly, school WASH focused frameworks include school WASH guideline, and school WASH design and construction manual. Each of them provides guidance on WASH interventions based on their scope, focus and timeframe. It is difficult to single out one as an effective above the others. Currently, the FMOH is processing multi sectorial Hand Hygiene for ALL (HH4A) Road Map for the coming 10 years. It aims to boost attention to hand hygiene in the country.

a. Analysis of The National hygiene and Environmental Health strategy

The Federal Ministry of Health of Ethiopia (FMOH) is responsible for hygiene and environmental health development in Ethiopia. The Ethiopian government, with the assistance of development partners, has made a commitment to improving the country's record in hygiene and environmental health, particularly access to sanitation and hygiene practices. This dedication is exemplified by the training of sanitarians/environmental health professionals, also because of the adaptation and commitment to international programs, with attention on achieving the relevant Millennium Development Goal targets (2000-2015) and therefore the Health Extension Program. To advance rural health development, the ministry has included woreda transformation as part of the HSTP agenda. It is hoped that this transformation will result in more equitable delivery of services to the people. The Hygiene and Environmental Health strategy is intended to support the HSTP plan for five years (2016-2020), considering the promising achievements as well as the drawbacks and gaps of the past, and with a pragmatic and innovative plan for 100 percent achievements in Hygiene and Environmental Health in the future. (Hygiene, 2016)

b. Analysis of Community Led Total Sanitation and Hygiene Guideline

Ethiopian development actors are employing a variety of participatory approaches to achieve long-term behavioral change in hygiene and sanitation. Community-Led Total Sanitation (CLTS), Community Dialogue, Whole System during an area, and family dialogue "mikikir" in Amharic are samples of those. Community-led approaches are thought to be effective because they encourage locally driven collective action and can use social pressure and social solidarity

to make long-term decisions about important issues. In terms of hygiene and sanitation, it's the members of a community who will best skills to affect a long-term commitment to not defecate within the open, how to design and build latrines using the community's own natural and financial resources, and how to ensure that hand washing, and safe water handling continue to be practiced.

Prior to certification, an independent, third-party group of relevant stakeholders must visit a given community, whether it is a village, kebele, woreda, or an entire region, to certify that the area in question is ODF and that people are practicing hand washing and safe water handling. The purpose of this verification and certification guideline is to harmonize approaches to in-field verification and to streamline the certification process for both government and nongovernment WASH actors.

WASH actors have been using the community-led total sanitation approach advanced in the original CLTS Handbook since 2007. However, because different actors interpreted it differently, its use resulted in inconsistent approaches to promoting hygiene and sanitation interventions, including different verification, certification, and award mechanisms. As a result, the rationale for developing this CLTSH Verification and Certification protocol is to lay a standardized approach that aids in measuring and correcting achievements in improved sanitation and hygiene practices (FMoH Ethiopia, 2011).

c. Analysis of National health Promotion and communication strategy

Despite achievements in the health system, low utilization of health services is observed because of barriers such as cultural and traditional factors combined with an unfriendly environment and poor communication between providers and clients, which has negatively impacted the adoption of health-seeking behaviors and health service uptake.

This revision of the National Health Promotion and Communication Strategy (NHPCS), 2005-2014, is thus required to accommodate recent changes like 2nd generation HEP, an increasing triple burden from communicable and non-communicable diseases, and injuries/accidents that necessitate behavioral interventions. As a result, the main target has shifted from individual behavior change to addressing socioeconomic and cultural factors that discourage behavior change at the community and household levels (Federal Ministry of Health, 2015).

d. Analysis Health extension program package

The Health Extension Program is one of the strategies implemented by the Ethiopian government (GOE) to achieve universal coverage of primary health care among its rural population by 2009, despite limited resources. HEP's overarching goal is to create a healthy society and to reduce maternal and child morbidity and mortality rates. GOE's flagship program is the HEP. The Federal Ministry of Health launched it in 2003 in the four major agrarian regions, then expanded to pastoral communities in 2006 and urban areas in 2009.

This is a community-based program that provides primary-level preventive activities to household members. The program empowers families to take charge of their own health. In addition to community activities, HEP offers health post-based basic services, such as immunizations and injectable contraception, as well as limited basic curative services such as first aid and treatment of malaria, intestinal parasites, and other ailments. When more complex care is required, cases are referred to health centers (HCs) (Wang et al., 2016).

HEP services include 16 essential health packages organized into four major program areas: one is hygiene and environmental sanitation: (1) a proper and safe excreta disposal system; (2) a proper and safe solid and liquid waste management system; (3) water supply safety measures; (4) food hygiene and safety measures; (5) a healthy home environment; (6) arthropod and rodent control; and (7) personal hygiene.

The challenges of implementing WASH strategies and guidelines are complex and multifaceted. WASH is related to the community's economic status, housing, and living standard; water availability; taxation, local production, and detergent costs; community health communications and mindset; enforcement mechanisms; campaign-based interventions that are harmonized, mainstreamed, and regular activities; and so on. The implementation challenges in schools are similar because they reflect the larger community.

Although Ethiopia came up with robust national programs such as the ONE WASH national program to implement the WASH intervention, such initiatives were not able to ensure investments for the long-term sustainability as much as they invested in capital expenditures for the WASH infrastructures. This implies most constructed facilities were not integrated in a community owned sustainability framework where their operation and maintenance expenditures would have been accounted for. Furthermore, less rigorous interventions on behavior change

were conducted as part of these programs which would ultimately have no significance in reducing the disease burdens of Water borne illnesses. So that, WASH actors used their own approach to tackle challenges regarding the WASH strategies and guidelines. According to splash's WASH promotion manager

“We are promoting sustainability and local ownership of the WASH interventions at our target groups, advocating for allocation of operation and maintenance budget by the government, trying to include the WASH indicators in the evaluation framework of the government to bring about more responsible management of WASH interventions, shifting towards a child friendly attractive WASH facilities that could be adopted and replicated across other sectors.”

The Other actors use to the approaches such as Strengthen the role of the technical committee in various project activities, enroll school management along with representatives of Parent, Teachers Student Association, facilitate establishment of partners forum on School WASH at Addis Ababa level to enhance standardization, coordination; facilitate inclusion of WASH indicators on school supervisors' checklist during school and school principals' supportive supervision; value for money, continuous and tailored Behavior messaging at schools; Working with AAWSA to prioritize and resolve water supply challenges.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1 Conclusion

The researcher attempted to determine the impact of each WASH intervention package on student school performance in this study. As we considered rank and absent rate as school performance indicators, this study focuses on various aspects of the WASH intervention's impacts on students, as well as girls and students with limited mobility (disabilities) in particular. The descriptive statically analysis discovered that having WASH infrastructure available and accessible to disabled children, small children, and girls entering puberty has a significant impact on school performance.

The average treatment impact of having safe water at school has not statistically significant impact on students' rank, according to this study. The dependent variable in this study was when the school always had a drinking water source with water available. Furthermore, providing hygiene intervention in the classroom has no statistically significant impact on students' rankings. The hygiene intervention was measured by the availability of water and soap at the hand washing station, as well as students' hygiene behavior, which included washing hands after toileting and before lunch. Proper sanitation at school, on the other hand, has a significant impact on student performance such as rank. The average treatment impact of proper sanitation is analyzed in this study by assuming that the school has toilet facilities that are always accessible.

The absent rate, which students missed school days due to WASH-related disease, is the second student performance indicator for this study. In terms of the average treatment impact of student absenteeism, statistical analysis reveals that the availability of safe drinking water at school contributes to improved student school performance by lowering student absenteeism. In contrast, access to proper sanitation and hygiene facilities at school has no statistically discernible impact on student absenteeism. Some qualitative responses from school principals back up the statistical analysis. Some respondents believe that having WASH interventions at school has a significant impact on students' school performance; however, school feeding programs receive the lion's share of the credit for improving school performance by drastically reducing students' absenteeism. So, while we can conclude that all WASH interventions have

not a significant impact on students' school performance, this does not imply that it has a negative impact on students' school performance; rather, school principals say that it has an indirect impact if WASH interventions are combined with school feeding programs. Aside from the impact of WASH on student performance in school, the researchers attempted to qualitatively analyze what makes implementing the intervention difficult in Addis Ababa. WASH actors discussed the various challenges they are currently facing in implementing the school WASH program in Addis Ababa. These difficulties cause the actors to perform inefficiently, and they also make it difficult for them to make a difference.

5.2 Policy Recommendation

Based on the findings, this study has suggested several recommendations. Specifically, the study pointed out recommendations that are directed towards three major stakeholders: schools, the government, and WASH actors (NGOs).

For schools

- The school administration should include hygiene education in their curriculum and monitor teachers to ensure that the education is being delivered properly to the students.
- Ensure that water is available in schools; work to change students' perceptions of soap; and try to make detergents available and accessible.

For government

- It is very important to have a policy that consists of School WASH in education and training policy of MoE to bring accountability mechanisms into picture; the current working modality might not be sustainable and binding.
- WASH in schools should have specific system for monitoring and evaluation designed by the government; and should have clear and agreed indicators at all levels. It should be reported on regular basis by all WASH actors at all levels.
- The government should include WASH-related interventions in the annual BSC evaluation.
- Hygiene education should be included in the national curriculum which designed and monitored by the ministry of education.

- Other options, such as ground water extraction, should be considered by the government to address the issue of water availability in a sustainable manner.
- To address all challenges, the government should collaborate closely with non-governmental organizations.

For WASH Actors

- WASH actors should only act in response to gaps; research should be conducted prior to implementing the project in schools.
- Regular monitoring and evaluation of WASH-related interventions should be carried out to identify and highlight important considerations for long-term sustainability.
- Schools should have adequate water access as well as child-friendly WASH facilities.
- Improving mechanisms, strategies, and approaches for water supply and conservation.
-
- Increase access to information and MHM education, improve sanitation facilities, increase access to menstrual hygiene materials, and use more effective menstrual waste disposal.
- Improve MHM education, incorporate MHM components into toilet design, and make schools more welcoming to girls.

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Appendix

Addis Ababa University
College of Development Studies
Center for Regional and Local Development Studies
Parental Consent Form

Dear Parent or Guardian:

My name is Tsege Afrassa, and I am a Regional and Local Development Studies at Addis Ababa University, and I am asking you to participate in a research project. I am asking your permission for your child to complete a survey being administered to students in school. The survey will ask questions about Water, sanitation, and hygiene interventions in school. It is our hope that data from this survey will contribute to a better understanding the effect of water, sanitation, and hygiene on student's school performance.

Your child's responses to the survey will be confidential or anonymous. (If responses are confidential explain that although the researcher may know who your child is, no identifiable information will be kept and only the researcher will know you are. If responses are anonymous, explain that no identifiable information will be collected and that no one, including the researcher will know your child because the information will be coded). However, the data may be used in publication/presentations.

Your consent and your child's participation are completely voluntary, and your child may withdraw at any time. There is no reward for participating or consequence for not participating. Any risks associated with participating. Any risks associated with participation in the study are no greater than those of daily living. We will also seek your child's assent to participate before he or she begins the study.

There are two copies of this letter. After signing them, keep one cope for your records and return the other one to your child's school.

“By signing below, I agree to allow my child to participate.”

Signature: _____

Name: _____

Date: _____

Appendix 1

Addis Ababa University
College of Development Studies
Center for Regional and Local Development Studies

Dear student

My name is Tsege Afrassa, I am a graduate student at Addis Ababa University studying Regional and Local Development studies. The purpose of this study is to examine, the effect of WASH intervention on student's school performance in Addis Ababa governmental schools. Your participation in the survey will be greatly appreciated. The questionnaire takes about 15-20 minutes to complete. Your participation is voluntary. You can choose not to answer any specific question or section. Please note that the information you provide will be used only for research purposes. The information will not be used in a manner that allows identification of you, your school, or your responses. People working in the sector will learn about the condition of water, sanitation, and hygiene conditions in schools across Addis Ababa, but not what you said personally.

I. Section Demographic Information

Please write or circle the most appropriate information

1. Sex
 Male Female
2. Age _____
3. Educational Level _____
4. Family Size _____
5. What is your rank for the last semester? _____

II. Section Water Related Questions

Please read them carefully and check the corresponding boxes for your answer(s)

6. Does the school have any of the following drinking water sources?
 - Piped water supply into the school building
 - Piped water supply into schoolyard/plot
 - Filtered piped water supply into the school building
 - Filtered Piped water supply into schoolyard/plot

- Public tap/standpipe out of schoolyard/plot
- Protected well/spring
- Rainwater
- Unprotected well/spring
- Tanker-truck or cart
- Surface water (lake, river stream)
- No water source available (Go to question 9)

7. Do you find water when you want to drink any time in school time?

- Yes No

8. If your answer is 'No' for the above question, is it because of the functionality of water points?

- Yes No

9. If your answer is no water source available at school, how do you manage it when you stay at school at least for 8 hours?

- I bring water from home.
- I don't do any thing

10. If you don't take any action for this, what do you feel during at school?

- I lose momentum as they deal with stomach pains and diarrhea.
- Hunger and headache
- I lose concentration at the class.
- I feel high level of dehydration.
- If other, please specify_____

11. How many days the above symptom and feeling happened to in this academic year?

- 1up to 3 days a week more than a week

12. Does getting clean water at school helps your learning process at school?

- Yes No

13. If your answer is yes to the above question, how it helps you in your learning process?

- Feel Hydrated
- Access clean water at any time

- Concentrate on each lesson
- Avoid thirstily
- Avoid dizziness
- Other (please specify) _____

14. What do you feel about getting clean water in your school?

- My school performance increase since my concentration in all subjects increase.
- The drinking water stations/ points are clean and attractive to use.
- I am feeling energetic because I am accessing clean water at school.
- I am feeling healthy because I am accessing clean water at school.
- I don't have those feelings because there is no clean water at all, or the water doesn't available all the time
- Other (please specify) _____

15. Is at least one drinking water point accessible for students with limited mobility and the smallest children at school?

- Yes
- No (Skip to question 17)
- I do not know

16. If your answer is 'Yes' for the above question, how the accessibility of drinking water point helps the disabilities and smallest children in their (your) school performance?

- Before the installation of the proper water point, it was common for physical disabilities and the smallest children to absent from class.
- Disabilities develop the feeling of being equal and advantageous.
- Limited mobility and the smallest children's water intake at school are becoming increase.
- I do not know

17. If drinking water points are not accessible for smallest children and disabilities, what barriers are present?

- No access (e.g., stairs, narrow door)
- Inadequate tap height

- No handrail
- Water points difficult to open/close
- Other (please specify) _____

18. Have you ever been infected by water, sanitation, and hygiene related diseases in this academic year?

- Yes No

19. If your answer is 'Yes' for the above question, which disease have you infected in this academic year?

- Typhoid Polio
- Cholera Hepatitis A
- Giardia Diarrhea
- Dysentery Escherichia Coli (E. coli)
- Exacerbates stunting

20. If you ever been infected how many days have you been absent from school?

- 1 up to 3 school days (please specify_____)
- 4 school days up to two weeks (please specify_____)
- two up to three weeks (please specify_____)
- I did not absent from class

21. What was the effect of absenteeism on your school performance?

- I missed exams during my absent
- I miss important lessons for all subjects.
- I could not cope up with the rest of the students after I came back.
- It took me time to cover the lessons I have missed.
- There was not any effect on my school performance.

22. What were the consequences in your result?

- Record low result for the last semester.
- Did not happen anything on my result.
- Other please specify. _____

23. Do you know any student/classmate who drops out of school because of water-borne illness?
Yes No

III. Section Sanitation Questions

Please read the carefully and check the corresponding boxes for your answer(s)

24. Does the school have a sanitation (toilet) facility?
 Yes No
25. If your answer is Yes for the above question, what kind of sanitation facility do you have in your school?
Flush/pour-flush toilet
Pit latrines with slab
Hanging latrines/toilet
Pit latrines without slab/ open pit
Other (specify)_____
26. Are you able to access the toilet any time you want at school time?
Yes No
27. Can girls use the toilet facility during the menstrual period?
 Yes No
28. If your answer is yes to the above question what facilities are provided at the toilet? (Only for girls)
 There is a water tap inside the toilet.
 The toilet is comfortable to change pads.
 There is a place to put menstrual materials.
 There is a separate room to change menstrual pads.
 All are available inside the toilet.
29. If the sanitation in your school provides the above facilities, what contributes to your school performance? (Only for girls)
 I will not absent from school because I can change menstrual items at school.
 I will not absent from school because I have access to water inside the toilet.

The schools provide menstrual pads that help me to the unexpected happening of menstruation.

I have learned that period is not a nightmare. Boys also stop mocking girls.

Students' attitudes towards menstruation changed so that girls don't afraid to come to school during the menstruation period.

30. If the sanitation in your school does not provides the required facilities, what is the effects on your school performance? (Only for girls)

I always absent from school because I cannot change menstrual items at school.

I always absent from school because I do not have access to water inside the toilet.

The schools do not provide menstrual pads, that is very shocking when unexpected menstruation happens in school.

Period is a nightmare for me, Boys also mocking on girls.

Students' attitudes towards menstruation does not change so that girls afraid to come to school during the menstruation period.

If other, please specify _____

There is no effect on school performance

31. What do you know about menstrual health management in your schools? (Boys only)

It reduces the spread of intestinal worms, schistosomiasis, and trachoma.

It reduces the severity and impact of malnutrition.

It promotes dignity and boosting safety, particularly among girls promoting school attendance.

It provides separate sanitary facilities for girls boosts school attendance.

If other, please specify.

I do not know anything about this.

32. Are there any posters promoting healthy and/or hygienic use of the toilet/latrine?

Yes No

33. What do you do to keep the hygienic use of the toilet in your school?

I sit properly in the toilet

After using it, I flush it down the toilet

- After using it, I don't flush it down the toilet
- I put the toilet paper I used in the basket
- I put the toilet paper I used to the toilet
- I put the menstrual pad I used on the toilet
- I put the menstrual pad I used in the basket

34. If you have ever been infected by the above sanitation-related diseases, what happened to your school performance?

- I have been absent more than a week from school when I was sick.
 - I have missed some exams during my absence.
 - I miss important lessons for all subjects.
 - I could not cope up with the rest of the students after I came back.
 - It took me time to cover the lessons I have missed.

35. Do you know any student/classmate who drops out of school because of sanitation-related disease or problem?

- Yes No

IV. Section Hygiene Questions

Please read the carefully and check the corresponding boxes for your answer(s)

36. Is water usually available for hand washing?

- Yes, always (or always throughout the school year)
- Most of the time
- Rarely
- No, never

37. Is soap usually available for hand washing?

- Yes, always (or always throughout the school year)
- Most of the time
- Rarely
- No, never

38. How often do you wash your hands?

- Before eating my lunch
- After toilet
- After playing games with my friends
- I frequently wash my hands because of Corona Virus.
- I do not wash my hands at school.

39. What do you use to wash your hands?

- Water only
- Water and soap

40. Is hand washing facilities accessible to all pupils in the school Such as the smallest children and students with limited mobility?

- Yes, hand washing facilities are accessible to all pupils.
- No

41. If hand washing facilities are not accessible to all students, what are the reasons?

- Hand washing facilities are not accessible to the smallest children at school since the facilities are over height.
- Hand washing facilities are not accessible to students with limited mobility because the facilities are not comfortable for them.
- Hand washing facilities are not functional.
- Hand washing facilities are not allowed to use for students.
- If other, please specify_____

42. What activities are undertaken for hygiene promotion in your school?

- Hygiene education is included in the curriculum.
- Extracurricular activities on the hand washing
- Group hand washing activities
- Education/informative materials made available/ provided by the school/WASH actor.
- Reminders and posters hanged at a critical point

WASH actors provide training, organize events and awareness creation events at school.

Selected students (hygiene ambassadors) provide awareness creations.

There is hygiene promotion in our school.

If others (specify) _____

43. Have you ever done any hygiene promotion (awareness creation) at your home?

Yes No

44. If your answer is Yes for the above question, what hygiene education did you provide to your family?

About hand washing steps

About critical time for hand washing

About menstrual health management

On how to keep the cleanliness of toilets

All of them.

45. Have you ever faced any misconceptions or taboos around menstruation?

Yes No

46. What provisions for girls' MHM are available at the school?

Private space for girls to manage menstrual hygiene.

Free menstrual hygiene products (e.g pads)

Sanitary bins for the safe disposal of used menstrual hygiene products.

Menstrual Health material education

I don't have information about this

Other (please specify) _____

47. Are MHM-related education materials accessible to girls at the school?

Yes No I don't know

48. When can girls access menstrual hygiene products at the school?

Any time, inside the toilet/ other facilities

Any time, upon request

- In exceptional cases only
- No menstrual hygiene material available
- I don't know

49. Are you aware of girls missing classes because of menstruation or did you miss any class because of menstruation?

- Yes, it is a common phenomenon.
- Yes, but it happens rarely.
- Other girls or I do not miss classes because of menstruation.
- I do not know.

50. In your opinion, what could do the WASH actors do to make it easier for girls to attend school during menstruation?

- Provide access to information and MHM education.
- Improve sanitation facilities (privacy, accessibility, cleanliness)
- Improve access to menstrual hygiene materials.
- Provide social support for schoolgirls (overcoming MHM associated stigma and marginalization)
- More effective disposal of menstrual waste
- Other (please specify)

Appendix 2

አዲስ አበባ ዩኒቨርሲቲ

የልማት ጥናቶች ኮሌጅ

የክልል እና የአካባቢ ልማት ጥናቶች ማዕከል

ውድ ተማሪ ስሜ ጽጌ አፍራሳ ይባላል፤ በአዲስ አበባ ዩኒቨርሲቲ የክልል እና የአካባቢ ልማት ጥናት የድህረ ምረቃ ተማሪ ነኝ ፡
 ፡ የዚህ ጥናት ዓላማ የውሃ፣ የመጻፍት ቤት እና የንጽህና ፕሮጀክት በአዲስ አበባ መንግስታዊ ትምህርት ቤቶች ውስጥ በተማሪዎች የትምህርት ቤት ብቃት ላይ ያለውን አስተዋጽኦ ለማጥናት ነው ፡፡ በዳሰሳ ጥናቱ ውስጥ ያለዎት ተሳትፎ በጣም ይበረታታል። መጠይቁን ለማጠናቀቅ ከ15-20 ደቂቃዎች ያህል ይወስዳል። የአንቺ/ት ተሳትፎ በፈቃደኝነት ላይ ብቻ የተመሰረተ ነው። ማንኛውንም ጥያቄ ወይም የጥያቄ ክፍል ላለመመለስ ከፈለግሽ/ክ ጥያቄውን አለመመለስ ይቻላል ፡፡ በዚህ መጠይቅ ላይ የተሞላው መረጃ ለጥናቱ ዓላማ ብቻ የሚውል ነው። መረጃው የአንተን/ቺን ወይም ምላሽህን/ሽን ለመለየት በሚያስችል መንገድ ጥቅም ላይ አይውልም። በዘርፉ የሚሰሩ ሰዎች/ድርጅቶች በአዲስ አበባ ትምህርት ቤቶች ውስጥ ስላለው የውሃ ፣ የመጻፍት ቤት እና የንጽህና ፕሮጀክት ያሉበትን ሁኔታን ለማወቅ እና ለማሻሻል ብቻ ነው።

I. ክፍል የስነሕዝብ መረጃ

እባክዎን በጣም ተገቢውን መረጃ ጻፍ/ፊ ወይም ምልክት ያድርግ/ጊ

1. ያታ

ወንድ ሴት

2. ዕድሜ _____

3. የትምህርት ደረጃ

1-4 ኛ ክፍል

ክፍል 5-8

ክፍል 9-10

4 የቤተሰብ ብዛት _____

5. ለመጨረሻው ሴሚስተር ደረጃዎ ስንት ነው? _____

II. ክፍል ከውኃ ጋር የተያያዙ ጥያቄዎች

እባክዎን በጥንቃቄ ያንብቡ እና ለእርስዎ መልስ (ች) ተጓዳኝ ሳጥኖቹን ምልክት ያድርጉባቸው

6. ከሚከተሉት የመጠጥ ውሃ ምንጮች በዚህ ትምህርት ቤት ውስጥ የሚገኘው የትኛው ነው?

በትምህርት ቤቱ ህንፃ ውስጥ የሚገኝ የቧንቧ አቅርቦት

በትምህርት ቤት ቅጥር ግቢ የሚገኝ የውሃ አቅርቦት

በትምህርት ቤቱ ህንፃ ውስጥ የሚገኝ የተጣራ የውሃ አቅርቦት

በትምህርት ቤት ቅጥር ግቢ ውስጥ የሚገኝ የተጣራ የቧንቧ ውሃ አቅርቦት

- ከትምህርት ቤት ቅጥር ግቢ ውጭ የሚገኝ የሕዝብ የመጠጥ ውሃ
 - በደንብ የተጠበቀ የምንጭ ውሃ
 - የዝናብ ውሃ
 - በደንብ ያልተጠበቀ የምንጭ ውሃ
 - የታንከር-መኪና ወይም ጋሪ ውሃ
 - የሐይቅ ፣ የወንዝ ወይም የጅረት ውሃ
 - ምንም አይነት የውሃ ምንጭ የለም (ወደ ጥያቄ 9 ይሂዱ)
7. በትምህርት ቤት ውስጥ በማንኛውም ጊዜ ውሃ መጠጣት ሲፈልጉ ውሃ ያገኛሉ?
- አዎ አይ
8. ከላይ ለተጠቀሰው ጥያቄ መልስዎ 'አይ' ከሆነ የውኃ ሀይቶች ስለማይሰሩ ነው?
- አዎ አይደለም
9. መልስዎ በትምህርት ቤት ውስጥ የውሃ ምንጭ የለም ከሆነ በትምህርት ቤት ቢያንስ ለ 8 ሰዓታት ሲትቆዩ ምን አይነት መፍትሄ ትጠቀሟል/ህ?
- ውሃ ከቤት አመጣለሁ ::
 - ምንም መፍትሄ ባለመጠቀሜ ምክያት የሆድ ህመምን እና ተቆማጥን እታመማለሁ ::
 - ረሃብ እና ራስ ምታት ይይዘኛል
 - በክፍል ውስጥ ትኩረትን አጣለሁ ::
 - በሰውነት ውስጥ ከፍተኛ የውሃ እጥረት እንዳለ ይሰማኛል ::
 - ሌላ ምክያት ካለ እባክዎን ይግለጹ _____
10. በዚህ የትምህርት ዓመት ውስጥ ከላይ የተጠቀሰው ምልክት እና ስሜት ስንት ቀናት ተከሰቷል?
- በሳምንት ከአንድ እስከ ሶስት ቀናት
 - ከአንድ ሳምንት በላይ
11. በትምህርት ቤት ውስጥ ንጹህ ውሃ ማግኘት በትምህርት ሂደትዎ ላይ አስተዋፆ ያድርጋል?
- አዎ አይ
12. ከላይ ለተጠቀሰው ጥያቄ መልስዎ አዎ ከሆነ በመማር ማስተማር ሂደት ላይ እንዴት እንደረዳዎት ግለጽ?
- የሰውነት የድርቀት ስሜት አይሰማኝም
 - በማንኛውም ጊዜ ንጹህ ውሃ ማግኘት እችላለሁ
 - በእያንዳንዱ ትምህርት ላይ ትኩረት አደርጋለሁ
 - የውሃ መጠማት ስሜት የለኝም
 - ማዘር ወይም የድንዛዜ ስሜት የለኝም
 - ሌላ ካለ (እባክዎን ይግለጹ) _____
13. በትምህርት ቤትዎ ውስጥ ንጹህ ውሃ ስለማግኘትዎ ምን ታስቢያለሽ/ህ?
- በሁሉም የትምህርት ዓይነቶች ላይ ካተኮርኩበት ጊዜ ጀምሮ የትምህርት ብቃቴ ጨምሯል ::
 - የመጠጥ ውሃ ጣቢያዎች / ሀይቶች ለአጠቃቀም ንፁህ እና ማራኪ ናቸው ::
 - በትምህርት ቤት ውስጥ ንጹህ ውሃ እያገኘሁ ስለሆነ ኃይል ይሰማኛል ::
 - በትምህርት ቤት ንጹህ ውሃ እያገኘሁ ስለሆነ ጤንነት ይሰማኛል ::
 - ሌላ ካለ (እባክዎን ይግለጹ) _____

14. በትምህርት ቤት ውስጥ የሚገኙ የመጠጥ ውሃ ሲንቢዎች የመንቀሳቀስ አቅማቸው ዝቅተኛ ለሆኑ ተማሪዎች እና ትናንሽ ልጆች ለመጠቀም አመቺ ነው?

- አዎ
- አይ (ወደ ጥያቄ 16 ዝለል)
- አላውቅም

15. ከላይ ለተጠቀሰው ጥያቄ መልስዎ 'አዎ' ከሆነ በትምህርት ቤት ውስጥ የመጠጥ ውሃ ተደራሽነት በአካል ጉዳተኞችን እና በትናንሽ ልጆች የትምህርት ብቃት ላይ ያለው አስተዋጽኦ ምንድን ነው?

- አመቺ የመጠጥ ውሃ አቅርቦት ከመጀመሩ በፊት ለአካል ጉዳተኞች እና ለትናንሽ ልጆች ከትምህርታቸው መቅረት የተለመደ ነበር ::
- አካል ጉዳተኞች የእኩልነት እና የተጠቃሚን ስሜት ያዳብራሉ ::
- ውስን የመንቀሳቀስ ችሎታ እና በትምህርት ቤት ውስጥ በጣም ትናንሽ ህፃናት የውሃ ፍጆታ እየጨመረ መጥቷል ::
- አላውቅም

16. የመጠጥ ውሃ ቦታዎች ለትናንሽ ሕፃናት እና ለአካል ጉዳተኞች በቀላሉ መጠቀም ያልቻሉበት ምክንያት ምንድን ነው?

- አመቺ አይደሉም (ለምሳሌ ፣ ደረጃዎች ፣ ጠባብ በር)
- ክቁመት በላይ የሆነ የሲንቢ ቁመት
- የእጅ መያያዣ የለም
- የውሃ ሲንቢዎቹ ለመክፈት እና ለመዝጋት አስቸጋሪ ናቸው
- ሌላ (እባክዎን ይግለጹ) _____

17. በዚህ የትምህርት ዘመን ከዚህ በታች በተዘረዘሩት የውኃ ወለድ በሽታዎች ተይዘው ያውቃሉ?

- ታይፎይ ኮሌራ
- ጃርዲያ የተቅማጥ ሕመም
- ኢኮላይ ታምሜ አላውቅም (ወደ ጥያቄ 21 ዝለል)

18. በበሽታው ከተያዝክ/ሽ በኋላ ስንት ቀናት ከትምህርት ቤት ቀረህ/ሽ?

- 1 እስከ 3 የትምህርት ቀናት
- 4 የትምህርት ቀናት እስከ ሁለት ሳምንት
- ሁለት እስከ ሶስት ሳምንታት
- ከክፍል አልቀረሁም

19. ከትምህርት ቤት መቅረት በአንቺ/ተ ላይ ምን ዓይነት ተጽዕኖ ነበረው?

- ፈተናዎች አምልጠውኛል
- ከሁሉም ትምህርቶች አስፈላጊ የትምህርት ክፍሎች አምልጠውኛል ::
- ከተመለስኩ በኋላ ከተቀሩትን ተማሪዎች ጋር እኩል መራመድ አልቻልኩም ::
- ያመለጡኝን ትምህርቶች ለመሸፈን ጊዜ ወስዶብኛል ::
- በትምህርት ብቃቴ ላይ ምንም ተጽእኖ የለውም ::
- ሌላ ካለ ይግለጹ _____

20. በአንተ/ቺ ውጤት ላይ ምን ዓይነት ተጽዕኖ ነበረው?
 በመጨረሻው ሴሚስተር ዝቅተኛ ውጤት አምጥቻለሁ ::
 በውጤቱ ላይ ምንም ነገር አልተከሰተም
 ሌላ ካለ እባክዎን ይግለጹ :: _____

21. በውሀ ወለድ ህመም ምክንያት ከትምህርት ቤት ያቋረጥ ተማሪ / የክፍል ጓደኛ ያውቃሉ?
 አዎ አይ

III. ክፍል የመጻፍዎን ቤት አገልግሎት ጥያቄዎች

እባክዎን በጥንቃቄ ያንብቡ እና ለአርስዎ መልስ (ች) ተጓዳኝ ሳጥኖቹን ምልክት ያድርጉባቸው

ትምህርት ቤቱ የመጻፍዎን ቤት አገልግሎት አለው?

- አዎ የለውም

23. ለጥያቄ 22 መልስዎ አዎ ከሆነ በትምህርት ቤትዎ ውስጥ ምን ዓይነት የመጻፍዎን ቤት ነው ያለው?

- ውሃ ማፍሰሻ ያለው፣ ክፍት ያለው፣ ቁጭ ተብሎ የሚጠቀሙበት መጻፍዎን ቤት
 ውሃ ማፍሰሻ የሌለው ቁጭ ተብሎ የሚጠቀሙበት መጻፍዎን ቤት
 ውሃ ያለው እንደ መቀመጫ ተቀምጦ የምንገለገልበት መጻፍዎን ቤቶች
 ክፍት ጉድጓድ ደረጃውን ያልጠበቀ መጻፍዎን ቤት
 መጻፍዎን ቤቶች የሉትም
 ሌላ ካለ (ይግለጹ)

24. በትምህርት ሰዓት በፈለጉት ጊዜ ወደ መጻፍዎን ቤት መሄድ/መጠቀም ትችላህ/ሽ?

- አዎ አይ

25. በወር አበባ ወቅት ሴት ልጆች የመጻፍዎን ቤቱን መጠቀም ይችላሉ?

- አዎ አይ

26. ከላይ ለተጠቀሰው ጥያቄ መልስዎ አዎ ከሆነ በመጻፍዎን ቤት ውስጥ ምን ዓይነት መገልገያዎች አሉ? (ለሴት ልጆች ብቻ)

- በመጻፍዎን ቤቱ ውስጥ የውሃ ሲንቧ አለ ::
 መጻፍዎን ቤቱ የወር አበባ ንጽህና መጠበቂያ ፓዶችን ለመለወጥ ምቹ ነው ::
 የወር አበባ ንጽህና መጠበቂያ ቁሳቁሶች የሚቀመጡበት ቦታ አለ ::
 የወር አበባ ንጽህና መጠበቂያ ፓዶችን ለመለወጥ የተለየ ክፍል አለ ::
 ሁሉም በመጻፍዎን ቤቱ ውስጥ ይገኛሉ ::

27. በትምህርት ቤት ውስጥ ከላይ የተጠቀሱትን የንፅህና አጠባበቅ እና የመጻፍዎን ቤት አገልግሎቶችን የምታገኝ ከሆነ ለትምህርትሽ ምን ዓይነት አስተዋጽኦ አለው? (ለሴት ልጆች ብቻ)

- ከትምህርት ቤት አልቀርም ምክንያቱም በትምህርት ቤት ውስጥ የተጠቀምኩትን የወር አበባ ንጽህና መጠበቂያዎችን መለወጥ እችላለሁ ::
 ከትምህርት ቤት አልቀርም ምክንያቱም መጻፍዎን ቤት ውስጥ ውሃ አለ::
 በትምህርት ቤት ውስጥ በድንገት የወር አበባ ቢከሰት የወር አበባ ንጽህና መጠበቂያዎ ፓዶች ይሰጣሉ
 የወር አበባ አስፈሪ ነገር አለመሆኑን ተምራለሁ እንዲሁም ወንዶች ተማሪ በሴት ልጆች ላይ መሳለቅን

አቁመዋል

ሴት ተማሪዎች ስለ በወር አበባ ላይ ያላቸው አመለካከት ተቀይሯል ስለዚህ በወር አበባ ወቅት ወደ ትምህርት ቤት ለመምጣት አልፈራም።

28. በትምህርት ቤት ውስጥ አስፈላጊ የንፅህና አጠባበቅ እና የመጻፍ ቤት አገልግሎቶችን የማታገኝ ከሆነ ትምህርትሽ ላይ ምን ዓይነት ተጽዕኖ አለው? (ለሴት ልጆች ብቻ)

በወር አበባ ጊዜ ከትምህርት ቤት እቀራለሁ ምክኛቱም የወር አበባ ንጽህና መጠበቂያዎችን በትምህርት ውስጥ መቀየር አልችልም።

በወር አበባ ወቅት ሁል ጊዜ ከትምህርት ቤት እቀራለሁ ምክንያቱም በሽንት ቤት ውስጥ ለመታጠቢያ የሚሆን ውሃ ማግኘት ስለማልችል ።

ትምህርት ቤቶቼ የወር አበባ ንጽህና መጠበቂያ አያቀርቡም በመሆኑም ያልተጠበቀ የወር አበባ በትምህርት ቤት ሲከሰት በጣም አስደንጋጭ ነው ።

የወር አበባ ለእኔ እንደ አስፈሪ የሌሊት ቅዠት ነው እንዲሁም ወንድ ተማሪዎችም በሴት ልጆች ላይ ያፌዛሉ

ልጃገረዶች ስለ ወር አበባ ያላቸው አመለካከት አልተለወጠም በመሆኑም ሴት ተማሪዎች በወር አበባ ወቅት ወደ ትምህርት ቤት መምጣትን እንዲፈሩ ያደርጋል።

በትምህርት ብቃት ላይ ምንም ተጽዕኖ የለውም

ሌላ ካለ እባክዎን

ይግለጹ

29. በትምህርት ቤቶች ውስጥ ስለ የወር አበባ ጤንነት አያያዝ ምን ያውቃሉ? (ወንዶች ብቻ)

የአንጀት ትላትሎች እና ትራኮማ መስፋፋትን ይቀንሳል ።

የተመጣጠነ ምግብ እጥረት ከባድነትና ተጽኖን ይቀንሳል።

ሴት ተማሪዎች ለራስ ያላቸውን ክብር እና ደህንነት ይጨምራል፤ በተጨማሪም ከትምህርት ቤት እንዳይቀሩ ያበረታታል ።

ለሴት ልጆች የተለየ የንፅህና አጠባበቅ አገልግሎትን ይሰጣል እንዲሁም የትምህርት ቤት መከታተልን ያጠናክራል

ሌላ ካለ እባክዎን ይግለጹ

ስለዚህ ጉዳይ ምንም አላውቅም ።

30. በትምህርት ቤታችሁ ውስጥ የመፀዳጃ ቤት ጤናማ እዲሆንና በንፅህና እንድንጠቀም የሚያበረታቱ ፖስተሮች አሉ?

አዎ አይ

31. በትምህርት ቤት ውስጥ የመፀዳጃ ቤት ንፅህናን ለመጠበቅ ምን ያደርጋሉ?

በመፀዳጃ ቤት ውስጥ በትክክል እና በአግባቡ እቀመጣለሁ

ከተጠቀምኩ በኋላ ወደ መፀዳጃ ቤቱን አጥባለሁ

ከተጠቀምኩ በኋላ መጻፍ ቤት ውስጥ ውሃ አላፈሰም

የመፀዳጃ ወረቀት በቅርጫት ውስጥ በአግባቡ እከታለሁ

የተጠቀምኩበትን የመፀዳጃ ወረቀት ወደ መፀዳጃ ቤት አስገባሁ

የተጠቀምኩበትን የወር አበባ ሞዴስ/ፓድ ሽንት ቤት ውስጥ እከታለሁ

የተጠቀምኩበትን የወር አበባ ሞዴስ/ፓድ ቅርጫቱ ውስጥ አስገባሁ

32. ከታች ከተዘረዘሩት ከጽዳት ጋር የተያያዙ በሽታዎች ውስጥ ተይዘው ያውቃሉ?

- ኮሌራ ተቅማጥ
- የሆድ ሕመም ሄፓታይቲስ ኤ
- ታይፎይድ ፖሊዮ
- የክብደት የመቀነስ ሁኔታ እስከ አሁን አልታመምኩም

33. ከዚህ በላይ በተጠቀሱት ንፅህና-ነክ በሽታዎች በመያዝዎ ምክንያት በትምህርት ብቃትዎ ላይ ያለው አስተዋጽኦ ምንድን ነበር?

- በታመምኩበት ጊዜ ከአንድ ሳምንት በላይ ከትምህርት ገበታ ላይ ቀርቻለሁ ::
- በሌሊት-በት አንዳንድ ፈተናዎችን አምልጠውኛል ::
- ከሁሉም ትምህርቶች አስፈላጊ የትምህርት ክፍሎች አምልጠውኛል::
- ከተመለስኩ በኋላ ከተቀሩትን ተማሪዎች ጋር እኩል መጓዝ አልቻልኩም ::
- ያመለጡኝን ትምህርቶች ለመሸፈን ጊዜ ወስዶብኛል ::

34. ከጽዳት ጋር በተዛመደ በሽታ ወይም ችግር ምክንያት ከትምህርት ቤት ያቋረጠ/ች ማንኛውም ተማሪ / የክፍል ጓደኛ ያውቃሉ?

- አዎ አይ

IV. ክፍል የንፅህና አጠባበቅ ጥያቄዎች

እባክዎን በጥንቃቄ ያንብቡ እና ለእርስዎ መልስ (ች) ተጻዳኝ ሳጥኖቹን ምልክት ያድርጉባቸው

35. አብዛኛውን ጊዜ በትምህርት ቤት ውስጥ ለመታጠቢያ የሚሆን ውሃ ይገኛል?

- አዎ ፣ ሁል ጊዜ በአብዛኛው ጊዜ
- አልፎ አልፎ በጭራሽ የለም

36. በትምህርት ቤት ውስጥ ሳሙና አብዛኛውን ጊዜ እጅ መታጠብያ ላይ ይገኛል?

- አዎ ፣ ሁል ጊዜ (ሁል ጊዜ በትምህርት ዓመቱ) በአብዛኛው ጊዜ
- አልፎ አልፎ በጭራሽ አይገኝም

37. እጅዎን መቼ ምቹ ይታጠባሉ?

- ምግብ ከመብላቴ በፊት
- መጻዳጃ ቤት ከተጠቀምኩ በኋላ
- ከጓደኞቼ ጋር ጨዋታ ከተጫወቱ በኋላ
- በኮሮና ቫይረስ ምክንያት በተደጋጋሚ እጆቼን እታጠባለሁ ::
- በትምህርት ቤት ውስጥ እጄን አልታጠብም ::

38. እጅዎን ለመታጠብ ምን ይጠቀማሉ?

- ውሃ ብቻ ውሃ እና ሳሙና

39. የእጅ መታጠቢያ ተቋማት በትምህርት ቤቱ ውስጥ ላሉት ተማሪዎች ሁሉ ተደራሽ ናቸው? እንደ ትናንሽ ልጆች እና የመንቀሳቀስ ውስንነት ያላቸው ተማሪዎች

- አዎ ፣ የእጅ ማጠቢያ መገልገያዎች ለሁሉም ተማሪዎች ተደራሽ ናቸው ::
- አይ

40. የእጅ መታጠቢያዎች ለሁሉም ተማሪዎች ተደራሽ ካልሆኑ ምክንያቶቹ ምንድን ናቸው?

- የእጅ መታጠቢያዎቹ ከመጠን በላይ ስለሆኑ ለትንንሽ ልጆች ተደራሽ አይደሉም ::
- የእጅ መታጠቢያዎቹ አመቺ ባለመሆናቸው ምክንያት የመንቀሳቀስ አቅማቸው ውስን ለሆኑ ተማሪዎች ተደራሽ አይደሉም ::

- የእጅ መታጠቢያዎቹ ተግባራዊ አይደሉም/አይሰሩም ::
- የእጅ መታጠቢያዎቹ ለተማሪዎች እንዲጠቀሙ አልተፈቀደላቸውም ::
- ሌላ ከሆነ እባክዎን

ይግለጹ _____

41. በትምህርት ቤትዎ ውስጥ ንፅህና አጠባበቅ እውቀትን ለማሳደግ ምን ምን ዓይነት ተግባራት ተከናውነዋል?

- የንፅህና አጠባበቅ ትምህርት ሥርዓተ ትምህርት ውስጥ ተካትቷል ::
- ከመደበኛ ትምህርት ውጭ በእጅ ማታጠብ ላይ የተለያዩ እንቅስቃሴዎች ይደረጋሉ::
- የቡድን እጅን መታጠብ ስነ ስርዓት ይከናወናል::
- በት/ቤቱ ከተለያዩ ባለ ድርሻ አካላት የተገኘ ትምህርት መረጃ ሰጭ ቁሳቁሶች አሉ::
- አስታዋሽ መልእክቶች እና ፖስተሮች በወሳኝ ቦታ ተሰቅለዋል
- በዚህ ላይ የሚሰሩ ድርጅቶች በትምህርት ቤት ስልጠና ይሰጣሉ ፣ ዝግጅቶችን ያዘጋጃሉ እንዲሁም የግንዛቤ መፍጠር ዝግጅቶችን ያዘጋጃሉ ::
- የተመረጡ ተማሪዎች (የንፅህና አምባሳደሮች) የግንዛቤ ፈጠራዎችን ይሰጣሉ ::
- በትምህርት ቤታችን ውስጥ የንፅህና ማስተዋወቂያዎች አሉ ::
- ሌሎች ካሉ ይግለጹ _____

42. በቤትዎ ውስጥ ማንኛውንም የንፅህና ትምህርት (የግንዛቤ ፈጠራ) አካሂደው ያውቃሉ?

- አዎ አይ

43. ከላይ ለተጠቀሰው ጥያቄ መልስዎ አዎ ከሆነ ለቤተሰብዎ ምን የንጽህና ትምህርት ሰጡ?

- ስለ እጅ መታጠብ ሂደቶች/አስተጣጠብ
- እጅን ለመታጠብ ወሳኝ ጊዜያቶች
- ስለ የወር አበባ ጤና አጠባበቅ/አያያዝ
- የመፀዳጃ ቤቶችን ንፅህና እንዴት መጠበቅ እንደሚቻል
- ሁሉንም

44. በወር አበባ ዙሪያ አንዳንድ የተሳሳቱ አመለካከቶች ወይም በባህል የተከለከሉ ነገሮች አጋጥመውዎት ያውቃሉ?

- አዎ አይ

45. ለሴት ልጆች ለወር አበባ ጤና አጠባበቅ የሚረዱ ምን ምን አቅርቦቶች በትምህርት ቤቱ ይገኛሉ?

- ሴት ልጆች የወር አበባ ንፅህናን የሚጠብቁበት የተለየ ቦታ አለ ::
- ነፃ የወር አበባ ንፅህና ምርቶች (ለምሳሌ ፓድ)
- ያገለገሉ የወር አበባ ንፅህና መጠበቂያዎች የሚወገድበት ማጠራቀሚያ አለ ::
- የወር አበባ ጤና አጠባበቅ የትምህርት ቁሳቁሶች ይገኛሉ::
- ሌላ ካለ(እባክዎን ይግለጹ) _____

47. ከወር አበባ የጤና አጠባበቅ ጋር የተዛመዱ የትምህርት ቁሳቁሶች በትምህርት ቤቱ ለሴት ልጆች ተደራሽ ናቸው

- አዎ
- በትምህርት ቤቱ ውስጥ ከወር አበባ ጋር የተዛመዱ የትምህርት ቁሳቁሶች የሉም
- እኔ አላውቅም

48. ሴት ልጆች የወር አበባ ንፅህና መጠበቂያዎችን በትምህርት ቤቱ ማግኘት የሚችሉት መቼ ነው?

- በማንኛውም ሰዓት በመጻዳጃ ቤት ውስጥ ይገኛል
- ማንኛውም ጊዜ በተጠየቀ ጊዜ

- ልዩ በሆኑ ጉዳዮች ብቻ
- የወር አበባ ንፅህና ቁሳቁስ አይገኝም

49. በወር አበባ ምክንያት ከትምህርት ቤት የቀሩ ልጃገረዶች ያውቃሉ ወይንስ አንቺ በወር አበባ ምክንያት ከትምህርት ቤት ቀርተሽ ታውቁያለሽ?

- አዎ እሱ የተለመደ ክስተት ነው ::
- አዎ ፣ ግን አልፎ አልፎ ይከሰታል ::
- ሌሎች ሴቶች ወይም እኔ በወር አበባ ምክንያት ትምህርት አያመልጠንም ::
- እኔ አላውቅም

50. በእርስዎ አስተያየት ሴቶች በወር አበባቸው ወቅት ትምህርታቸውን በአግባቡ ለመከታተል እንዲረዳቸው በውሃ ፣ በጤና አጠባበቅ እና በመጻዳጃ ቤት ዙሪያ የሚሰሩ ድረጅቶች እና የሚመለከታቸው ባለ ድርሻ አካላት ምን ማድረግ አለባቸው ብለህ/ሽ ታስቢያለሽ?

- የወር አበባ ትምህርት እና መረጃ መሰጠት ይኖርበታልያቅርቡ ::
- የመጻዳጃ ቤት አገልግሎትን ማሻሻል (ለምሳሌ ግላዊነት ፣ ተደራሽነት ፣ ንፅህናን ያሟላ)
- የወር አበባ ንፅህና መጠበቂያ ቁሳቁሶች ተደራሽነትን ማሻሻል ::
- በት/ቤት ውስጥ ለሴት ተማሪዎች የማህበረሰብ አቀፍ አገልግሎት መስጠት (ለምሳሌ ሴት ተማሪዎች ከወር አበባ ጋር በተገናኘ በወንድ ተማሪዎች እንዲሁም በማህበረሰቡ የሚያደርሱባቸውን መገለልን እንዲያሸንፉ ማህበራዊ ድጋፍ ማድረግ)
- የተጠቀሙባቸውን የወር አበባ ንጽህና መጠበቂያዎችን የበለጠ ውጤታማ በሆነ መንገድ ማስወገድ
- ሌላ ካለ (እባክዎን ይግለጹ) _____

APPENDIX 3

Checklist to guide Key Informant Interviews (KII) with concerned organization staff

General Information: –

Name of Interviewee: _____

Sex: _____

Position of person interviewed _____

Years of experience on WASH sector _____

Name of the organization _____

Date of Interview _____

1. Who are the actors in implementing wash intervention in Addis Ababa?
2. How do you explain the institutional arrangements in implementing WASH intervention in school?
3. What approaches do the Wash implementers (your organization) use to implement wash intervention at school?
4. Challenges do the actors are currently facing in implementing Wash intervention at school.
5. What is the existing policy related to WASH and their role? Which one is effective policy?
6. What are their challenges in implementing WASH intervention policy?
7. What approaches are you using to resolve? How do you respond to those challenges?
8. What recommendation do you have in improve WASH intervention at school?

APPENDIX 5

Checklist to guide Key Informant Interviews (KII) with concerned staff of the schools.

General Information:

1. Name of Interviewee: _____
Sex: _____
Position of person interviewed _____
Years of experience _____
Name of the school _____
Date of Interview _____
1. Do you know about the WASH program being implemented in your school? If yes, have you been involved in the implementation of the program? What was your role in the program implementation?
2. Is hygiene education integrated in the lesson plans of the schools? If yes, how, and how often do you check the sessions covered based on the integration? If no, why?
3. Have the schools received any hygiene and sanitation education materials from any WASH actors? If yes, what materials have been distributed to schools? would you please discuss as to how was the materials used, who is using the materials?
4. What are the most significant changes (3) since the year WASH program implemented in your school?
5. How and why do you think are the main reasons for these changes?
 - Have you observed change in school dropouts and absenteeism in your school since the WASH program made safe water and sanitation facilities available in the school? If yes, can you let us any supporting evidence? Any differences in gender and disability that relates to dropout or absenteeism.
 - Have you observed any hygiene behavior change practices among students? Please explain.
 - Has the WASH integration to the school program contributed toward increasing enrolment of children? Please explain.
6. Is there any impact of WASH in the overall improvement of the school's environment (school sanitation and wider learning)? If yes, please mention some of the impacts.

7. What do you think about the general approach of the intervention in your school? Does it work or not? If it works what is the uniqueness of the intervention? If it is not work out. Probe what are the shortcomings or the limitation of the WASH program in your school? What do you suggest to the WASH actors and stakeholders to be done differently to improve students school performance?

Questions for Control Group School Staffs

1. Do you know about the WASH program being implemented in your school? If no, what are the (3) key WASH issues and challenges in your school? what did you do to solve the challenges regarding lack of accessing clean water, proper sanitation, and hygiene education in your school? How do manage it?
2. How do you explain student's hygiene behavior in your school? What did you to change student's hygiene behavior in your school?
3. What is the status of dropout and absenteeism in your school? What are the causes of dropout and absenteeism in your school? If the cause is directly or indirectly related to the WASH issue, please explain how it is related?
4. What mechanism do you use for students with physical disabilities and girls to provide a proper sanitation at school? Is there any relationship with their school performance?
5. Have you observed any water, sanitation, and hygiene related disease symptoms among the students in your school? Or have you every any emotional and physical tiredness on your students? If yes, can you explain them?
6. What additional capacity required to assist students to resolve their Water Sanitation and Hygiene challenges? Whose responsibilities do you think it? What do you think about integrating WASH education in school curriculum? What do you suggest for government, policy makers and any other stakeholders to solve the problem at school?