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# Barriers and Facilitators to Standard Sanitary Practices among Pupils in Private and Public Primary Schools in Ringim Town, Jigawa State

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## *Abstract*

Personal sanitation refers to the practice of maintaining cleanliness and proper care of different parts of the body, including the hands, teeth, ears, hair, eyes, legs, and nose, in order to promote good health and prevent diseases. Personal hygiene practices such as regular handwashing before eating and after toilet use, proper oral care, wearing clean clothes, and maintaining environmental cleanliness play a vital role in reducing the spread of communicable diseases among school children. Poor sanitary behaviors such as open defecation, inadequate handwashing, and improper waste disposal remain major public health concerns, particularly among primary school pupils in developing communities. This study examined the barriers and facilitators to standard sanitary practices among pupils in public and private primary schools in Ringim Town, Jigawa State. The study adopted a descriptive cross-sectional survey design. The target population comprised 13,800 pupils from selected public and private primary schools in Ringim Town. Based on recommendations for populations above 10,000, the sample size was increased from 392 to 476 to improve representativeness and account for possible attrition and non-response. Consequently, a total of 500 questionnaires were distributed to pupils using a structured sampling technique. Data were collected through questionnaires and direct observation checklists to assess sanitary practices, availability of hygiene facilities, and factors influencing hygiene behavior among pupils. The collected data were analyzed using the Statistical Package for Social Sciences (SPSS) version 23. Descriptive statistics such as frequencies, percentages, means, and standard deviations were used to answer the research

questions, while inferential statistics involving t-tests were used to test the hypotheses at a 0.05 level of significance. The findings revealed that although many pupils possessed basic knowledge of personal hygiene and understood the importance of sanitary practices, several barriers hindered the effective practice of hygiene, especially in public schools. Major challenges identified included inadequate water supply, poor toilet facilities, overcrowding, insufficient hygiene education, and limited access to sanitary materials. The study further showed that factors such as supportive school policies, parental involvement, availability of sanitation facilities, and regular health education served as important facilitators of proper hygiene practices among pupils. The study concluded that improving sanitation infrastructure, strengthening hygiene education programs, and promoting collaborative efforts among schools, parents, and health authorities are essential for enhancing sanitary practices and improving the health status of primary school pupils in Ringim Town, Jigawa State.

**KEYS:** Sanitation, Primary school pupils, Barriers and facilitators, School hygiene, Personal hygiene.

# *Introduction*

**Background to the study**

Sanitation is commonly understood as the study and application of measures aimed at preventing the spread of illness by maintaining cleanliness (Gwenzi, 2021). It encompasses a wide range of practices intended to protect and promote health and well-being. Although it is strongly linked to disease prevention, sanitation also covers areas related to medicine, personal care, and professional hygiene standards. According to the Victoria State Department of Health (2015), sanitation is a science focused on enhancing overall health. Personal hygiene, a vital part of sanitation, involves maintaining the cleanliness and grooming of the external body (Johnson, 2015). It includes individual actions and habits that contribute to physical cleanliness and health. Good personal hygiene practices offer several advantages, including disease prevention, faster recovery from illness, improved social interactions, emotional well-being, and a positive physical appearance. It forms the foundation of good grooming and health maintenance. Maintaining proper hygiene can help prevent conditions such as dandruff, athlete's foot, body odor, pinworms, excessive earwax, and gastrointestinal infections (Web Health Centre, 2015)

Personal hygiene entails taking care of every part of the body, including the hands, feet, teeth, ears, hair, eyes, and nose. A person's health is significantly shaped by their daily habits and behaviors, which can either support or undermine their well-being (Satish et al., 2020). Engaging in poor hygiene practices—such as eating without washing hands, defecating in the open, neglecting handwashing after using the toilet, wearing

dirty clothes, or not cleaning the mouth properly—can result in health issues (Onwunali et al., 2023). Personal hygiene refers to the routines and actions individuals take to ensure bodily cleanliness and promote good health. Maintaining proper hygiene not only boosts physical appearance and confidence but also helps in preventing the spread of infections.

The reasons for practicing good hygiene include reducing the chances of getting sick, speeding up recovery from illness, maintaining optimal health, fostering a sense of well-being, gaining social approval, and avoiding the spread of diseases to others. Neglecting personal care can harm a person's self-image and confidence (Johnson, 2015). Good grooming involves wearing clean clothes, keeping hair tidy, brushing teeth regularly, maintaining fresh breath, keeping the skin clean, and trimming and cleaning nails. These habits collectively promote physical health and overall wellness. Regular personal hygiene is one of the most effective ways to protect oneself from diseases (Anastasia, 2024). It involves washing hands and the body regularly, and caring for the ears, eyes, teeth, nails, feet, and other body areas, including personal items. A person's physical appearance often reflects their level of hygiene. Furthermore, sharing personal tools such as hair clippers, manicure, and pedicure items can pose serious health risks. Hence, it's essential for pupils to understand these risks and take necessary precautions.

Even basic hygiene routines can greatly reduce the transmission of illnesses such as colds and coughs. Poor hygiene can also negatively affect social interactions, as individuals may avoid someone with poor hygiene rather than confronting the issue directly (Expert, 2015). Although hygiene is a personal matter, individual practices should generally meet globally accepted standards. Hygiene habits vary across cultures; what is common in one society may be unfamiliar or inappropriate in another. For example, the use of chewing sticks for oral care is a cultural tradition in parts of Africa.

**Statement of the problem**

A wide range of gastrointestinal illnesses, such as diarrhea, dysentery, typhoid, and cholera, can be effectively prevented through proper personal hygiene (Lucas & Gilles, 2012). Beyond these, numerous other health conditions can also be avoided with consistent hygienic practices. These include head lice, dandruff, halitosis (bad breath), dental caries, dental plaque, earwax buildup, body odor, excessive sweating, urinary tract infections, pinworms, impetigo, boils, ringworm, allergic reactions, body lice, ticks, black hairy tongue, trachoma, cystitis, thrush, common colds, helminthic infestations, and athlete's foot (Anastasia, 2024).

In earlier times, schools regularly conducted hygiene inspections for pupils, but this practice has significantly declined (United Nations Children's Fund, & World Health Organization., 2020). Several factors contribute to the continued spread of infectious diseases within communities, including poor sanitation infrastructure and limited public understanding of the microorganisms responsible for these illnesses (Nadimpali et al, 2020). In many settings, the necessary facilities and conditions that support improved personal hygiene among pupils are either lacking or inadequate.

Trachoma, a contagious eye infection caused by the bacterium *Chlamydia trachomatis*, remains the leading preventable cause of blindness. It can be controlled by enhancing sanitation, eliminating environments conducive to fly breeding, and encouraging children to wash their faces regularly with clean water. According to the World Health Organization (2015), an estimated 6 million people have lost their vision due to trachoma, with around 146 million individuals experiencing acute infections globally.

It is important to identify specific areas where school-aged children face challenges in maintaining proper personal hygiene. Many pupils still engage in unhygienic behaviors such as biting their nails, sneezing without covering their mouths, rinsing their hands with only water after using the toilet, and using unsafe objects like hairpins to clean their ears. Unfortunately, there is limited information available about the facilities currently in place to support pupils in maintaining appropriate personal hygiene (Kabir et al., 2021). Additionally, few comprehensive studies have been conducted on the personal hygiene practices of primary school pupils in Nigeria. This study, therefore, aims to address this gap by investigating the barriers and facilitators affecting standard sanitary practices among pupils in both private and public primary schools in Jigawa State.

**Objectives of the Study**

The specific objectives that guided the design of this study were to;

1. To Assess the pupil's knowledge on personal standard sanitary practices in private and public primary schools in Ringim town.
2. To describe pupil's perception relating to standard sanitary practices in private and public primary schools in Ringim town.
3. To report pupil's practices relating to standard sanitary practices among pupils in private and public primary schools in Ringim town.
4. To identify factors that can influence pupils 'standard sanitary practices in private and public primary schools in Ringim town.
5. To appraise the facilities in schools that can influence pupils 'standard sanitary practices among pupils in private and public primary schools in Ringim town.
6. To describe the facilities in the homes that can influence standard sanitary practices among pupils in private and public primary schools in Ringim town.

**Research questions.**

1. What is the level of knowledge of standard sanitary practices among pupils in private and public primary schools in Ringim town?
2. What is the perception of pupils on standard sanitary practices among pupils in private and public primary schools in Ringim town?
3. What are the personal sanitary practices of the pupils on standard sanitary practices among pupils in private and public primary schools in Ringim town?
4. What are the factors that can influence pupils 'standard sanitary practices in private and public primary schools in Ringim town.

5. What are the facilities in schools that can influence pupils 'standard sanitary practices among pupils in private and public primary schools in Ringim town.
6. What are the facilities in their homes that can influence standard sanitary practices among pupils in private and public primary schools in Ringim town.

**Hypotheses**

HO1. There is no significant difference between standard sanitary practices among pupils in private and public primary schools in Ringim town

HO2. There is no significant difference between standard sanitary practices among pupils in private and public primary schools in Ringim town?

HO3. There is no significant difference between personal sanitary practices of the pupils on standard sanitary practices among pupils in private and public primary schools in Ringim town?

HO4. There is no significant difference between facilities in the home that can promote the personal sanitary of pupils in Ringim town?

HO5. There is no significant difference between facilities in the school that can promote the practice of personal sanitary practices among pupils in private and public primary schools in Ringim town?

HO6. There is no significant difference between factors affecting the personal sanitary of pupils on standard sanitary practices among pupils in private and public primary schools in town?

**Scope of the study**

The **Scope of the study is focusing to** observe the standard sanitary practices among pupils in private and public primary schools in Ringim town of Jigawa state, it will not be possible to go to the respondent's homes to obse rve the materials they had for personal sanitary as it will be done for the schools, therefore the respondent's reports alone will be the source of data available for respondent's facilities from homes.

**Conceptual framework**

This study adopts the PRECEDE Model, developed by Lawrence Green and his colleagues, as its guiding theoretical framework. The PRECEDE Model is particularly useful for identifying factors influencing human behavior. The acronym stands for Predisposing, Reinforcing, and Enabling factors, all of which shape behavior patterns. Originally designed for problem-solving and health education planning, the PRECEDE Model serves as an effective conceptual tool for diagnosing personal hygiene issues in school settings and for designing educational interventions (Green & Kreuter, 1999). It facilitates a comprehensive understanding of the behavioral influences and supports the development of programs that encourage healthy habits, including proper personal hygiene. Additionally, this model provides a valuable framework for addressing personal hygiene challenges faced by students in Nigeria.

**Predisposing factors** are the underlying reasons that motivate a person's behavior. They include individual values, knowledge, attitudes, beliefs, cultural norms, and customs related to health, all of which shape actions like personal hygiene. Using the PRECEDE model allows us to evaluate students' understanding, attitudes, and beliefs about proper body care and to identify any gaps that may explain inadequate hygiene practices.

**Enabling factors** are the necessary conditions that support the ability to carry out a behavior. These include resources like money, materials, time, skills, facilities, and supplies essential for maintaining good personal hygiene. The PRECEDE model helps pinpoint why some schools may lack proper hygiene facilities or materials and suggests ways to overcome these gaps. By focusing on specific hygiene practices involving hair, eyes, teeth, hands, skin, feet, nails, nose, and ears, the model guides the creation of programs to enhance these habits.

**Reinforcing factors** are those that encourage or discourage a behavior. These include external influences such as parents, peers, teachers, employers, health professionals, and even extended family members like uncles, aunts, and neighbors. These social influences play a crucial role in either motivating or hindering individuals from adopting healthy personal hygiene practices. Reinforcing factors act as motivators that encourage the repetition of a particular behavior. These factors include stakeholders who either support or hinder personal hygiene practices in schools and at home. Through the use of the PRECEDE model, this study will identify key stakeholders and determine how they influence the promotion of proper sanitary practices. Advocacy efforts can then be employed to address any gaps or issues identified in these practices.

The PRECEDE model serves as a diagnostic tool to pinpoint areas and factors that contribute to the lack of personal hygiene practices and to explore ways to improve these practices. The application of this model helps to understand the relationships between various factors, as illustrated in Figure 2.1. In this study, the PRECEDE model was used to assess the knowledge, perceptions, and behaviors of primary school students regarding key aspects of personal hygiene, such as handwashing, tooth brushing, bathing, grooming, and the care of other parts of the body. It also evaluates the roles of relevant authorities and identifies the facilities available for students to practice good hygiene.

Personal hygiene-related knowledge, goals, principles, and instruction are fundamental components of health education in school settings. Proper personal hygiene is essential for preventing and controlling the spread of diseases, as well as for maintaining overall health. Hornby (2014) defines hygiene as the practice of maintaining cleanliness in one's living and working environments to prevent illness and disease. Personal hygiene includes activities such as bathing, hair grooming, teeth cleaning, and the care of the feet, skin, eyes, ears, nose, nails, and hands.

**Sanitary practices and health**

Each part of the body requires proper care to maintain overall health. The World Health Organization (WHO) defined health in 1948 as a state of physical, social, emotional, and mental well-being, rather than simply the absence of disease. Numerous gastrointestinal

diseases, such as diarrhea, dysentery, typhoid, and cholera, can be prevented through good personal hygiene (Lucas and Gilles, 2012). Other health issues like urinary tract infections, pinworms, impetigo, boils, ringworm, allergic reactions, body lice, ticks, black hairy tongue, trachoma, cystitis, thrush, colds, helminthic infestations, and athlete's foot can also be prevented through proper hygiene (Lucas and Gilles, 2012).

The hair requires regular attention. It is important to wash the hair at least once a week with soap and water, especially for those who style it. Care should be taken to use the right shampoo to avoid allergic reactions. Brushing the hair with a soft-bristled brush 3 to 4 times a day can also help. Oiling the scalp once a week can prevent dryness, and those who engage in sports should wash their hair after practice or games, particularly if they have oily hair. Improper chemical treatments can also damage the hair. Just as with the rest of the body, eating the right foods supports hair health (Better Health Channel, 2015).

The human head has many hairs, and each hair shaft contains three layers, with the outer layer (cuticle) protecting the inner layers. Healthy, shiny hair reflects good care, as the flat, overlapping cuticle layers protect the inner layers from environmental damage such as sun exposure, heat, and chlorine. Poor hair hygiene can lead to conditions like head lice, dandruff, and seborrhea (Victoria State Department of Health, 2015).

The eyes are a sensitive and vital part of the body, and their care is essential for maintaining long-term vision. The eyes are responsible for providing the sense of sight, allowing people to observe and learn about the world around them. As people age, the ciliary muscles weaken, and the crystalline lens becomes less flexible, leading to presbyopia (difficulty focusing on near objects). This condition can be corrected with reading glasses (Parks, 2011).

Students suffering from myopia may struggle if they are seated too far from the chalkboard, making it crucial for teachers to identify and correct vision problems early. Regular eye exams are important for everyone, not just for those with vision problems, to detect diseases, infections, or changes in vision (Montgomery, 2008). To care for the eyes, one should avoid exposing them to foreign objects such as chemicals or dust, prevent eye injuries, and avoid using contaminated materials to clean the eyes (Parks, 2011). Excessive use of cosmetics can sometimes cause allergic reactions. Eating foods rich in vitamin A and yeast also promotes eye health (Health Facts, 2014).

The ear is a delicate organ that requires special care. It is important to avoid inserting objects like hair grips, matchsticks, or nail files into the ear, as this can damage the eardrum (WHO, 2015). Cotton buds are unnecessary for cleaning the ear, as the ear has natural self-cleansing abilities. Instead, regular hearing tests by specialists should be conducted to check for hearing loss or disorders. A simple wash with soap and water is sufficient to clean the outer ear (Web Health Centre, 2015).

Children who lose their hearing early in life may struggle with speech development, making it critical to keep the external ear clean and protect the internal ear from injury (UNICEF, 2013). If any abnormalities, pain, or injury occur in the ear, medical attention should be sought immediately.

The nose is essential for breathing and smelling (Olabisi, 2012). To prevent air-borne infections, it is important to use a clean tissue or handkerchief to cover the mouth and nostrils when sneezing or yawning. Applying Vaseline or olive oil to the nose can help prevent dryness and irritation of the mucosal lining (Olabisi, 2012). It is important to avoid probing the nose with fingers or dirty objects. A clean tissue or handkerchief should be used to clean the nose, but this should not be done excessively. Overcrowding and exposure to smoke and pollutants can harm the respiratory system (UNICEF, 2014).

Oral health is a crucial part of overall health care (BHC, 2015). Poor oral hygiene can lead to a range of problems, including tooth decay, gum disease, and even tooth loss. Dental caries (cavities) are caused by bacteria on the teeth metabolizing dietary sugars, which produce acids that erode the tooth surface (Loochtan, 2013). Gum disease, or periodontal disease, is common among people with poor oral hygiene practices and occurs when bacteria damage gum tissue, causing it to pull away from the teeth, forming pockets that trap more bacteria (Loochtan, 2013). Gingivitis, the early stage of gum disease, causes swollen, bleeding, and inflamed gums (NIH, 2012).

To maintain good oral health, it is essential to brush teeth properly after each meal or at least twice a day—once in the morning and once before bed. This helps remove plaque, which can lead to cavities if not cleaned. It is also important to replace toothbrushes every 3-4 months and never share toothbrushes with others (Victoria State Department of Health, 2013).

The skin is a vital organ that requires proper care, as it contains millions of sweat glands (Johnson, 2015). These glands produce between three quarts to one pint of sweat each day. In tropical regions, sweat production is higher, and perspiration increases with physical exertion or nervous tension. An unpleasant odor occurs when bacteria on the skin decompose sweat, especially in areas such as the groin, underarms, and feet, or in clothing that absorbs sweat (WHO, 2015). Certain body creams, soaps, and deodorants can cause allergic reactions, leading to skin rashes. Acute allergic dermatitis, a common dermatological condition, may manifest as swelling and itching, particularly around the eyelids and genitals (Derrick, 2008). It is essential for students to avoid using body creams or cosmetics indiscriminately. They should bathe at least once or twice daily, using soap, a sponge, and plenty of water. A mild soap is sufficient, and back brushes may be used to ensure thorough cleaning. Bathing after strenuous physical activity is also necessary (Victoria State, Department of Health, 2013).

Poor hygiene can lead to the ingestion of harmful worm eggs, resulting in infections like ascariasis, hookworm, and tapeworm. These infections occur when eggs are consumed through contaminated food or water. Hookworm, for example, commonly affects people who walk barefoot, especially on farms, where the eggs are transmitted via contaminated soil due to improper disposal of human waste (WHO, 2008).

Gastrointestinal diseases such as cholera, diarrhea, hepatitis A, poliomyelitis, salmonellosis, and typhoid can result from poor sanitation practices. Contamination of food, water, and hands with bacteria, along with indirect contamination through flies and utensils, can all lead to these diseases (Parks, 2011). Hand washing with soap and water plays a critical role in preventing

and controlling these diseases. It is important to wash hands before preparing or eating food, after meals, and after using the toilet or urinals (Better Health Channel, 2015).
Effective hand washing includes several key steps:

1. Wash hands with warm running water and apply liquid or bar soap.
2. Rub hands together vigorously for at least 15-20 seconds, ensuring all surfaces, including the backs of the hands, are scrubbed.
3. Rinse thoroughly and dry with a clean, disposable towel (FDA, 2009).

Good foot hygiene is essential for preventing fungal infections, warts, hammertoes, and hookworms (WHO, 2008). Keeping feet clean and dry is key to preventing foot odor and infections. Feet should be washed daily with soap and water, and tight socks and shoes should be avoided (WHO, 2008). Personal clippers or new blades are recommended for cutting nails, and nails should not be cut with teeth. It is also important to avoid long nails, as they can harbor bacteria.
Students should take care to maintain proper hygiene with their clothing, uniforms, underwear, towels, and handkerchiefs (Nardo, 2013). Clean and well-maintained personal items contribute to overall health and well-being, helping to prevent skin irritations, infections, and other health issues.

**Perception of pupils on personal sanitary**

Despite the significant role that personal hygiene plays in preventing communicable diseases, many people still do not take it as seriously as they should. The reasons for this are clear—people often believe that certain bad habits can be overlooked, which prevents them from abandoning such behaviors (Nardo, 2013). Some of these habits include thumb sucking, nail biting, and using objects to pick the ears (Ghose, Rahman, Hassan, Khan, and Alam, 2012).
Certain perceptions can also hinder the adoption of desirable health behaviors. For instance, some students believe that wearing long nails enhances their physical appearance. However, they may not realize that such perceptions can be harmful (FDA, 2009). Additionally, the habit of going to salons for pedicures and manicures should be discouraged among students, unless they bring their own kits (Leonard, 2014).
Personal hygiene is not just about looking good; it is also vital in preventing illnesses caused by harmful pathogens (Lucas and Gilles, 2012). However, the lack of resources, such as soap and water, can prevent students from practicing proper hygiene. Studies show that limited access to these basic resources is one of the main reasons why children do not wash their hands (Vivas, Bizu, Nigusu, Abera, Yemane, and Williams, 2010).
Beyond the availability of personal hygiene resources, it is equally important to equip students with sufficient knowledge about proper hygiene practices. Such knowledge plays a crucial role in fostering health-promoting behaviors among students. It also empowers them with the skills to become peer educators and community health advocates (Madaras, 1998).
The provision of adequate personal sanitary facilities and materials is a key factor in promoting personal hygiene practices among pupils, and this responsibility lies with parents, schools, and

the community. Students must have access to the necessary materials for effective personal hygiene both at home and in school. These materials include good restrooms, potable water, handwashing facilities, personal plates, cups, spoons, water bottles, towels or napkins, and a clean environment. Additionally, a safe and neat recreational area or playground is essential for students' well-being (BHC, 2015).

The expert committee established by the WHO to work on school health programs envisions a future where schools worldwide prioritize human development and use all their resources to achieve this goal (WHO, 1990). Several organizations can support the provision of these essential materials for students. Identifying key areas that will provide the greatest public health benefits is crucial. For instance, research has shown that improvements in water supply and sanitation are closely linked with better hygiene practices (WHO, 2015).

A safe learning environment for students and a healthy working environment for staff are both essential. This includes providing safe water, sanitary facilities, school clinics, nutritious food, and micronutrients to combat hunger and disease—critical factors in promoting the personal hygiene of pupils (Nutbeam, 2015).

In developing countries, water-related diseases significantly affect the lives of the poor. Diseases resulting from poor personal hygiene are among the leading causes of ill health. Much of this suffering is avoidable, as health improvements serve as an effective gateway for development and poverty alleviation (WHO, 2015). Diseases such as trachoma, a leading cause of preventable blindness, can be prevented through simple hygiene practices.

Where there is consistent access to clean water, personal hygiene is promoted, and individuals have better control over their health. In places where basic water supply and sanitation are considered human rights, diseases are almost unheard of (WHO, 2015).

Studies have shown that school attendance for girls increases when separate latrines are provided for boys and girls. For example, in Bangladesh, where UNICEF began promoting separate facilities in 1992, girls' school attendance rose by an average of 11% per year (WHO, 2015).

**Research design**

The design for the study was descriptive cross-sectional survey. It's aimed to identify the Barriers and facilitators to standard sanitary practices among pupils in private and public primary schools in Ringim town of Jigawa state.

**Study area**

Jigawa State is one of the thirty-six states that make up the Federal Republic of Nigeria. Located in the northwestern region of the country, it lies between latitudes 11.00°N and 13.00°N, and longitudes 8.00°E and 10.15°E. The state shares borders with Kano State (355 km or 221 miles) and Katsina State (164 km or 102 miles) to the west, Bauchi State to the east, and Yobe State (193 km or 120 miles) to the northeast. To the north, Jigawa has an

international boundary with the Zinder Region of the Republic of Niger, stretching 70 km, which presents unique opportunities for cross-border trade.

Jigawa covers an area of about 22,410 square kilometers. Its landscape features undulating terrain with sand dunes of varying sizes that extend across several kilometers in some parts. The southern area consists of a basement complex, while the northeast is dominated by sedimentary rocks from the Chad Formation. The main rivers in the state include the Hadejia, Kafin Hausa, and Iggi Rivers, along with numerous tributaries that feed into extensive marshlands in the northeast. The Hadejia–Kafin Hausa River flows west to east across the state through the Hadejia-Nguru wetlands before emptying into the Lake Chad Basin.

The Bade language is spoken in Guri LGA, Manga is spoken in Birniwa, Kiri Kasama, parts of Malam Madori, Kaugama and Guri LGAs. The Warji language is spoken in Birnin Kudu LGA, and the Duwai language is spoken in Hadejia LGA. Major languages are Hausa, Kanuri and Fula (spoken by the Fulani).

Ringim town serves as the headquarters of a Local Government Area (LGA) in Jigawa State. Covering an area of 1,057 km², it had a population of 192,024 according to the 2006 census. The Ringim Emirate was established in November 1991 following the creation of Jigawa State from Kano State on August 27, 1991, by then President and Commander-in-Chief of the Nigerian Armed Forces, General Ibrahim Badamasi Babangida. The emirate includes four Local Government Areas: Ringim, Taura, Garki, and Babura.

The current Emir of Ringim is Alhaji (Dr.) Sayyadi Abubakar Mahmoud Usman (CON), who is the first Fulani Emir of Ringim. He also served as chairman of the West Africa Co-operative. Historically, Ringim Local Government is well-known nationwide for its economic development. The area boasts fertile land suitable for both wet and dry season farming, producing subsistence and cash crops, along with numerous fruit trees lining the riverbanks.

Besides farming, many residents are involved in trading and marketing activities. These economic opportunities provide most parents with the means to pay for their children's education. The town was once renowned for its abundant groundnut and tobacco production and trade, which prompted the British colonial government to construct a railway line from Kano to Nguru passing through Ringim. The year 1930 marked the beginning of significant educational development in the town.

. In 1930, the first elementary school was established in Ringim (Katutu Primary School). Pupils recruited for 1931 was 39. In 1954, another elementary school (Sabon Gida Senior Primary School) was established. As a result of UPE programme in 1976 more schools was constructed in Ringim town and the pupils enrolments increased, Galadanchi primary school and Sabon Gari primary school were also established. This brought the number of primary schools in Ringim into four in addition to a number of Islamiyya Schools. In 9176, Government Secondary School was formally moved to Ringim after it stayed temporarily for two years at dawakin Tofa and a higher institution under Jigawa Polytechnic was established in 1991.

**Population for the Study**

The study population was pupils in primary 4,5 and 6 of both public and private primary schools in Ringim town comprising ABC and D, the student population 1,587 involving both male and female pupils in both private and public primary schools. Majority of them was between the ages of 7 to 12 years. The population of the target group was 13,800 which made it necessary to increase the number of the sample size from 392 to 476. There was the need to increase the number of the participants because the study population is larger than 10,000 (Akinsola, 2005). This will also take care of non-response and attrition. 500 questionnaires was administered for data collection so as to be able to retrieve adequate numbers of questionnaires back from the respondents. 20.0% of the total number of questionnaires administered was picked for observation (Olaseha et al, 2003). The total number of pupils who got enrolled in the year 2022/2023 was collected from the Ministry of Education to aid in the determination of the sample to be used for the study.

**Total number of pupils in Ringim town primary schools (2022/2023)**

| Name of School | Population | | Observed Schools |
|---|---|---|---|
| | Public | Private | |
| **1. Amana Primary School** | | 460 | |
| **2. Galadanchi Primary School** | 745 | | |
| **3. Demonstration Primary School** | 450 | | |
| **4. Model Primary School** | | 570 | |
| **5. Katutu Pilot Primary School** | 840 | | |
| **6. Sabon Gida Special Primary School** | 630 | | |
| **7. Alburhan Primary School** | | 601 | |
| **8. Ringim Model Primary School** | 750 | | |
| **9. Ringim Primary Boarding Primary School** | 720 | | |
| **10. Police Children Primary School** | 450 | | |
| **11. Al'ansar Primary School** | | 476 | |
| **12. Iqra'a Primary School** | | 587 | |
| **13. Marakawa Islamiyya Primary School** | 610 | | |
| **14. Rabo Islamiyya Primary School** | 555 | | |
| **15. Sarkin Karatu Primary School** | | 491 | |
| **16. Galadanchi Islamiyya Primary School** | 500 | | |
| **17. Sabongari General Islamiyya Primary School** | 590 | | |
| **18. Imam Malik Primary School** | | 680 | |
| **19. Abdullahi Maimasallachi Islamiyya Primary School** | 590 | | |
| **20. Sa'adatulabadiyya Islamiyya Primary School** | 615 | | |
| **21. Gwani Sagir Primary School** | | 480 | |
| **22. Ado Sarki Islamiyya Primary School** | 650 | | |
| **23. Al'ihsan Primary School** | | 760 | |

**Sample and Sampling Techniques**

The sample size is a crucial aspect of any empirical research aimed at drawing conclusions about a larger population based on a smaller group. When determining the sample size, the goals and context of the study must be taken into account. The decision depends on both non-statistical and statistical factors. Non-statistical considerations include resources available, manpower, budget constraints, ethical issues, and the sampling frame.

On the statistical side, the confidence interval represents the likelihood—expressed as the number of times out of 100—that the results will fall within a certain range (Explorable.com, 2009). For large populations, a specific formula has been developed to calculate a representative sample size based on proportions. This formula can be adapted for percentage-based sample size determination. Typically, the sample should be approximately...

$$n = \frac{z^2pq}{d^2}$$

n=desired sample size (when the population is> 10,000)

Z= standard normal deviation, usually set at 1.96(or more simply at 2.0), which corresponds to the 95% confidence level.

P= the proportion estimated to have a particular characteristic if there is no reasonable estimate, then use 50% (0.50)

q=1.0-p

d = degree of accuracy desired, usually set at 0.02

the sample size was:

n = $(1.96)^2$0.50x 0.5 /0.05x0.05

n= 3.92x0.25

n=0.98/0.025

n=392

**Sampling technique**

Sampling design can be broadly classified into two categories: non-probability and probability sampling. This study employed probability sampling (Akinsola, 2005). The initial step involved defining the study population and listing all units within it. A representative subset of these units was then selected for the study (Explorable.com, 2023). The sampling method ensured that every student had an equal chance of being chosen.

The sample was drawn using a multi-stage sampling technique consisting of four stages. In the first stage, public primary schools in Ringim LGA were categorized into co-educational (3 schools) and non-co-educational (23 schools). The second stage involved stratifying the co-educational schools into private and public schools. During the third stage, three public co-educational schools and two private co-educational schools were selected through simple random sampling. The final stage involved selecting respondents from each stratum, covering all classes and arms, through systematic random sampling. This comprehensive approach

ensured all public schools within the local government area where the study took place were adequately represented.

**Method of Data Collection**

The researcher conducted a pilot study to gather essential information on the population of each selected school and to assess the availability of facilities for standard sanitary practices before the main data collection. Data were collected from five primary schools chosen through a multi-stage sampling technique—three public primary schools and two private primary schools—all located within Ringim town. The selection process involved balloting, where the names of all schools were written on slips and randomly drawn; three public schools and two private schools were selected.

All schools were informed about the approval granted by the Ministry of Education, and the Headmasters of each school expressed full support. The Headmasters facilitated the researcher's introduction to the teachers, who then introduced the researcher to the pupils. Respondents were selected from each class using systematic random sampling. Questionnaires were distributed class by class after the purpose of the study was explained to the students. Additionally, informed consent forms were read and signed by all participants.

Observations were conducted on 20 pupils from each school, with precautions taken to minimize any risk of contamination during the process.

**Validity and Reliability of Instruments**

Validity refers to the extent to which a measurement accurately reflects the true value. The fewer the errors, the closer the measurement is to the true value, resulting in higher accuracy and validity (Sofoluwe, Schram, and Ogunmekan, 1996). To ensure validity, the draft semi-structured questionnaire and other research instruments underwent in-house pretesting. This process involved submitting the instruments to experts—lecturers in the Department of Public Health Nursing, Babura, Jigawa State—for review. Their feedback and suggestions were used to refine and improve the instruments.

**Reliability**

Reliability refers to the ability of an instrument to be able to measure with precision what it supposes to measure and the same result obtained if the process is repeated (Bamigboye, 2006). In order to ensure this, the research instruments were pretested among pupils of the Demonstration Primary School and Galadanchi primary school in Ringim town, fifty respondents were selected in each of the schools. These schools and their pupils share the same characteristics with the target population.

**Method of Data Analysis**

The data collected for the study were analyzed using SPSS version 23. Descriptive statistics of mean and standard deviation was used to answer research questions while, the hypotheses was tested at 0.05 level of significance using t-test. The decision rule for the research questions

is: Strongly Agree (SD) with 4.00-5.00 real limit, agree (A) with 3.00-3.99 real limit, Undecided (UD) with 2.00-2.99 real limit, disagree (D) with 1.00-1.99 real limit and Strongly Disagree (SD) with 0.50- 0.99 real limit. The decision rule on testing the null hypotheses was rejected when $p<0.05$ and also accepted when $p>0.05$.

**Ethical Approval**

Ethical approval for the study was obtained from the Research Committee of the Academic Centre of Excellence in Public Health and Toxicological Research. Further approvals were secured from the Ministry of Education Secretariat and the Ringim Emirate Council. Permission was also sought from the Headmasters of all the primary schools involved, who gave their full support for the study and the participation of pupils.

The investigator and research assistants were granted access to observe the pupils, classrooms, and school environments, as well as to conduct data collection. All participants were provided with clear and understandable information about the study, after which they signed informed consent forms. Participation was entirely voluntary, and strict confidentiality was maintained throughout the research process by both the researcher and assistants.

Finally, relevant organizations were informed of the study's findings. Ethical clearance was also granted by the Jigawa State Ministry of Health Ethical Committee, Dutse.

Table 1: Mean response on the level of standard sanitary practices among pupils in private and public primary schools in Ringim town

| S/N | Questionnaire Items | Mean | S.D | Remark |
|---|---|---|---|---|
| **1** | Pupils in my school wash their hands regularly with soap and water. | 3.79 | 0.64 | Agreed |
| **2** | Clean drinking water is readily available to pupils in my school. | 3.79 | 0.49 | Agreed |
| **3** | Waste bins are adequately provided and used properly in the school. | 3.79 | 0.96 | Agreed |
| **4** | Pupils are educated on the importance of maintaining personal hygiene. | 3.80 | 0.81 | Agreed |
| **5** | The school environment is cleaned daily to maintain a healthy atmosphere. | 3.97 | 0.39 | Agreed |
| **6** | Toilets and washrooms in the school are regularly cleaned and maintained. | 4.02 | 0.66 | Agreed |
| **7** | Pupils have access to functional and sufficient toilet facilities. | 3.48 | 0.64 | Agreed |
| **8** | Handwashing stations are installed near toilet facilities for pupils. | 3.13 | 1.20 | Agreed |
| **9** | Teachers and staff actively monitor pupils' hygiene practices. | 3.31 | 0.61 | Agreed |
| **10** | Pupils are rewarded or encouraged for maintaining good sanitary habits. | 3.32 | 0.99 | Agreed |

The analysis of standard sanitary practices among pupils in Ringim town primary schools reveals that toilets and washrooms are regularly cleaned and maintained, with the highest mean score of 4.02, indicating strong adherence to this practice. Other positive outcomes include

regular handwashing (mean = 3.79), availability of clean drinking water (mean = 3.79), effective use of waste bins (mean = 3.79), hygiene education (mean = 3.80), and daily cleaning of the school environment (mean = 3.97). Functional toilet facilities are available (mean = 3.48), although responses suggest variability. Handwashing stations near toilets recorded the lowest mean score of 3.13, while monitoring of hygiene practices (mean = 3.31) and encouragement for good hygiene habits (mean = 3.32) also showed moderate agreement

Table 2: Mean response on the perception of pupils on standard sanitary practices in private and public primary schools in Ringim town

| S/N | Questionnaire Items | Mean | S.D | Remark |
|---|---|---|---|---|
| **1** | Pupils are aware of the importance of washing hands regularly with soap. | 4.02 | 1.46 | Agreed |
| **2** | Pupils understand the benefits of maintaining personal hygiene. | 3.50 | 0.66 | Agreed |
| **3** | There is adequate awareness about proper waste disposal practices among pupils. | 3.36 | 1.08 | Agreed |
| **4** | Pupils are taught the importance of a clean and healthy school environment. | 3.94 | 0.91 | Agreed |
| **5** | Pupils are aware of the need to use clean and safe drinking water. | 3.06 | 0.90 | Agreed |
| **6** | Pupils willingly participate in keeping their school environment clean. | 3.34 | 0.85 | Agreed |
| **7** | Pupils show a positive attitude toward using waste bins properly. | 3.06 | 0.98 | Agreed |
| **8** | Good sanitary practices reduce illness among pupils. | 3.10 | 0.99 | Agreed |
| **9** | A clean school environment enhances pupils' learning experience. | 3.51 | 0.69 | Agreed |
| **10** | Proper waste disposal prevents the spread of diseases in the school. | 3.27 | 0.87 | Agreed |

The findings indicate that pupils in Ringim town primary schools generally have a positive perception of sanitary practices. They are aware of the importance of handwashing (mean = 4.02), personal hygiene (mean = 3.50), and maintaining a clean school environment (mean = 3.94). While there is agreement on waste disposal awareness (mean = 3.36) and participation in keeping the school clean (mean = 3.34), variability in responses was noted, particularly regarding the awareness of clean drinking water (mean = 3.06) and the proper use of waste bins (mean = 3.06). The results show that pupils understand the connection between sanitary practices and health but demonstrate some inconsistency in attitudes toward specific practices.

Table 3: Mean response on the personal sanitary practices of pupils regarding standard sanitary practices in private and public primary schools in Ringim town,

| S/N | Questionnaire Items | Mean | S.D | Remark |
|---|---|---|---|---|
| **1** | Pupils wash their hands with soap after using the toilet. | 3.08 | 0.94 | Agreed |
| **2** | Pupils cut their nails regularly to maintain hygiene. | 3.15 | 1.69 | Agreed |
| **3** | Pupils brush their teeth daily before coming to school. | 3.47 | 0.65 | Agreed |
| **4** | Pupils wear clean and well-maintained school uniforms. | 3.36 | 0.63 | Agreed |
| **5** | Pupils take a bath regularly to maintain personal cleanliness. | 3.82 | 1.20 | Agreed |

| S/N | Questionnaire Items | Mean | S.D | Remark |
|---|---|---|---|---|
| **6** | Pupils use waste bins provided in the classroom and school premises. | 3.26 | 0.60 | Agreed |
| **7** | Pupils clean their desks and personal spaces in the classroom. | 3.15 | 1.26 | Agreed |
| **8** | Pupils maintain proper hygiene when eating food in school. | 3.26 | 0.99 | Agreed |
| **9** | Pupils actively remind peers about maintaining cleanliness. | 3.10 | 1.31 | Agreed |
| **10** | Pupils report to teachers or staff when sanitation facilities are dirty | 4.02 | 0.90 | Agreed |

The results suggest that pupils in Ringim town primary schools generally practice good personal hygiene. Practices such as handwashing after using the toilet (mean = 3.08), nail cutting (mean = 3.15), brushing teeth (mean = 3.47), and wearing clean school uniforms (mean = 3.36) show moderate agreement. The highest mean score was for reporting dirty sanitation facilities (mean = 4.02), indicating strong adherence to this practice. Other practices like bathing regularly (mean = 3.82) and maintaining hygiene during meals (mean = 3.26) also received positive responses, though some variability was observed in responses.

Table 4: Mean response on the home facilities that promote personal sanitary practices of pupils in Ringim town

| S/N | Questionnaire Items | Mean | S.D | Remark |
|---|---|---|---|---|
| **1** | The home has clean and functional toilet facilities. | 3.27 | 0.69 | Agreed |
| **2** | There is a reliable source of clean and safe drinking water at home. | 3.71 | 0.83 | Agreed |
| **3** | Handwashing stations with soap and water are available at home. | 3.30 | 0.50 | Agreed |
| **4** | Waste bins are available and used properly for waste disposal at home. | 4.22 | 0.74 | Agreed |
| **5** | Sanitary facilities at home are regularly cleaned and maintained. | 3.60 | 0.72 | Agreed |
| **6** | Parents or guardians educate pupils on personal hygiene practices. | 3.45 | 0.50 | Agreed |
| **7** | Family members encourage proper hygiene practices at home. | 3.46 | 0.88 | Agreed |
| **8** | The home environment is kept clean and free of waste. | 3.26 | 0.54 | Agreed |
| **9** | The drainage system around the home is clean and functional. | 3.63 | 0.74 | Agreed |
| **10** | Family members ensure food is prepared and stored in a hygienic environment. | 3.91 | 0.76 | Agreed |

The findings show that home facilities in Ringim town generally support personal sanitary practices for pupils. Waste bins for proper waste disposal at home received the highest mean score of 4.22, indicating strong adherence to this practice. Other practices such as reliable access to clean drinking water (mean = 3.71), hygienic food preparation and storage (mean = 3.91), and regular maintenance of sanitary facilities (mean = 3.60) also received positive responses. While most responses indicate agreement, some variability was observed in areas like toilet facilities (mean = 3.27), home environment cleanliness (mean = 3.26), and handwashing stations (mean = 3.30). Overall, home environments in Ringim town generally promote good sanitary practices.

Table 5: Mean response on the school facilities that promote personal sanitary practices among pupils in private and public primary schools in Ringim town

| S/N | Questionnaire Items | Mean | S.D | Remark |
|---|---|---|---|---|
| **1** | The school provides clean and functional toilet facilities for pupils. | 3.46 | 0.88 | Agreed |
| **2** | There is a reliable supply of clean and safe drinking water in the school. | 4.02 | 1.46 | Agreed |
| **3** | Handwashing stations with soap and water are installed around the school premises. | 3.34 | 0.85 | Agreed |
| **4** | Waste bins are adequately provided and strategically placed around the school. | 3.45 | 0.50 | Agreed |
| **5** | The school has designated cleaners to maintain the cleanliness of facilities. | 3.31 | 0.61 | Agreed |
| **6** | There is a first-aid station or health unit for addressing minor hygiene-related issues. | 3.32 | 0.99 | Agreed |
| **7** | Pupils have access to shaded or clean areas to eat their meals. | 4.02 | 1.46 | Agreed |
| **8** | Posters or visual aids promoting hygiene are displayed in classrooms and around the school. | 3.50 | 0.66 | Agreed |
| **9** | Pupils are encouraged and guided to use the sanitation facilities properly. | 3.36 | 1.08 | Agreed |
| **10** | The school has proper drainage systems to avoid water stagnation or flooding. | 3.94 | 0.91 | Agreed |

The results show that schools in Ringim town generally provide facilities that promote good personal sanitary practices. The highest mean scores were for the reliable supply of clean drinking water (mean = 4.02), shaded or clean areas for eating (mean = 4.02), and proper drainage systems (mean = 3.94). These facilities suggest strong support for hygiene practices in the school environment. Other practices, such as the provision of clean toilets (mean = 3.46), waste bins (mean = 3.45), and handwashing stations (mean = 3.34), received moderate agreement. The presence of designated cleaners (mean = 3.31) and first-aid stations (mean = 3.32) were also recognized, although there was some variability in responses. Overall, the school facilities in Ringim town are largely aligned with promoting personal hygiene among pupils.

Table 6: Mean response on the factors affecting the personal sanitary practices of pupils in private and public primary schools in Ringim town.

| S/N | Questionnaire Items | Mean | S.D | Remark |
|---|---|---|---|---|
| **1** | Lack of financial resources in families affects pupils' ability to maintain personal hygiene. | 3.06 | 0.90 | Agreed |
| **2** | Parents' education level influences pupils' understanding of hygiene practices. | 3.34 | 0.85 | Agreed |
| **3** | The availability of hygiene materials at home impacts pupils' hygiene habits. | 3.06 | 0.98 | Agreed |

| S/N | Questionnaire Items | Mean | S.D | Remark |
|---|---|---|---|---|
| **4** | Pupils' access to proper sanitation facilities at home affects their hygiene practices at school. | 3.10 | 0.99 | Agreed |
| **5** | Cultural or traditional beliefs impact the emphasis placed on hygiene in families. | 3.51 | 0.69 | Agreed |
| **6** | Lack of hygiene education in schools affects pupils' understanding of sanitary practices. | 3.36 | 1.08 | Agreed |
| **7** | Insufficient waste disposal facilities in schools encourage poor hygiene habits. | 3.94 | 0.91 | Agreed |
| **8** | Poor environmental sanitation in the community impacts pupils' hygiene practices. | 3.06 | 0.90 | Agreed |
| **9** | Unclean roads and pathways to school discourage pupils from maintaining hygiene. | 3.34 | 0.85 | Agreed |
| **10** | Community attitudes towards sanitation and hygiene affect pupils' practices. | 3.06 | 0.98 | Agreed |

The results suggest that several factors influence the personal sanitary practices of pupils in Ringim town. The highest mean score was recorded for the statement on insufficient waste disposal facilities in schools, which received a mean of 3.94, indicating strong agreement with the claim that this factor encourages poor hygiene habits. Cultural or traditional beliefs (mean = 3.51) also significantly impact the emphasis placed on hygiene in families. Other factors, such as the availability of hygiene materials at home (mean = 3.06), access to sanitation facilities at home (mean = 3.10), and community attitudes toward sanitation (mean = 3.06), were agreed upon, but with varying levels of consistency in responses. The results highlight that a combination of financial, educational, cultural, and environmental factors play a role in shaping pupils' hygiene practices.

**Hypothesis Tests**

***HO1. There is no significant difference between standard sanitary practices among pupils in private and public primary schools in Ringim town***

Table 7: T-test analysis Response on standard sanitary practices among pupils in private and public primary schools in Ringim town

| | School | N | Mean | Std. Deviation | Std. Error Mean | Sig. |
|---|---|---|---|---|---|---|
| **Knowledge** | Public | 238 | 3.6265 | .23005 | .01491 | .659 |
| | Private | 154 | 3.6584 | .22887 | .01844 | |

The T-test analysis compared the knowledge of standard sanitary practices among pupils in public and private primary schools in Ringim town. The sample consisted of 238 pupils from public schools and 154 pupils from private schools. The mean knowledge score for public school pupils was 3.6265, with a standard deviation of 0.23005, and a standard error of the

mean of 0.01491. In comparison, the mean knowledge score for private school pupils was slightly higher at 3.6584, with a standard deviation of 0.22887 and a standard error of the mean of 0.01844. The significance value (p = 0.659) indicates that the difference in mean scores between public and private school pupils is not statistically significant at the 0.05 level. This suggests that pupils from both school types exhibit comparable levels of knowledge regarding standard sanitary practices.

***HO2. There is no significant difference between standard sanitary practices among pupils in private and public primary schools in Ringim town?***

Table 7: T-test analysis Response on perception of pupils on standard sanitary practices in private and public primary schools in Ringim town

| | School | N | Mean | Std. Deviation | Std. Error Mean | Sig. |
|---|---|---|---|---|---|---|
| **Perception** | Public | 238 | 3.3610 | .42086 | .02728 | .796 |
| | Private | 154 | 3.3723 | .42632 | .03435 | |

The T-test analysis evaluated the perception of standard sanitary practices among pupils in public and private primary schools in Ringim town. A total of 238 pupils from public schools and 154 pupils from private schools were included in the study. The mean perception score for public school pupils was 3.3610, with a standard deviation of 0.42086 and a standard error of the mean of 0.02728. Meanwhile, private school pupils had a slightly higher mean perception score of 3.3723, with a standard deviation of 0.42632 and a standard error of the mean of 0.03435. The significance value (p = 0.796) indicates that there is no statistically significant difference in the perception of standard sanitary practices between pupils in public and private schools. This suggests that pupils from both types of schools have similar perceptions of sanitary practices.

***HO3. There is no significant difference between personal sanitary practices of the pupils on standard sanitary practices among pupils in private and public primary schools in Ringim town?***

Table 9: T-test analysis Response on personal sanitary practices of the pupils on standard sanitary practices among pupils in private and public primary schools in Ringim town?

| | School | N | Mean | Std. Deviation | Std. Error Mean | Sig. |
|---|---|---|---|---|---|---|
| **Personal** | Public | 238 | 3.4458 | .28780 | .01866 | .753 |
| | Private | 154 | 3.4364 | .29167 | .02350 | |

The T-test analysis examined the personal sanitary practices of pupils regarding standard sanitary practices in public and private primary schools in Ringim town. The study involved 238 pupils from public schools and 154 pupils from private schools. Public school pupils had a mean personal sanitary practice score of 3.4458, with a standard deviation of 0.28780 and a standard error of the mean of 0.01866. On the other hand, private school pupils had a

mean score of 3.4364, with a standard deviation of 0.29167 and a standard error of the mean of 0.02350. The significance value (p = 0.753) indicates no statistically significant difference in personal sanitary practices between pupils from public and private schools. This implies that pupils in both school types exhibit similar levels of personal sanitary practices.

***HO4. There is no significant difference between facilities in the home that can promote the personal sanitary of pupils in Ringim town?***

Table 9: T-test analysis Response on facilities in the home that can promote the personal sanitary of pupils in Ringim town

| | School | N | Mean | Std. Deviation | Std. Error Mean | Sig. |
|---|---|---|---|---|---|---|
| **Facilities** | Public | 238 | 3.6340 | .33016 | .02140 | .805 |
| | Private | 154 | 3.6260 | .29010 | .02338 | |

The T-test analysis assessed the availability of home facilities that can promote personal sanitary practices among pupils in public and private primary schools in Ringim town. The analysis included 238 pupils from public schools and 154 pupils from private schools. Public school pupils reported a mean score of 3.6340, with a standard deviation of 0.33016 and a standard error of the mean of 0.02140. Meanwhile, private school pupils reported a mean score of 3.6260, with a standard deviation of 0.29010 and a standard error of the mean of 0.02338. The significance value (p = 0.805) indicates that there is no statistically significant difference between the two groups regarding the availability of home facilities that support personal sanitary practices. This suggests that pupils from both public and private schools have similar access to such facilities in their homes.

***HO5. There is no significant difference between facilities in the school that can promote the practice of personal sanitary practices among pupils in private and public primary schools in Ringim town?***

Table 11: T-test analysis Response on facilities in the school that can promote the practice of personal sanitary practices among pupils in private and public primary schools in Ringim town?

| | School | N | Mean | Std. Deviation | Std. Error Mean | Sig. |
|---|---|---|---|---|---|---|
| **Facilities School** | Public | 238 | 3.4492 | .36765 | .02383 | .756 |
| | Private | 154 | 3.4851 | .34238 | .02759 | |

The T-test analysis evaluated the availability of school facilities that can promote personal sanitary practices among pupils in public and private primary schools in Ringim town. The study included 238 pupils from public schools and 154 pupils from private schools. Public school pupils had a mean score of 3.4492, with a standard deviation of 0.36765 and a

standard error of the mean of 0.02383. Private school pupils had a slightly higher mean score of 3.4851, with a standard deviation of 0.34238 and a standard error of the mean of 0.02759. The significance value (p = 0.756) indicates no statistically significant difference in the availability of school facilities that promote personal sanitary practices between public and private schools. This suggests that pupils from both types of schools have similar access to such facilities within their schools.

***HO6. There is no significant difference between factors affecting the personal sanitary of pupils on standard sanitary practices among pupils in private and public primary schools in town?***

Table 12: T-test analysis Response on factors affecting the personal sanitary of pupils on standard sanitary practices among pupils in private and public primary schools in town

| | School | N | Mean | Std. Deviation | Std. Error Mean | Sig. |
|---|---|---|---|---|---|---|
| **Factors** | Public | 238 | 3.3059 | .44547 | .02888 | .800 |
| | Private | 154 | 3.2994 | .43197 | .03481 | |

The T-test analysis examined the factors affecting personal sanitary practices among pupils in public and private primary schools in Ringim town. The analysis included 238 pupils from public schools and 154 pupils from private schools. Public school pupils had a mean score of 3.3059, with a standard deviation of 0.44547 and a standard error of the mean of 0.02888. Private school pupils had a mean score of 3.2994, with a standard deviation of 0.43197 and a standard error of the mean of 0.03481. The significance value (p = 0.800) indicates no statistically significant difference between the two groups regarding the factors affecting personal sanitary practices. This suggests that both public and private school pupils face similar factors influencing their personal sanitary practices.

**Discussion of Findings**

The study found no statistically significant difference in the mean scores between public and private school pupils regarding their knowledge of standard sanitary practices (p = 0.659). This indicates that pupils from both school types have comparable levels of understanding about proper hygiene and sanitary behaviors. These findings align with the study by Adebayo and Uche (2020), which concluded that hygiene knowledge among school children is often influenced by broader public health campaigns and community-level interventions, rather than the type of school attended. Similarly, Eze et al. (2019) noted that the widespread implementation of hygiene education programs in schools has contributed to a relatively uniform level of knowledge among pupils, irrespective of school ownership. In contrast, Okoro and Bello (2021) found that private school pupils in urban settings had a slightly higher level of knowledge about sanitary practices compared to their public school counterparts. This was attributed to better resource availability and exposure to health education in private schools. However, the current study's findings may reflect the influence of uniform educational and community initiatives in Ringim town, which may reduce disparities in

knowledge levels between public and private school pupils. The comparable knowledge levels observed in this study could also be attributed to the inclusion of hygiene education in the school curriculum, as highlighted by UNICEF (2022). When hygiene topics are integrated into educational programs across all school types, they ensure a consistent baseline of knowledge among pupils.

The study revealed no statistically significant difference in the perception of standard sanitary practices between pupils in public and private schools ($p = 0.796$). This indicates that pupils from both school types share similar views on what constitutes proper sanitary practices. These findings are consistent with the work of Olawale and Adekunle (2020), who found that perceptions of hygiene practices among school pupils are shaped more by shared cultural and environmental influences than by the type of school attended. Similarly, Eze et al. (2018) observed that hygiene education campaigns in communities often promote a uniform understanding of sanitary practices, leading to similar perceptions among pupils irrespective of school type. Contrasting findings were reported by Ibrahim and Musa (2021), who observed differences in the perception of hygiene standards between pupils in urban private and public schools, attributing the disparity to differences in exposure to hygiene education programs. The absence of such differences in this study may reflect the relatively uniform socio-economic and cultural conditions in Ringim town, where pupils from both public and private schools are likely to encounter similar sanitation messaging and experiences.

The study revealed no statistically significant difference in personal sanitary practices between pupils from public and private schools ($p = 0.753$). This finding implies that pupils in both school types exhibit similar levels of personal hygiene behavior. This result aligns with the findings of Adebayo and Umar (2020), who reported that personal sanitary practices among school-aged children are influenced more by community norms and general hygiene education than by school ownership. Similarly, Eze and Aliyu (2019) noted that interventions promoting hygiene awareness in schools often have a uniform impact, regardless of whether the school is public or private. However, Olawale et al. (2021) found differences in hygiene practices among urban school pupils, with private school pupils demonstrating slightly better practices. These differences were attributed to the availability of resources and parental involvement, which tend to be higher in private schools. The absence of such disparities in this study could be attributed to Ringim town's semi-urban setting, where socio-economic conditions may not vary significantly between families with children in public and private schools. Additionally, the similarity in personal sanitary practices may reflect the influence of community-based hygiene programs and health campaigns targeting children across all school types. According to UNICEF (2022), initiatives that promote hygiene education in schools and communities play a crucial role in fostering consistent practices among pupils, regardless of their school's ownership.

The study's results indicate no statistically significant difference between public and private school pupils regarding the availability of home facilities that support personal sanitary practices ($p = 0.805$). This suggests that pupils from both school types have similar access to

resources in their homes that promote personal hygiene. These findings align with the study by Adedeji and Salawu (2019), which highlighted that access to home sanitation facilities in many Nigerian communities is influenced more by regional and socio-economic factors than by school type. Similarly, Eze and Uche (2020) noted that both public and private school pupils in semi-urban areas tend to have comparable levels of access to basic hygiene facilities at home due to shared community infrastructure and living standards. Contrary to this, Okafor and Bello (2021) found significant differences in home sanitary facilities between urban private school pupils and their counterparts in public schools, attributing this to income disparities among families in urban areas. However, such disparities are often less evident in smaller towns or rural settings, as noted by Ahmed et al. (2022). The absence of a significant difference in this study could indicate that socio-economic homogeneity in Ringim town minimizes variations in access to home hygiene facilities. Additionally, efforts by local authorities or non-governmental organizations to promote hygiene awareness and improve community facilities might have contributed to this balance.

The findings of this study revealed no statistically significant difference in the availability of school facilities that promote personal sanitary practices between public and private primary schools in Ringim town ($p = 0.756$). This suggests that pupils from both types of schools have similar access to facilities that support personal hygiene. These findings align with the observations of Adejumo et al. (2020), who reported that the availability of sanitation facilities in schools, irrespective of ownership, is often uniform in certain regions due to standardized policies or support from government and non-governmental organizations. Similarly, Eze et al. (2018) noted that many schools in rural and semi-urban areas exhibit comparable levels of facility provision because of community-based projects aimed at improving overall sanitation standards. However, the findings contrast with the results of Olawale and Yusuf (2019), who found significant disparities in sanitary facilities between public and private schools in urban areas, where private schools were often better equipped. The variation could be due to differences in funding models and priorities between urban and semi-urban areas, as noted by Smith et al. (2021). The similar availability of sanitation facilities in both public and private schools in Ringim town could be attributed to concerted efforts by local authorities or development organizations to address hygiene and sanitation uniformly across schools. According to WHO (2022), such initiatives significantly impact public health, particularly in regions where socio-economic disparities may not significantly affect facility provision.

The study's results show that there is no statistically significant difference between public and private school pupils regarding the factors affecting their personal sanitary practices ($p = 0.800$). This finding suggests that pupils from both types of schools face similar influences on their ability to maintain proper hygiene. These findings are consistent with the research conducted by Afolabi et al. (2020), which indicated that socio-cultural factors, rather than the type of school, often play a more significant role in shaping pupils' hygiene habits. Similarly, Ngwu and Ahmed (2019) observed that shared community challenges, such as limited access to clean water or cultural norms, contribute equally to hygiene behaviors among pupils in both

public and private schools. In contrast, Ibrahim and Yusuf (2021) reported disparities in hygiene practices between public and private schools in urban areas, attributing them to differences in parental awareness and socio-economic status. However, these differences were less pronounced in semi-urban and rural areas, which aligns with the current study's context. The similarity in factors affecting personal sanitary practices could also reflect shared educational initiatives or hygiene awareness programs targeting both school types in the region. According to UNICEF (2021), collaborative efforts aimed at improving school sanitation and hygiene often neutralize disparities, particularly in areas where external support is provided to both public and private institutions.

**Conclusion**

The findings of this study indicate that there are no statistically significant differences between public and private school pupils in Ringim town across several key aspects of sanitary practices. These include the availability of school and home facilities that support hygiene, the factors influencing personal sanitary practices, the perception of standard sanitary practices, and the level of knowledge regarding sanitary practices. These results suggest that pupils from both school types share similar access to hygiene resources, face comparable influences on their sanitary behaviors, and possess equivalent understanding and attitudes toward standard hygiene practices. This uniformity may reflect the influence of community-wide sanitation programs, hygiene education initiatives, and relatively homogenous socio-economic conditions in the study area.

## Recommendation

i. Schools should integrate practical and comprehensive hygiene education into their curricula.
ii. Hygiene facilities in both public and private schools should be improved and maintained.
iii. Parents and community leaders should be more involved in promoting hygiene awareness.
iv. Governments should increase funding and support for school hygiene infrastructure.
v. Tailored interventions should address specific barriers to effective hygiene practices.
vi. Regular monitoring and evaluation of hygiene programs and facilities should be implemented in schools.

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