Impact of Environmental Education on Knowledge and Hygiene Practices Among School Children in the Potohar Region: A Step Towards Sustainable Environmental Change

Irsa Gul Andleeb[1], Nazia Rafiq[2], Muhammad Ateeq-Ur-Rehman[3], Lubna Ansari[4] and Muhammad Ehtisham Ilyas[5]

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Abstract

Environmental education for sustainability seeks to equip individuals of all ages with the resources necessary to create a sustainable future. The study sets out to determine the effects of environmental education on the hygienic practices of school children and to assess the existing knowledge among school children regarding the environment. The study was conducted in selected Tehsil Gujar Khan, District Rawalpindi secondary schools. The study's sample size was 70 students aged 12 to 16 years (7th to 10th grade). The data was collected through a mixed-method approach using Questionnaires and Focus Group Discussions. Overall, the study's participants had a good attitude toward applying their environmental knowledge to sanitary behaviors such as 60% follow hand hygiene,71% routinely clip their nails, 45% brush their teeth twice a day,72% use handkerchief or tissue to wipe running nose, 58% cover mouth while coughing and sneezing, 96% takes regular baths. The study also indicated students have sufficient understanding of environmental education, such as knowledge about pollution 60%, 47% about climate change, 59% about deforestation,50% about global warming, and 96% know what the environment means. To achieve a sustainable environment in the future, the research concluded that there is a need to increase student awareness through integrating environmental education into the educational system and to implement successful strategies to divert students' focus to sustainable practices.

Keywords: Cleanliness, Environmental Education, Knowledge, Practices, School Children, Sustainable Environment.

Introduction

The human being is the primary cause of many environmental dangers due to their impact on the environment, as well as on social and economic development. To identify the best solutions, it is important to understand this evolution and the nature of the interaction between individuals and the environment (Pradhan et al., 2020; Demir & Haşıloğlu, 2023). Once we gain this understanding, we can recognize the problematic aspects of this connection and take appropriate action. Since humans are the primary actors in environmental change, transformation must begin with them. People care deeply about the environment they inhabit and the future their offspring will inherit. This responsibility should be reflected in changes to

[1]*MPhil Scholar, Department of Anthropology, PMAS-Arid Agriculture University, Rawalpindi.*
[2]*Assistant Professor, Department of Anthropology, PMAS-Arid Agriculture University.*
Corresponding Author Email: naziarafiq@gmail.com
[3]*PhD Scholar, Department of Sociology, PMAS-Arid Agriculture University, Rawalpindi.*
[4]*Assistant Professor, Department of Forestry & Range Management, PMAS-Arid Agriculture University.*
[5]*Undergrad Student in Business Administration, Department of UIMS, PMAS-Arid Agriculture University.*

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our attitudes, behaviors, lifestyles, and interactions with the environment (Pradhan et al., 2020; Ambusaidi & Al Fulaiti, 2022).

Humans have historically had a positive impact on the environment, but recently, detrimental effects have emerged due to irresponsible and continuous exploitation of natural resources. In summary, human development is the primary cause of environmental issues (Debrah et al., 2021; Pirchio et al., 2021; Dutta, 2024). As a result, education can serve as a tool to foster awareness, equipping individuals with the knowledge, skills, behaviors, and values needed to address environmental challenges. Thus, those who receive environmental education are better prepared to tackle environmental issues (Gunasinghe, 2023). Environmental education is a vital tool in encouraging citizens to support environmental sustainability. One of the most pressing contemporary issues is water management (Severo et al., 2021; Olsson et al., 2022; Masalimova et al., 2023).

The primary problem is water scarcity; therefore, addressing it from an early age is essential to fostering a sense of responsibility toward environmentally sustainable practices. To promote and support environmental education, attitudes, perceptions, and practices related to water should be integrated into educational programs (Olsson et al., 2022; Baker et al., 2022; Masalimova et al., 2023). However, few studies have explored the effects of educational strategies on water conservation (Reya, 2021; Uralovich et al., 2023).

Many environmental education initiatives worldwide aim to reshape children's perspectives on the environment and wildlife. To effectively measure these attitudes, culturally and contextually appropriate assessment instruments are required. However, most of the tools currently in use were developed in industrialized Western nations, raising concerns about their applicability in other regions. In 2018, the Wild Shale environmental education initiative was launched in rural India, aiming to enhance children's positive perceptions of wildlife (Severo et al., 2021; Salazar et al., 2022).

In the 1970s, the prevailing belief was that environmental problems were the result of "maladaptive human behavior." This prompted social scientists to investigate the motivations underlying such behavior. A central assumption of early research was that environmentally harmful behaviors reflected a person's low level of environmental concern. Since then, most researchers have conceptualized environmental concern as a general attitude encompassing cognitive, affective, and conative judgments regarding environmental protection (Bamberg & Rees, 2018; Demir & Haşıloğlu, 2023).

Maintaining a consistent standard of living requires careful environmental management. However, modernist greed has led to a decline in environmental quality. This has resulted in an imbalanced ecological system, leading to soil, air, water, and noise pollution, as well as the depletion of the ozone layer, the exhaustion of natural resources, and an increase in residual waste (Ahmed et al., 2021). To address these issues, education is widely considered one of the most effective approaches for fostering environmental awareness, responsiveness, and sustainable practices among different age groups (Mahat et al., 2019; Gilbertson et al., 2022). Both environmental education (EE) and climate change education (CCE) seek to empower humanity to maintain its role as stewards of the planet.

To explore the influence of technology on environmental sustainability, we propose a research approach from the perspective of Earth’s inhabitants. Drawing on Bruno Latour’s concept of technology as "missing mass" and Hannah Arendt’s idea of "earth isolation," we argue that, in the Anthropocene era, our relationship with technology should be a central focus of climate change and environmental education. The concept of sustainable development is often questioned due to its close association with the impractical goal of decoupling economic growth from environmental impact. Therefore, we propose "education for post-sustainability" (EPS), which critically reevaluates the relationship between technological advancements and sustainability (Mahat et al., 2019; Gilbertson et al., 2022; Takkinen & Pulkki, 2022).

According to Thompson and Hoffman (2003), environmental education is student-centered, providing students with opportunities to develop their perspectives through hands-on, practical investigations. This approach engages students in firsthand experiences and encourages them to apply higher-order thinking skills. In doing so, it fosters the development of a dynamic educational community where students share knowledge and ideas (Timm & Barth, 2021).

Objectives

1. To study the effects of environmental education on hygienic practices of school children.
2. To assess the existing knowledge among school children regarding the environment.

Literature Review

According to a study, early childhood environmental education must be considered the first step in the educational process for sustainable living. Since children are perceived as competent and prepared to learn and construct their own identities and lives, it is essential to establish foundational knowledge, attitudes, and practices for sustainable development early on. Therefore, early training is necessary to ensure that children receive environmental education in schools, which is crucial for successful and balanced human development (Samuelsson, 2011; Sadrizadeh et al., 2022).

The school experience can significantly influence a person's perception of environmental awareness. Early life experiences shape individual education by fostering environmental sensitivity. Each pupil will gain a unique experience under a standard curriculum, yet the level of awareness they achieve is also affected by their daily activities (Abdul et al., 2019; Amprazis et al., 2021; Alam, 2022). Personal hygiene, environmental cleanliness, and raising awareness about one's surroundings are key components of sustainable development. Individuals who understand the value of good personal hygiene are often more conscious of environmental issues in their communities. People who develop environmental awareness from an early age can contribute to improving the quality of the environment (Abdul et al., 2019; Amprazis et al., 2021; Alam, 2022; Demir & Hasiloglu, 2023).

Acosta et al. (2022) emphasized the importance of sustainable resource usage in reducing negative environmental impacts. Sustainable consumption (SC) involves using goods and services to meet basic human needs while minimizing the consumption of natural resources, harmful materials, and emissions throughout their life cycle. This ensures that the needs of present and future generations are not compromised.

Environmental education helps students develop awareness of how to interact responsibly with nature. There is a strong connection between environmental education and hygienic practices. Applying knowledge of hygiene is essential for children to contribute to environmental conservation (Mahat et al., 2019; Gilbertson et al., 2022; Takkinen & Pulkki, 2022). To achieve meaningful results, knowledge must be translated into practical behaviors such as reducing waste, conserving water and energy, planting trees, protecting natural habitats, and implementing alternative strategies to enhance natural resources.

Research has demonstrated the importance of hygienic practices in sustainable living. However, some studies have found confusion between the terms "cleanliness" and "hygiene," as they are sometimes used interchangeably. Hygiene refers to practices that prevent the spread of disease-causing agents, while cleanliness involves sterilizing and removing dirt or impurities to maintain hygiene (Bashir, 2019; Mahat et al., 2019; Gilbertson et al., 2022; Takkinen & Pulkki, 2022).

Environmental education is a process that involves identifying values and interpreting ideas to build the knowledge, skills, and attitudes necessary to understand and appreciate the interdependence of humans, culture, and biophysical surroundings. It also includes decision-making practices and the self-development of a code of conduct related to environmental quality (Holm et al., 2021; Palmer, 2023).

Various strategies have been employed to raise public awareness about environmental issues, such as pollution. One effective approach is incorporating environmental education into school curricula (Chiu, 2023). This strategy is based on the idea that educational institutions can instill a positive attitude toward environmental preservation in students. Education increases awareness of environmental values and motivates individuals to develop solutions and policies to address environmental challenges (Ambusaidi & Balushi, 2023).

The promotion of high-quality education is essential for improving lives and advancing sustainable development, as highlighted in UNESCO's reports. This led to the establishment of the fourth Sustainable Development Goal (SDG), which focuses on education for sustainable development. By 2030, this goal aims to ensure that all students acquire the knowledge and skills necessary to promote sustainable development. This includes education on sustainable lifestyles, human rights, gender equality, peace, global citizenship, cultural diversity, and the role of culture in sustainability (Draghici, 2019; Broda, 2023).

Increasing environmental knowledge is believed to lead to more progressive attitudes toward sustainability. Environmental education specifically targets the assumption that educating children can influence adults by fostering multigenerational attitudes and understanding (Demchenko et al., 2021). However, studies assessing the effectiveness of environmental education in changing behaviors and whether these changes are passed down across generations remain limited (Rakotomamonjy et al., 2014).

A study examining the link between environment and education emphasized the need to integrate environmental education into curricula in Chinese cities. This would help future generations appreciate the environment and address environmental challenges. Additionally, older generations should be encouraged to transmit ecological knowledge, promoting both cultural and biological diversity in conservation efforts (Laffitte, Seyler, & Tang, 2022).

The degree of environmental instruction students receive significantly influences their sense of responsibility and actions. Knowledge transforms their thinking processes and motivates them to apply their understanding to environmental protection. Empirical studies have demonstrated the relationship between students' environmental knowledge, attitudes, and behaviors (Draghici, 2019; Rabaani, 2020; Broda, 2023).

A person's health, as well as that of their family and community, is largely influenced by their environment. Air quality, water safety, food security, and living conditions all affect human well-being. Schools play a crucial role in a child's cognitive and physical development, making environmental education essential. Teaching children about hygiene, such as the importance of clean water, handwashing, and proper waste disposal, helps create a healthier learning environment (Draghici, 2019; Rabaani, 2020; Suyal & R, 2021; Broda, 2023).

Education is undeniably the most effective way to guide society toward long-term sustainability. A key short-term and immediate objective is to cultivate a knowledgeable culture that values critical thinking, creativity, and analytical reasoning to address the challenges posed by industrialization and urbanization. Therefore, early childhood education plays a crucial role in achieving sustainable development (Mahat et al., 2019; Holm et al., 2021).

Theoretical Framework

As a robust theory, the Theory of Planned Behavior (TPB), proposed by Ajzen (1991), explains planned behaviors in the context of environmental education. TPB posits that three critical factors influence behavioral intentions and, consequently, actual behavior: attitudes toward the behavior, subjective norms, and perceived behavioral control. The interaction of these factors predicts an individual's intention to perform a particular behavior, which serves as the immediate antecedent of actual behavior (Ajzen, 1991).

In this study, TPB is used as a lens to understand how environmental education influences the

environmental and hygiene practices of school children. Accordingly, education that fosters positive attitudes toward environmental issues should encourage sustainable behaviors. Moreover, subjective norms—such as peer and teacher support—and perceived behavioral control, which refers to students' confidence in their ability to perform these behaviors, also influence their decision-making (Oré, 2023).

The environmental education provided to school children is likely a key factor in shaping their attitudes toward environmental issues, such as waste management and hygiene, as well as their perspective on the importance of sustainability. The behaviors of peers and community members may affect subjective norms, which can be defined as perceived social pressures or societal expectations to engage in environmentally responsible behavior. Perceived behavioral control relates to children's confidence in their ability to engage in sustainable practices, such as sorting waste or maintaining personal hygiene. Their environmental education directly impacts their ability to perform these behaviors by equipping them with the necessary knowledge and skills.

These TPB constructs are reflected in the positive correlation between environmental education and behavior change in this study. When students understand the importance of sustainable practices and feel capable of implementing them, they are more likely to adopt them. Therefore, TPB provides a useful framework for explaining how environmental education fosters long-term, sustainable behavioral change in schoolchildren.

Materials & Methods

To methodically record and elucidate the experiences and opinions of students, a mixed-methods approach was employed to gather comprehensive data on the effects of environmental education, personal hygiene habits, and students' understanding of environmental issues. Students between the ages of 12 and 16, enrolled in 7th, 8th, 9th, and 10th grades in selected schools of Tehsil Gujar Khan, were chosen through simple random sampling. A total of 70 students were selected from the targeted population.

Quantitative data was analyzed using a Likert scale, while qualitative data was gathered through Focus Group Discussions (FGDs) to identify issues related to environmental consciousness and sanitation. Thematic analysis was conducted to categorize, sort, and describe the data concerning students' familiarity with and implementation of environmental practices.

Results and Discussion

Hand Hygiene

Approximately 60% of students reported following the recommended hand hygiene guidelines, which included washing their hands with soap and water before consuming food. However, 40% of the sample disagreed with this assertion, indicating that they either did not wash their hands before eating or used only water.

Students understood the importance of handwashing with soap and water and were aware that it helps eliminate germs and prevent illness. However, there is a noticeable gap between their knowledge, attitudes, and actual practices. The researcher observed that during break time, most students did not wash their hands before or after eating lunch. Additionally, in one private school, soap was completely unavailable, while in other schools, only small remnants of soap were found.

Regarding nail hygiene, the majority of students (71%) strongly agreed that they routinely clipped their nails, while 14% agreed to some extent, and the remaining 15% disagreed. A student narrated:

I wash my hands before eating because I know that this helps to remove germs.

Most of the students in my school do the same; we have been taught this in our classes. I also trim my nails to avoid having dirt under them, but there are times when I forget to do it or I like having long nails until the teachers remind us in assembly (FGDs results).

Dental Hygiene

More than 45% of students mentioned that they use to brush their teeth twice a day to maintain proper oral hygiene. Roughly 46% of students claimed to brush their teeth only once every day. Notably, 9% of participants brush infrequently, disregard it, or put it off for two to three days or longer. Students' responses towards dental hygiene revealed that they do not prioritize maintaining good oral hygiene despite being aware of both dental health and the long-term effects of bad oral hygiene habits. Some of the students also mentioned in a Focus Group Discussion that they don't go to the dentist for regular examinations unless they have a serious dental issue. According to the data for the present study, the majority of students also mentioned the usage of non-paste items including Dhandhasa, Miswak, and Dentonic (Tooth Powder) to clean their teeth. Some students mentioned that they get up late and they had to rush to catch their van, so they neglect to brush their teeth in the morning. However, some students were found indolent enough to neglect their dental hygiene. Data revealed that children's perception of dental health was influenced by peer behavior or family influence. Children in the dental hygiene category required additional environmental education-related knowledge and awareness. One of the respondents narrated the issue of oral hygiene with this expression:

I brush my teeth twice daily, but my friends sometimes only brush once a day or even not at all. We seldom visit a dentist; it is only when there is a severe problem. Some use Miswak instead of toothpaste. If I am in a hurry, I may miss brushing my teeth. There is a poor understanding of oral hygiene (FGDs results).

Respiratory Hygiene

The majority 72% of the respondents were of the view that they wipe their nose with a handkerchief or tissue knowing the fact that it is a good practice otherwise it typically causes germs to spread to other people, which could get them sick.

Mentioning a good health hygiene practice one student said that;

I use a handkerchief or tissue to wipe my nose and make sure that I cover my mouth when I cough or sneeze, and I realized that some of my classmates do not do so, and I have seen many children who use their sleeves or back of hands to wipe (FGDs results).

Only 58 % were of the view that they cover their mouths when coughing or sneezing.

One of the respondents claimed that

Usually I tried to cover my mouth when I cough or sneeze as my mom taught me to do so and it is considered as a good habit to do so but honestly sometimes I don't have time to react on that sudden involuntary expulsions. I understood that covering my mouth prevents spreading germs but sometimes it is difficult to remember and my teacher reminds me in classroom (FGDs results).

Body Cleanliness

Almost 96% of students responded favorably to the assertion that they take regular baths or showers. 86% of students discussed wearing clean clothes every day. 99% of students mentioned using water to clean themselves after using the toilet/washroom, as demonstrated by the subject "I use water to clean myself after using the toilet."

Another student recounted "I wear clean clothing to school every day and take a wash every day. Although the majority of children at school follow same, everyone should adopt the practice to save them against illness" (FGDs results).

Environment Responsibility

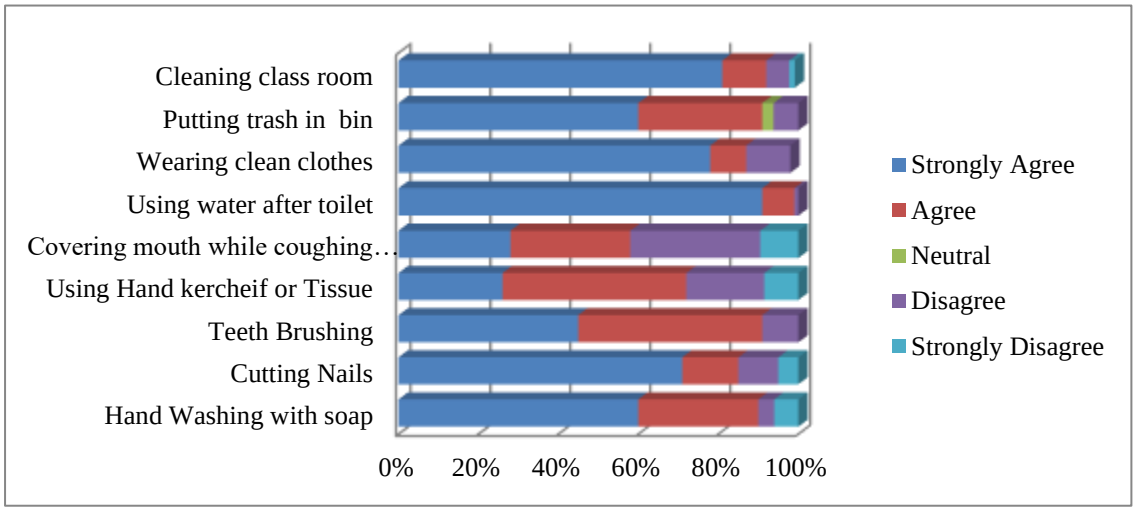
The majority of the students (91%) indicated that they acted responsibly toward the environment by properly disposing of their trash in the designated bin. Roughly 81% of kids strongly agree, and 11% agree that they help in keep the classroom clean. After assigning students to groups, teachers assign them the duty of cleaning the classrooms, and they do a great job of it by adhering to the schedule. As a result, 92% of students help to maintain a clean classroom.

A student stated that "I always dispose my garbage to the bin and as for the cleanliness of the classroom, we are grouped and we take turns in cleaning it and most of the students do that way" (FGDs results).

Another student narrated that:

> *As a lazy student, I try not to carry trash to the trash bin. I bring the trash with me in my bag, and when I come back home, I dump it in the dust bin that is available at home. I find it awkward to constantly take pencils and sharpener to the class bin for putting shavings trash into the bin. I also try not to take paper waste to the trash can; instead, I carry it in my school bag and empty it into the dustbin at home (FGDs results).*

Figure 1: Hygiene results



Awareness and Understanding of Environmental Issues

The vast majority of students (94%) strongly agreed that access to clean air and water is essential, demonstrating their understanding of these fundamental necessities for human health and well-being. During a focus group discussion, students expressed that clean air and water are invaluable gifts, emphasizing that all living beings struggle to survive without them. They acknowledged that contaminated water is a major cause of human illnesses such as hepatitis, diarrhea, and dysentery, and that it also negatively impacts animals.

Some students highlighted the dangers of industrial waste and sewage discharge, as well as the mixing of pesticides and herbicides with clean water through rainfall. Additionally, they raised concerns about plastic debris in water bodies, which poses a severe threat to aquatic life.

Students also discussed the importance of clean air, noting that exposure to polluted air can lead to various skin diseases and respiratory conditions. While over 47% of students believed they had a good understanding of climate change, a sizable majority (53%) were either uncertain or unaware of its implications.

According to Focus Group Discussions, most students perceived climate change as a natural process, believing that human activities have neither a significant negative impact on the climate nor any harmful effects on human health. The majority of students were unfamiliar with the concept of global warming, with only a small percentage able to explain it.

Some of the students were of the view that:

> *Many of us agreed that water and air are necessary to be clean for our health, which led us to a discussion about how the pollution influences both of them; unfortunately, almost half of us did not understand the concept of climate change, some people claiming that it is a natural process that does not concern us. We need to learn about global warming more (FGDs results).*

Students' lack of awareness about an important environmental issue suggested that more education and awareness-raising was needed.

Environmental Protection and Pollution Awareness

Additionally, the results show that 97% of students believed that everyone should do their part to protect the environment.

A respondent narrated that

> *The earth is our home planet we should keep it clean and healthy. Our small actions can bring big changes. We need to grow more plants, keep clean water bodies, adopt recycling instead of throwing trash directly to garbage, use eco-friendly bags rather than plastic bags and save water and energy (FGDs results).*

Approximately 91% of respondents agree that pollution negatively impacts the environment. Students actively participate in a FGD and provides accurate comprehension of the pollution idea. Approximately 60% of them are aware of major forms of pollution. While on the other hand, the rest of the students could either define one or two types of pollution as they had little awareness about them.

A student stated that:

> *Pollution is caused by harmful material which contaminates our environment and seriously affects the life of every creature for example when we throw garbage it pollutes soil and when toxic material mixed with water it pollutes water and burning mechanisms causes air pollution ((FGDs results).*

Seventy-four percent of pupils could explain the environmentally favorable concepts "reduce, reuse, and recycle" using everyday instances of how they carry out these eco-friendly practices. A significant minority of about 26% deny knowing these 3Rs terms.

A student described her experience with collecting waste materials for recycling purposes

> *I am aware of the recycling process and as I am living in a village where we collect used bottles, metal products, cans, etc. for a street vendor who sells different things such as candies, sweets, dates, and utensils such as glass and cups, etc. People replace these used products with them and get new things. These used plastic bottles, canes, leather material, and metal products are then recycled in the factories where these are converted into new products. So in this way, these waste materials are successfully demolished but in my school, there is no program for recycling they collect garbage in the dustbins and I am curious what they do with it (FGDs results).*

Students have a better understanding of reuse terms. In a Focus Group Discussion majority of students actively participated. According to them, the term "reuse" refers to all those things that we can use again instead of throwing it as garbage, but the majority of students are unable to explain about the term "reduce".

Students narrated that:

> *Books are incredibly expensive, so instead of purchasing new ones, we reuse our old ones since they all follow the same syllabus and we can obtain the same information from them. Buying them from seniors is a better option than doing it yourself (FGDs results).*

The term "environment" is a key concept in environmental education. According to the findings, 82% of students strongly agreed while 14% were of the view that they understood the term environment. In a Focus Group Discussion, it was confirmed that their knowledge about the environment is merely restricted to meaning ''surroundings'' or ''nature'' and they lack deeper understanding. Nevertheless, the fact that only 4% of students disagreed implies that they know nothing about the term "environment".

Practical Environmental Actions and Knowledge

Approximately 98% of the participants mentioned the significance of energy and water. Approximately 91% of those surveyed said that they save water by taking shorter showers, using buckets, and turning off the faucets when brushing their teeth, and they save energy by turning off lights and other electronics when not in use. Moreover, they support the preservation of energy, water, and other natural resources. One of the respondents described that ''I always try to use buckets for taking shower and turn off water tap while brushing teeth. My parents always remind me to turn off lights and other electric appliances to save electricity to reduce electricity bills"

Just 59% of those surveyed strongly agreed that they knew what the phrase "deforestation" meant. According to these respondents, deforestation is specifically defined as the loss of forest, typically as a result of harvesting, farming, urbanization, and the use of wood for fuel and other purposes. About 19% of students stated they only understood the concept and they were missing crucial information about the impact on the environment due to environmental factors caused by humans. When asked about deforestation, almost 22% of respondents provided answers that were either inaccurate or ambiguous.

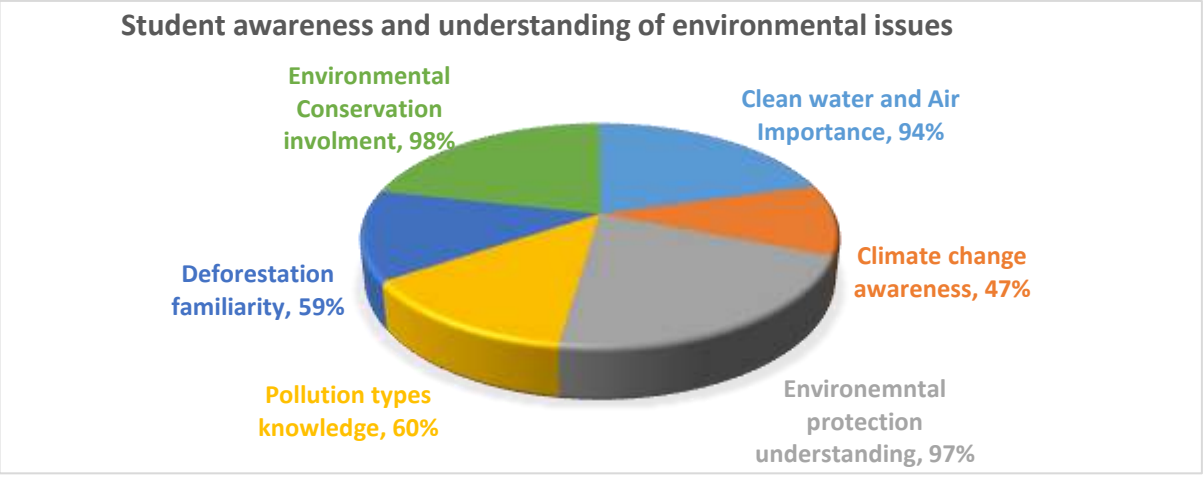
One of the students was of the view that:

> *I know that water and energy have to be conserved hence I ensure that I adhere to the same for instance by switching off lights and using less water. However, I lack a proper understanding of deforestation; I recognize it entails the destruction of forests but don't know more than that (FGDs results).*

Only half of the sample was able to provide knowledge about global warming and the rest were unable to provide clear concepts. One of the respondents describes that *'*

> *Global warming has serious impacts on our environment. I think one of the main reasons for global warming is human activities such as pollution and cutting down trees. As a student, I think we can bring change through our small actions by saving water and energy, reducing pollution, and growing trees (FGDs results).*

Figure 2: Student awareness and understanding of environmental issues



The results show that humans and the environment interact closely. Humans are regarded as the most valuable and intelligent creature in the biosphere, yet because of their negative behavior, they are also viewed as the most hazardous. Human-caused environmental problems have gotten so serious that people are not only endangering their own lives but are also exploiting the planet. It has become necessary for them to alter their behavior in order to stop their damaging actions. An individual with a negative attitude toward the environment keeps creating issues and is insensitive to it. It is essential to adopt constructive attitudes and behaviors toward the environment and living things, but this can only be accomplished by adopting positive behaviors and attitudes toward the environment and living things is crucial, but it can only be achieved through early and efficient environmental education. Environmental education should be given at an early age to children because the young generation is the one who builds the future of this world. In this research, there is a positive response from students toward environmental knowledge. The majority of students showed that they have strong knowledge about main concepts of environmental education which they have learned from their curriculum such as environment, clean air, clean water, positive and negative human impacts on the environment, pollution, types of pollution, water pollution, land pollution, air pollution, noise pollution, waste management, reduce, reuse, recycle, harmful chemicals, water conservation, and energy conservation. There is still a need for raising more awareness in students because a minority of students possess low knowledge or misconceptions regarding these basic concepts. Students show an excellent response on waste-mitigating processes, and all of them actively participate in explaining the 3Rs terms with common practices they perform daily at home and in school. The 3Rs — reuse, reduce, and recycle — are important mitigating practices to overcome human impacts on the environment by reducing waste materials and conserving natural resources. The students must know about their importance.

In a study, it is stated that all people, wealthy or not, should be concerned about recycling, including children and adults. Thus, it is necessary that we start teaching the younger generation about the value and advantages of recycling and inspire them to take action to protect the environment by recycling. It is thought that by educating themselves, waste producers both now and in the future will respect the preservation of natural resources by choosing wise activities in order to prevent waste (Mkhonto, 2019). On the other hand, the majority of students lack knowledge about global warming, climate change, and deforestation. A research study revealed that only half of the students have an understanding of global warming, and students strongly agree with the process of recycling as one of the important tools of waste management (Naquin et al., 2011).

Studies reveal that students' conceptual understanding of significant environmental challenges including ozone depletion and global warming is inaccurate. Instead of believing that the greenhouse effect causes ozone layer depletion, the majority of 13 and 14-year-old students believe that holes in the ozone layer create the greenhouse effect. In the same way, some students think that the primary cause of global warming is the decline of the ozone layer (Temel et al., 2018). The 9th and 10th grade students possess a higher level of knowledge as compared to 7th and 8th grade students. In a study, the result revealed that environmental education is more effective in high school students than in elementary and junior levels because of their age and intellectual level (Eka et al., 2021). Environmental education also significantly affects the hygienic practices of school children. Students are inspired and motivated by environmental education and start developing hygienic habits. EE develops a sense of awareness and understanding of how one's actions affect the environment and their own health, and how one's actions prevent environmental destruction and promote sustainability.

In this study, the researcher has shown a positive result that almost all students practice good hygienic activities such as washing hands with soap, using water after toilet, using clean water, wearing clean clothes, using a handkerchief or tissue to wipe their nose, covering their mouth while coughing or sneezing, taking a shower, protecting their environment, etc. But notable minorities of children are practicing delayed or avoiding oral hygiene by not brushing their teeth. This unhygienic behavior can destroy their oral health. In a survey done in Palestine, 68% of students indicated they wash their hands with soap after eating, playing, and using toilets. In an Ethiopian study, only 36% of students from schools who participated in a study showed a response of washing hands with soap. An Indian study demonstrated that how most students' correct knowledge of brushing teeth, washing hands, cleaning their mouths after taking meals, and combing hair wasn't always put into correct practice, bringing attention to the significance of behavior change reinforcement strategies (Pradhan et al., 2020).

Poor oral hygiene includes cavities, bad breath, gum bleeding, toothache, loose teeth, gum recession, jaw swelling, etc. Poor hygiene can cause other physical diseases; for example, the bloodstream can carry germs to other parts of the body. Therefore, a need for more awareness in students regarding oral hygiene is required. Those students who maintain proper hygiene not only improve their own health but also support creating a more hygienic and pleasant atmosphere.

Conclusion

More needs to be done to encourage environmental education at the school level in order to create a sustainable future. According to the findings of this study, students generally have a positive attitude toward upholding hygienic standards such as hand hygiene, respiratory hygiene, body cleanliness, and taking care of the surroundings. However, the sample indicates that dental hygiene is a serious concern. Students need to understand this issue better and become more conscious of it. The study's findings show that children understand pollution and its several forms. They are also well-versed in trash reduction techniques, including recycling and reuse, with the exception of reduction. Given that the majority of students have little to no understanding of contemporary environmental challenges like climate change, global warming, and deforestation, it is imperative that these issues be specifically addressed with them. If pupils don't know about these problems, how can they contribute to tackling them?

Recommendations

1. The students need adequate basic facilities such as clean and well-maintained restrooms and toilets. Install hand washing taps next to washrooms, cafeterias and playground and place soap or hand wash over there to ensure hand washing.

2. In order to maintain a clean physique, the professors' advice pupils to brush their teeth at least twice a day and keep clean their body and surroundings and conduct regular inspection in the start of day.
3. Health hygiene related content in the curriculum is not sufficient and learning is dependent upon the material included in text books. Teachers also mostly focus on syllabus content for teaching students.
4. Islamic education must be combined with environmental education in order to get better and faster results for a sustainable environment. Islam, our religion, gives us everyone a code of conduct and encourages its adherents to develop, preserve, and utilize nature.
5. Textbook content has to be updated with current, useful information that encourages students to develop the skills they need to fulfill their active role as responsible citizens.
6. The teachers need productive strategies to teach students about current challenges, issues and crises regarding environment.
7. In order to prepare future leaders to protect the environment, the government should act to adopt environmental policies in schools.

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