



(RESEARCH ARTICLE)



Contribution of stakeholders from the Dakoussa pre-school and primary education inspectorate school to the promotion of hygiene and sanitation in Niger

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Abstract

The aim of this research is to evaluate the contribution of local actors to the promotion of hygiene and sanitation within the IEPP of Dakoussa, Takiéta department - Niger. The objective is to identify the roles that different stakeholders in preschool and primary schools play in promoting hygiene and sanitation. The approach used for data collection is both qualitative and quantitative. The sample consists of 19 teachers from the Middle Course classes, 11 school directors, 11 Decentralized Management Committees of secondary institutions, 111 school governments from 11 schools, and students from the Middle Course, along with 2 pedagogical advisors, 1 infrastructure and school health officer, and 1 departmental hygiene and sanitation technician. The results show that teachers, the CGDS, and students play an important role in promoting hygiene and sanitation in the schools of the IEPP of Dakoussa. However, these results also highlight challenges. The lack of adequate sanitation infrastructure, the persistence of open defecation, insufficient follow-up on actions, a lack of training, and the continuation of certain traditional practices are obstacles that need to be overcome. To strengthen the commitment of local actors, it is necessary to implement targeted actions such as ongoing teacher training, community mobilization, and the

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1. Introduction

Access to a healthy and hygienic school environment is a fundamental right for every child. However, in Niger, as in many developing countries, this issue remains a major challenge. Schools, as places of life and learning, are particularly vulnerable to hygiene and sanitation problems, which can jeopardize the health of students and educational staff, and consequently, their academic success. The international community has recognized the crucial importance of hygiene and sanitation in schools. The Sustainable Development Goals (SDGs), particularly SDG 4a and SDG 6.2, emphasize the need to build safe, accessible schools free from health risks. In Niger, the government has committed to improving hygiene and sanitation conditions in educational institutions, placing this issue at the heart of its public policies.

While progress has been made, notably with the establishment of the Directorate for Support in School Management (DAGE) and the Division of School Health and Environmental Education (SS/EE), the situation remains mixed. Limited financial resources, degraded infrastructure, and sometimes inadequate hygiene practices pose significant obstacles to overcome. It is in this context that our research focuses on the IEPP of Dakoussa. Our objective is to analyze the contribution of local actors to the promotion of hygiene and sanitation within this institution. This study is structured into five chapters: the problem statement, the theoretical framework, the methodology, the results, and the discussion.

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1.1. Research Problem

Improving hygiene and sanitation in schools is a global priority enshrined in the Sustainable Development Goals (SDGs). In Niger, the government has committed to achieving this goal through national policies and programs such as the Sectoral Water, Hygiene, and Sanitation Program (PROSEHA). Decentralization has transferred responsibilities for school hygiene to local municipalities, which, with support from partners, implement projects aimed at improving infrastructure and raising awareness. Initiatives have been undertaken in several regions of Niger, such as in Niamey, where a project to upgrade secondary schools has led to the construction of new latrines and training for school stakeholders (JICA, 2023). Similarly, in Zinder, a program has resulted in the construction of numerous latrines and community awareness campaigns (pS-Eau, 2019). These projects demonstrate the political will and commitment of various actors to improve school hygiene. However, despite these efforts, problems persist in many schools, particularly regarding the maintenance of facilities and the adoption of hygienic practices by students. This state of hygiene in schools is both current and concerning, implicating all education stakeholders. This is why we find it necessary to assess the participation of local actors in the preschools and primary schools of Dakoussa in promoting hygiene and sanitation at the IEPP of Dakoussa.

2. Literature Review

Studies on hygiene and sanitation in schools, particularly in the Central African Republic, present a worrying picture. Serge-Hubert (2013) highlights issues of unsanitary conditions, lack of infrastructure, and inadequate hygienic practices in schools in the 8th arrondissement of Bangui. UNICEF (1998) supports this by emphasizing the importance of active community involvement for the success of any school sanitation program. The organization advocates for the creation of school committees that include students, teachers, and parents. The World Health Organization (WHO, 2010) stresses the need for hygiene education from an early age, underscoring the necessity of combining adequate sanitation facilities with educational programs to promote good practices. The WHO has established specific standards for hygiene and sanitation in schools. Experiences from UNICEF/WASH-Mali (2014-2015) and the Peace Corps in Benin (2014) have demonstrated the effectiveness of participatory approaches, which actively involve school communities and foster sustainable behavior change regarding hygiene.

In Niger, efforts to promote hygiene and sanitation in schools are part of an ambitious national dynamic. The SOPHAB (2014-2018) was a pioneer in adopting a community-based approach, Community-Led Total Sanitation (CLTS), to inspire large-scale behavior change. This initiative highlighted the central role of communities in managing their own sanitation issues. Concurrently, the Ministry of National Education has developed educational tools to raise student awareness about hygiene issues. Specific projects, such as those led by ACF and ORK in 2014, have complemented these efforts by producing educational materials focused on key themes like feces management and handwashing. The National Strategy for Water, Hygiene, and Sanitation in Niger's schools (2023) marks a turning point by setting ambitious goals: to achieve 75% of schools with access to drinking water and basic sanitation services and to train all teachers on good practices in water, hygiene, and sanitation (WASH).

Initiatives aimed at improving hygiene and sanitation in Nigerien schools are numerous and complementary, relying on a combination of participatory approaches, education, and infrastructure development. The School-Led Total Sanitation (SLTS) approach promoted by SOPHAB (2014-2018) has proven particularly effective. By actively involving students and their communities, this approach has allowed for the sustainable establishment of new hygiene practices, as evidenced by results obtained in Zinder (pS-Eau, 2019). At the same time, improving sanitation infrastructure is an essential lever. JICA (2023) emphasizes the importance of constructing latrines and installing potable water supply systems in schools. The project conducted in Niamey demonstrates the positive impact of such a comprehensive approach, combining material interventions with awareness-raising. Research by SOULEY Nana-Aicha (2022) highlights the crucial role of local actors, including teachers, students, and communities, in promoting hygiene. However, the study also points out limitations related to resource scarcity and social representations.

3. Methodology

For this study, we adopted a mixed methodological approach, combining quantitative and qualitative methods. The quantitative analysis of these data allowed us to assess the extent and frequency of hygiene and sanitation practices within the IEPP of Dakoussa. Semi-structured interviews were conducted with pedagogical supervisors, the school infrastructure and health officer, and the hygiene and sanitation technician. These interviews deepened our understanding of contextual factors, stakeholder perceptions, and relational dynamics influencing hygiene practices. Our sample consists of 156 school actors surveyed, including 19 teachers from Middle Course classes, 11 directors, 11 CGDES members, 111 school governments from 11 schools, students from Middle Course classes, 2 pedagogical

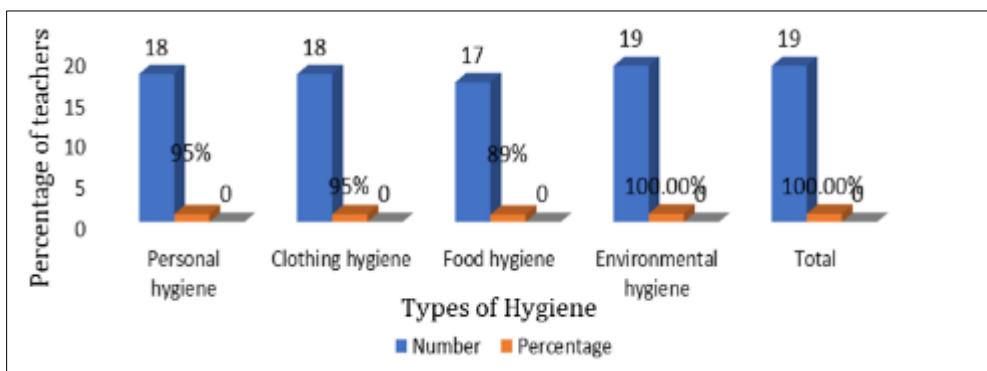
advisors, 1 infrastructure and school health officer, and 1 departmental hygiene and sanitation technician. The sampling technique used is purposive sampling. The quantitative data from this study were processed using Excel software, while qualitative data were subjected to content analysis.

4. Results of the Survey

4.1. Participation of Teachers in Promoting Hygiene and Sanitation at the IEPP of Dakoussa

4.1.1. Conducting Hygiene and Sanitation Education Classes

Education on hygiene and sanitation in primary schools is the responsibility of the teacher. To determine whether the teachers of the CM classes regularly provide lessons related to hygiene, we asked them to indicate the areas covered in their hygiene and sanitation courses. The response to this question can be found in the figure below.



Source: Field Survey Results, June 2024

Figure 1 Animation of Hygiene and Sanitation Education Classes –

The figure above indicates that 95% of surveyed teachers claim to present lessons on personal and clothing hygiene in their classes ; 89% of teachers provide lessons on food hygiene, and all teachers (100%) teach environmental hygiene lessons. Thus, nearly all teachers conduct classes in the areas of personal, clothing, and food hygiene, and all surveyed teachers address environmental hygiene. This suggests that we would expect students in the CM classes taught by these teachers to significantly develop skills in various hygiene areas within the school environment.

4.1.2. Monitoring of Cleaning Facilities

Teachers, regardless of their roles, ensure that the facilities are cleaned according to a predetermined frequency in the cleaning schedule. Both the teachers and school directors surveyed confirm the existence of a cleaning schedule that they establish for all schools and classes at the start of the school year.

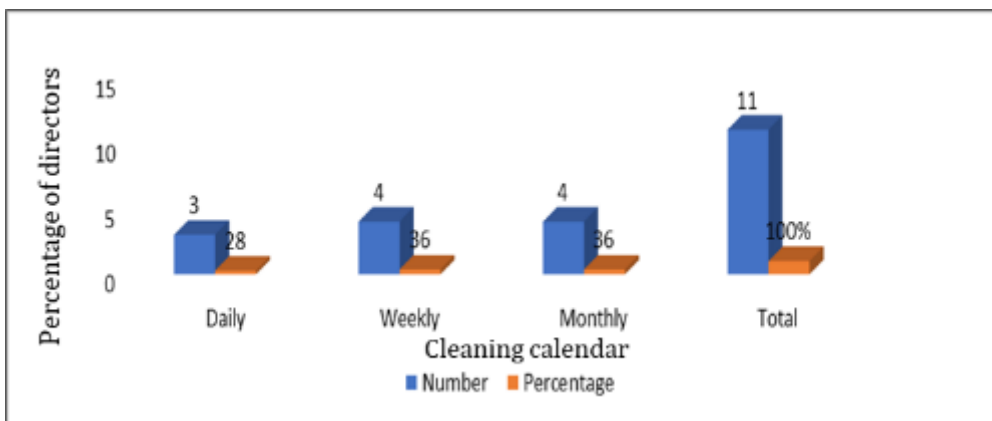
Table 1 Frequency of Classroom Cleaning by Students

Frequency of Classroom Cleaning by Students	Number	Percentage
Every day	18	95%
Every week	1	5%
Total	19	100%

Source: Field Survey Results, June 2024

Reading the table above reveals that 95% of teachers assert that they ensure students clean their classrooms every day, while 5% of surveyed teachers state that they ensure their classrooms are cleaned weekly by students. This indicates that all classrooms are cleaned daily by students, thanks to the guidance and monitoring of the teachers. Furthermore, all school directors surveyed confirm that they ensure at least one cleanliness campaign occurs each month in their institutions. Thus, according to the figure below, the frequency of the school cleaning schedule varies from one school to another.

4.1.3. Existence of a School Cleaning Schedule



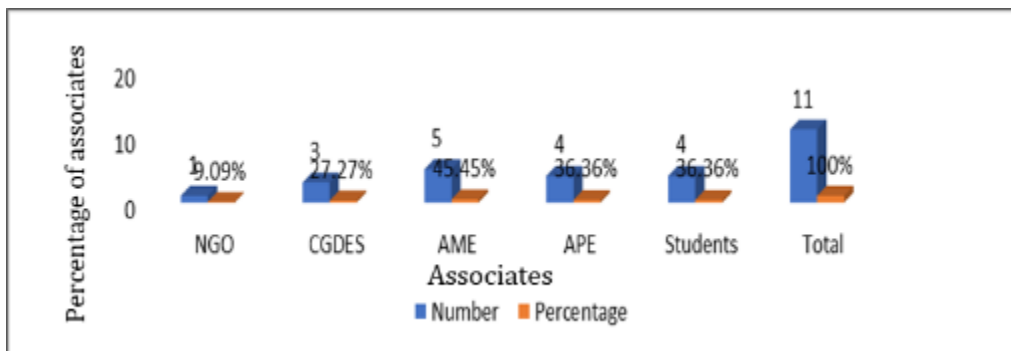
Source: Field Survey Results, June 2024

Figure 2 Existence of a School Cleaning Schedule

Indeed, the figure above indicates that 28% of the directors claim to have a daily cleaning schedule in their schools; 36% of the directors have a weekly cleaning schedule in their schools, and the same percentage of directors claim to have a monthly cleaning schedule in their schools. This would allow these activities to be carried out on time.

4.1.4. Provision and Mobilization of Sanitation Materials

Teachers, particularly school directors, play an important role in the provision and mobilization of sanitation materials. In doing so, they encourage various partners and contributors to support the school in implementing its hygiene and sanitation activities.



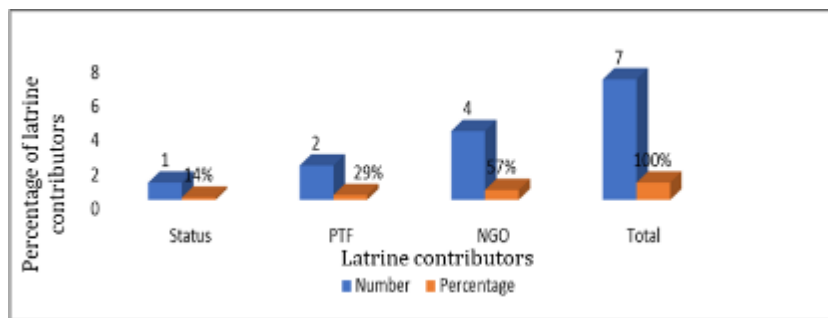
Source: Field Survey Results, June 2024

Figure 3 Contributors of Sanitation Materials

The figure above indicates that the directors mobilize various collaborators who provide them with sanitation materials, including hygiene and sanitation consumables. Among these contributors, we observe that the AME is involved in 45% of schools, the APE and the students in 36% of schools each, the CGDES in 27% of schools, and NGOs in only 9% of schools.

Monitoring the Correct Use of Latrines by Students

It is noteworthy that among the 11 targeted schools, 7 (or 64%) have latrines, while the remaining 4 (or 36%) do not. Therefore, schools with latrines provide their students with the opportunity to avoid defecating in the open.



(Source: Field Survey Results, June 2024)

Figure 4 Contributors of Latrines

The figure above indicates that the latrines in these schools were provided by NGOs (57%), technical and financial partners (29%), and the state (14%). Although teachers ensure that the latrines are used correctly by their students, it has been reported that at least 50% of students do not know how to use them properly, according to the responses from school directors with latrines.

4.1.5. Planning Hygiene and Sanitation Promotion Activities in Schools within the PA/CGDES

All surveyed CGDES (Comités de Gestion des Établissements Scolaires) state that they have an action plan. This means that the activities of CGDES in schools are scheduled, which aligns with transparent management practices, fostering strong support from others.

Table 2 Planning of Hygiene and Sanitation Promotion Activities

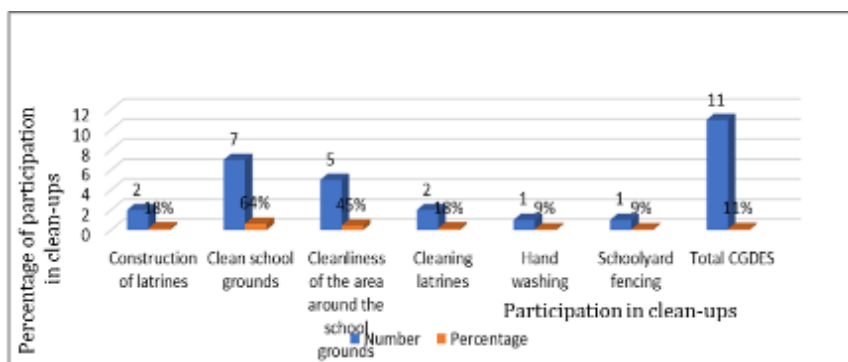
Planning of Hygiene and Sanitation Promotion Activities in Schools within the PA/CGDES	NUMBER	Percentage
Yes	11	100%
No	0	0%
Total	11	100%

Source: Field Survey Results, June 2024

The table above indicates that in these action plans, all CGDES affirm that they plan hygiene and sanitation promotion activities. This means that the list of these promotion activities is expected to be available, along with the identities of those who would contribute to their implementation. This also supports the transparent management of hygiene and sanitation promotion activities. It is the best way to convince the audience to participate. It also serves as a means to provide an objective assessment of the efforts of CGDES in promoting hygiene and sanitation in schools.

4.1.6. Organization of Hygiene and Sanitation Promotion Activities

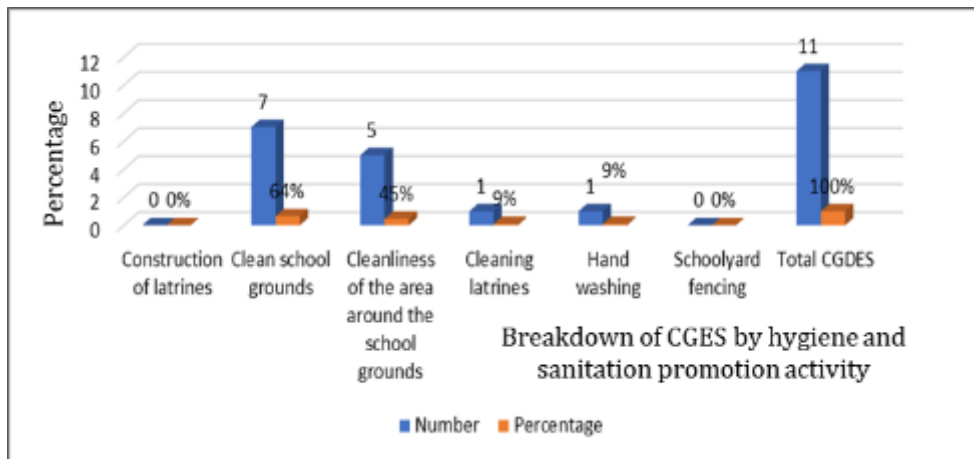
The CGDES of the target schools prepare and organize various types of activities related to the promotion of hygiene and sanitation.



Source: Field Survey Results, June 2024

Figure 5 Types of Hygiene and Sanitation Promotion Activities Planned in the Action Plan

The figure above indicates that the planned activities include the cleanliness of the school yard for 64% of the surveyed CGDES; the cleanliness of the surrounding area of the school yard for 45% of the surveyed CGDES; the construction and cleaning of latrines for 18% of the surveyed CGDES; and handwashing and fencing of the yard for 9% of the surveyed CGDES.



Source: Field Survey Results, June 2024

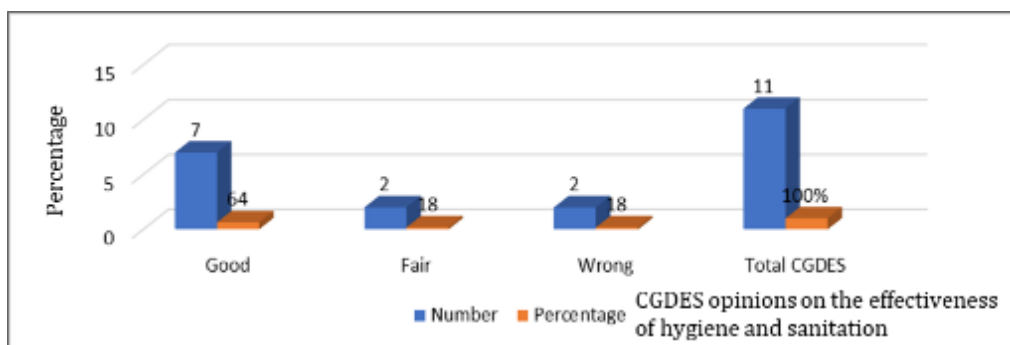
Figure 6 Distribution of CGDES Hygiene and Sanitation Promotion Activities Conducted

The figure above indicates that the activities conducted include the cleanliness of the school yard for 64% of the surveyed CGDES; the cleanliness of the surrounding area of the school yard for 45% of the surveyed CGDES; cleaning of latrines for 9% of the surveyed CGDES; and handwashing for 9% of the surveyed CGDES. In addition to these activities, they support schools with sanitation materials, as mentioned by some of the interviewed school directors. According to the action plans of the target schools, 19 activities were planned by the CGDES. Of these activities, 15 were completed (resulting in a completion rate of 79%). The completion rate of the activities is thus above average and significant. However, the 21% of activities that were not completed should not be overlooked in terms of their importance in promoting hygiene and sanitation in schools.

Specifically, we found that the planned sanitation activities and handwashing activities were all completed. However, the cleaning of latrines was only carried out by half of the CGDES that had planned it. Furthermore, the construction of latrines and fencing of the school yard that were planned were not completed by any of the CGDES that had proposed them.

4.1.7. CGDES Opinions on the Effectiveness of Hygiene and Sanitation Promotion Activities

To determine the contribution of the hygiene and sanitation promotion activities conducted by the CGDES, we asked them to assess the effect of these activities on the hygienic behaviors of the students.



Source: Field Survey Results, June 2024

Figure 7 Opinions of CGDES on the Effectiveness of Hygiene and Sanitation Promotion Activities

The figure above shows that 64% of the surveyed CGDES had a positive assessment of the activities related to the promotion of hygiene and sanitation. For 18% of the surveyed CGDES, the activities carried out partially improved hygiene at school. Meanwhile, the remaining 18% stated that these activities contribute very little to the promotion of hygiene and sanitation in the school environment.

4.2. Role of Students in Promoting Hygiene and Sanitation at IEPP Dakoussa

In this section, we will discuss the contributions of students in general and of the hygiene clubs (GS) in particular to the promotion and practice of hygiene and sanitation in the school environment.

4.2.1. Contributions of GS in Promoting Hygiene and Sanitation

Table 3 Existence of a Hygiene and Sanitation Club (CHA)

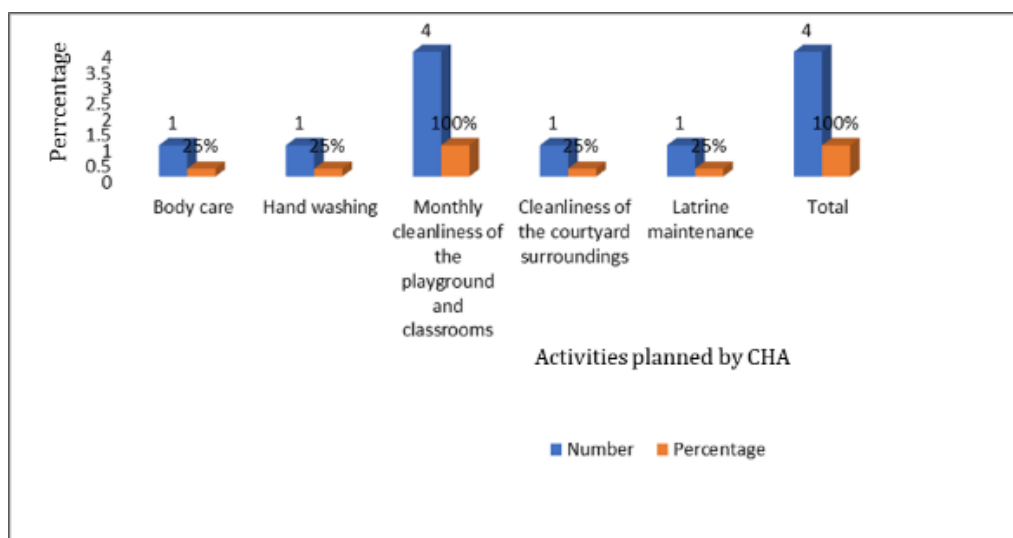
EXISTENCE OF A CHA	NUMBER	PERCENTAGE
YES	4	36%
NO	7	64%
TOTAL	11	100%

Source: Field Survey Results, June 2024.

The table above indicates that out of the 11 selected schools, 4 (or 36%) have an active hygiene and sanitation club (CHA) affirming its existence in their school. These organized GS focused on promoting hygiene and sanitation are fewer in number than others. This could mean that most GS contribute little to the promotion of hygiene and sanitation. Nevertheless, active GS participate in various ways to improve hygiene and sanitation in the school environment.

4.2.2. Organization of Hygiene and Sanitation Promotion Activities

All GS surveyed with CHA affirm that their CHA have activity plans related to hygiene and sanitation. This means that these CHA plan and organize their activities for promoting hygiene and sanitation in the school environment.

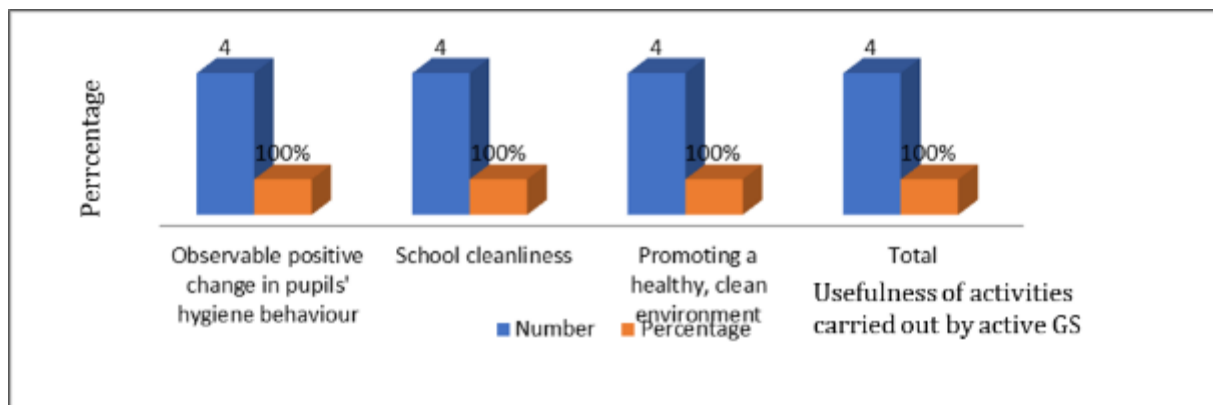


Source: Field Survey Results, June 2024

Figure 8 Types of Activities Planned by the Hygiene and Sanitation Club (CHA)

The figure above shows that the activities planned by the CHA include monthly cleanliness of the yard and classrooms (100%); awareness campaigns on body maintenance (25%) and handwashing (25%); cleanliness of the surrounding area of the school yard (25%); and maintenance of the latrines (25%). It is noteworthy that all the CHA have an activity completion rate of 100%. Indeed, all planned activities have been carried out.

4.2.3. Usefulness of Activities Carried Out According to Active Students



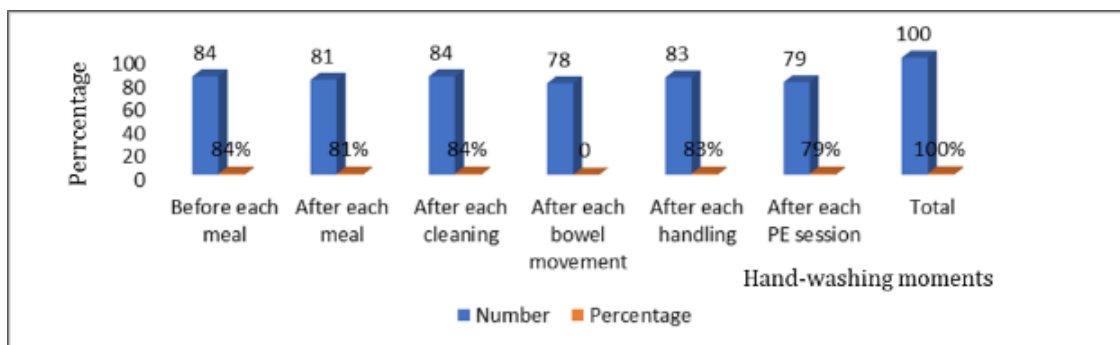
Source: Field Survey Results, June 2024

Figure 9 Usefulness of Activities Carried Out

The figure above indicates that 100% of active students with a Hygiene and Sanitation Club (CHA) affirm that the usefulness of the activities carried out is the observable positive change in students' hygiene behaviors, the cleanliness of the school, and the promotion of a healthy and clean environment. However, the CHAs encounter certain difficulties in implementing their action plan regarding hygiene and sanitation. Among these difficulties, we can note: the clumsiness of students in following certain instructions; the reluctance of some parents; and the lack of materials.

4.2.4. Practices and Knowledge of Students Regarding Hygiene and Sanitation

In this section, we will address certain attitudes and knowledge of students regarding hygiene and sanitation.



Source: Field Survey Results, June 2024

Figure 10 Handwashing Moments

4.2.5. Place of Defecation

The figure above shows that most students wash their hands with water and soap before and after eating, cleaning, defecating, handling items, and during physical education sessions. These students practice good hygiene, as handwashing with water and soap is one of the safest and least expensive ways to combat the spread of infections.

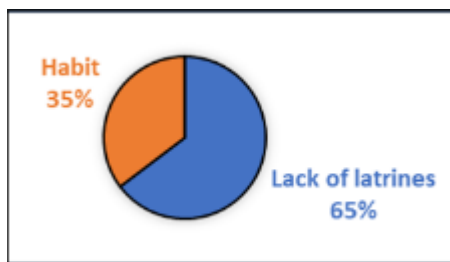
Table 4 Place of Defecation

Place of Defecation	Number	Percentage
Latrines	32	32%
Open Air	68	68%
Total	100	100%

Source: Field Survey Results, June 2024.

Additionally, according to the table above, only 32% of the surveyed students report using latrines for defecation, while 68% of these students defecate in the open air.

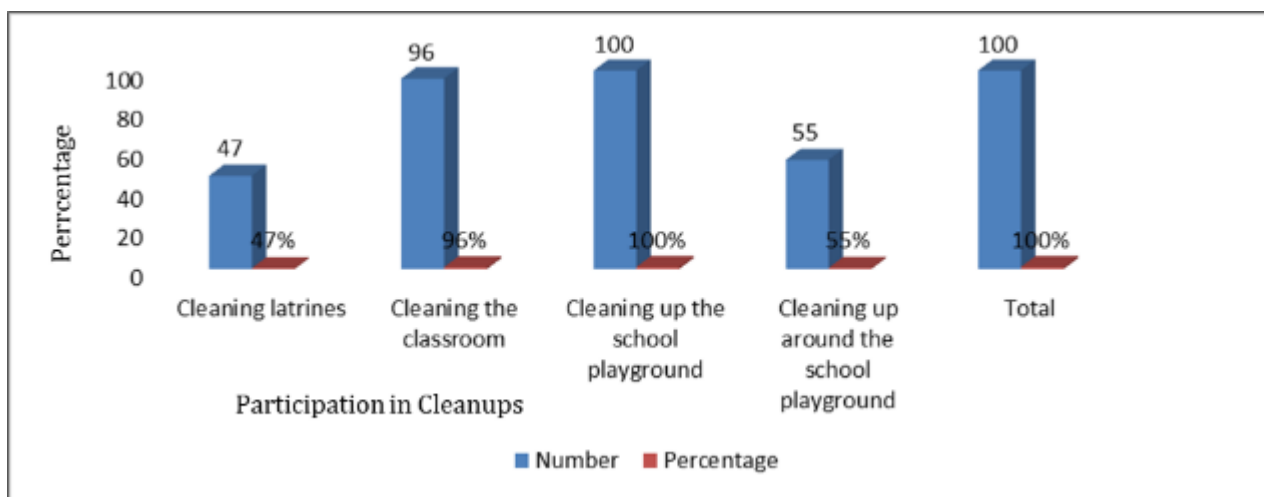
4.2.6. Reasons for Not Using Latrines



Source: Field Survey Results, June 2024.

Figure 11 Reasons for Not Using Latrines

The figure above shows that the reasons cited by the 68 students who do not use latrines are the lack of latrines for 65% and unfamiliarity according to 35% of these students. Thus, there are more students who relieve themselves in the open air due to the lack of latrines than those who do so out of habit.

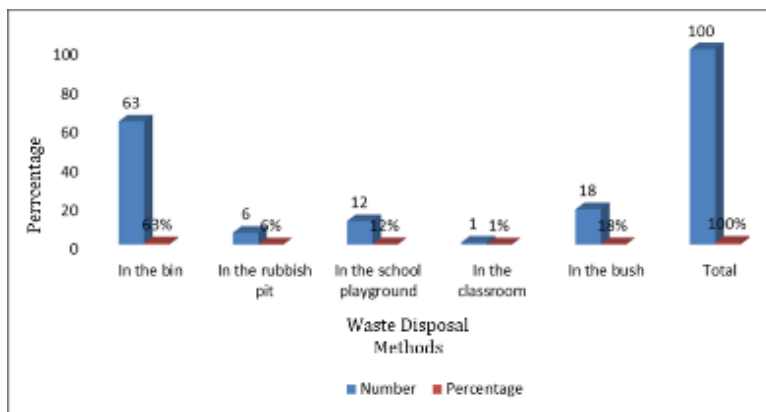


(Source: Field Survey Results, June 2024)

Figure 12 Participation in Cleanups

The figure above shows that almost all surveyed students participate in cleaning the school yard and classrooms. Half of the surveyed students participate in cleaning the surrounding area of the yard, and 45% of the surveyed students participate in cleaning the latrines. Thus, all surveyed students participate in cleaning the school yard, and nearly all participate in cleaning the classrooms. These are the most visible and frequently used areas of the school.

4.2.7. Waste Disposal

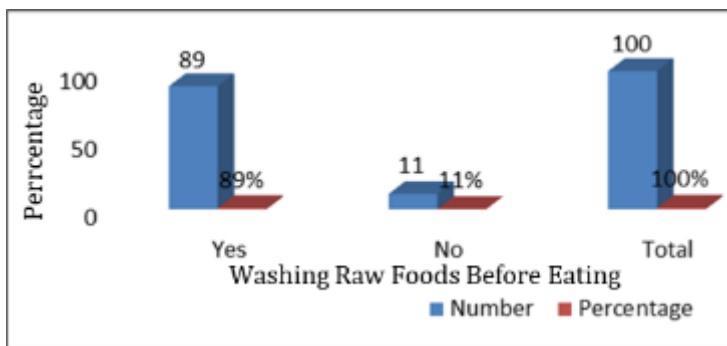


(Source: Field Survey Results, June 2024)

Figure 13 Waste Disposal Methods

Furthermore, as illustrated in the figure above, 63% of surveyed students report disposing of waste in the trash bin; 6% of students dispose of it in a garbage pit; 12% of students say they throw waste in the school yard; 1% in the classroom; and 18% in the bush. Those who dispose of waste in the trash bin are in the majority, and this practice is positive for promoting a clean environment. Those who use the garbage pit also engage in commendable hygienic practices. The cumulative percentage of surveyed students who dispose of waste in the trash bin or garbage pit reaches 69%.

4.2.8. Washing Raw Foods Before Eating



(Source: Field Survey Results, June 2024)

Figure 14 Washing Raw Foods Before Eating

The figure above indicates that 89% of surveyed students report washing raw foods before eating, while 11% of students report the opposite. Here, the proportion of good hygiene practice is very high. Indeed, washing raw foods is crucial for food hygiene as it eliminates impurities that may cause certain diseases related to poor food hygiene.

4.2.9. Regular Wearing of Clean Clothes and Nail Cutting

Table 5 Regular Wearing of Clothes Washed with Water and Soap

Regular Wearing of Clothes Washed with Water and Soap	Number	Percentage
Yes	85	85%
No	15	15%
Total	100	100%

Source: Field Survey Results, June 2024.

The table above reveals that 85% of surveyed students report regularly wearing clothes washed with water and soap, while 15% of students say they do not regularly wear such clothes. We observe that the proportion of students who claim to wear regularly washed clothes is quite high. This suggests that most students are applying the lessons they

received about regularly wearing washed clothes in their daily lives. Regarding nail cutting, 88% of surveyed students report keeping their nails short regularly, while 12% report not keeping their nails short regularly. We find that the proportion of students who say they keep their nails short regularly is also high.

4.3. Knowledge of Diseases Related to Poor Environmental Hygiene

The figure above indicates that among the diseases related to poor environmental hygiene, 100% of surveyed students mention itching; 71% mention malaria; typhoid fever and conjunctivitis are cited by 60% of surveyed students; cholera by 75%; and COVID-19 is mentioned by 90% of students.

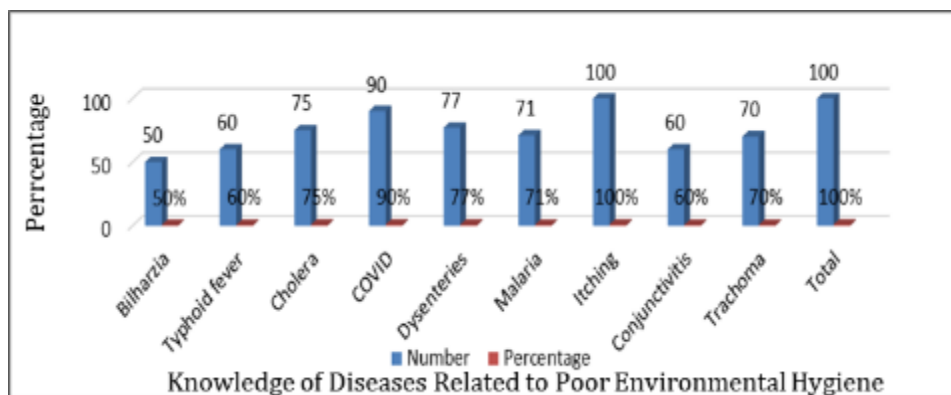


Figure 15 Knowledge of Diseases Related to Poor Environmental Hygiene

(Source: Field Survey Results, June 2024)

We observe that all surveyed students cited itching as an example of diseases related to poor environmental hygiene. Regarding malaria, schistosomiasis, typhoid fever, conjunctivitis, cholera, COVID-19, dysentery, and trachoma, each of these diseases was mentioned as an example of diseases linked to poor environmental hygiene by at least half of the surveyed students.

4.4. Utility of Adhering to Hygiene Rules According to Students

Table 6 Utility of Adhering to Hygiene Rules According to Students

Utility of Adhering to Hygiene Rules	Number	Percentage
Preservation of Health	100	100%
Being Respected by Peers	8	8%
Total	100	100%

Source: Field Survey Results, June 2024.

The table above reveals that 100% of surveyed students affirm that the utility of adhering to hygiene rules is the preservation of health, while 8% of students state that the utility of adhering to hygiene rules is to be respected by their peers. We find that all students have a good understanding of the importance of adhering to hygiene rules.

5. Discussion of Results

Our results show that the teaching of hygiene and sanitation at the primary level primarily focuses on food, body, clothing, and the environment. Teachers largely favor active methods, which are considered more effective for engaging students. This approach contrasts with the findings of Laouali-Idi et al. (2023), which highlight a disagreement between teachers and educational advisors regarding teaching methods for environmental education at the secondary level, as well as limited effectiveness of these methods in changing behaviors. Our results suggest that the use of active methods in teaching hygiene is essential for fostering sustainable behavior change among students.

There is a similarity between our results and those of Abdou (2015) and Issoufou (2019), highlighting several challenges related to improving hygiene in schools: the persistence of open defecation, lack of adequate sanitary infrastructure and

consumables, as well as weaknesses in teacher training and monitoring of actions. While initiatives such as those led by Tourlonniase (2019) in Zinder have demonstrated the effectiveness of building latrines and raising awareness among local stakeholders, our study reveals that these actions remain insufficient in certain regions, such as Dakoussa. Indeed, the lack of latrines, their neglected maintenance, and the low level of awareness among local stakeholders are major obstacles to improving school hygiene.

Similar to the work of Serge-Hubert (2013) in the Central African Republic, our study highlights the link between insufficient sanitary infrastructure, teacher training, and students' hygienic practices. However, unlike the Vietnamese context described by Louis (1993), where cooperation with donors seems more developed, our study emphasizes the challenges related to mobilizing additional resources

6. Conclusion

In summary, the findings of this study indicate that teachers, across all categories, play a crucial role in promoting hygiene and sanitation at the IEPP of Dakoussa. They conduct lessons for students addressing hygiene and sanitation themes (79%), raise awareness among students about good hygiene practices, and ensure the cleanliness of facilities by establishing cleaning schedules for classrooms and monitoring hygiene conditions among students.

The CGDES also play an active role in promoting hygiene and sanitation within the IEPP of Dakoussa. They have implemented action plans that include various activities such as maintaining the cleanliness of the yard and surrounding areas of the school, cleaning latrines, constructing latrines, enclosing the yard, and promoting body hygiene (64%). These initiatives, implemented with a high completion rate (79%), significantly contribute to improving sanitary conditions within the institution, according to the students' own assessments.

As for the students, the survey results reflect an adoption of good hygiene practices. A significant number of them engage in behaviors such as regular handwashing, wearing clean clothes, and maintaining short nails (between 85% and 88%), as well as participating in cleaning activities. Moreover, they demonstrate a good understanding of the issues related to hygiene and its benefits for their health and that of their community. However, several challenges persist, including the lack of adequate sanitary infrastructure, the continued practice of open defecation, and insufficient monitoring of actions. These difficulties underscore the need to enhance efforts in training stakeholders, investing in infrastructure, and mobilizing communities.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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