

Investigating the Role of Health Literacy in Raising Public Awareness in their health management

Ms Asma Rajpoot

Department of Science Education, Faculty of Education, University of Okara

Mr. Rab Nawaz

PhD Scholar, Department of Educational Research and Assessment, Faculty of Education, University of Okara

Dr Lubna Salamat

Department of Science Education, Faculty of Education, University of Okara

Dr. Nasrin Akhter

nasrin.seit@uo.edu.pk

Associate Professor, Faculty of Education, University of Okara

Corresponding Author: * Dr. Nasrin Akhter nasrin.seit@uo.edu.pk

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ABSTRACT

This study focuses on how video is used in Pakistani higher education physics labs. The goal of using health literature is to increase comprehension of developing understanding health management. This study investigates how important stakeholders view the effective application of promoting health literacy and public welfare in their day to day lives. study collects data from semi-structured interviews with students. Because of the native environment, the researcher's insider status aided in the collection of comprehensive and reliable data, but it also presented difficulties when using interviews. Overall, it became evident that there was a lack of conceptualization of the function and significance of health literacy. However, the study's findings show that the majority recognized the value and function of health literacy. Many of the sudden also mentioned that they had a better understanding of health issues as a result of their continuing practice in the teaching various courses.

Keywords: Health literacy, public understanding, Public Awareness, Preventive Health

INTRODUCTION

Health literacy presents a paradox, as it has expanded significantly as a field (Berkman *et al.*, 2010). Currently, understanding health information and acting upon it, which defines health literacy, stands out as one of the most pressing concerns in our healthcare system. Our main challenge may lie in ensuring that health information is accessible to all individuals, regardless of their backgrounds, education levels, or literacy skills (McCray, 2005). The definitions provided by Healthy People and the American Institute of Medicine establish the tasks and criteria related to health literacy. The ability of people to acquire, assimilate and comprehend the fundamental health information and services available to them so as to make effective judgments on health (Ratzan & Parker, 2006).

Health literacy (HL) has become a more crucial ability in today's culture as people make decisions that affect their health. Furthermore, navigating contemporary healthcare systems is becoming more and more difficult for people (Eichler *et al.*, 2009). Analysts have recently acknowledged the problems with health education, its role in understanding therapy and self-care data, and its connection to outcomes related to well-being. To ensure that other fields recognize the issue and include relevant research and data, it is

important to clearly define it. The concept of well-being proficiency is still quite new (Speros, 2005), and addressing it will help various disciplines engage with the topic.

Health literacy can be produced in a number of ways. Online searches for health-related information are conducted by millions of people, both well and sick. Even though numerous individuals struggle to comprehend much of the information on health websites, these sites rank among the most visited on the web. Finding other forms of help is crucial because changing the entire text to make it easier to understand is not a workable answer. It is commonly known that poor performance and worse health outcomes are linked to low health literacy (Leroy & Miller, 2010). This research examines how improving health literacy can empower individuals to better understand important information and adopt preventive strategies to reduce the excessive use of harmful substances and unnecessary plastic in the environment

Objectives of the Study

There is the following objective of the study.

- To explore the students' views about the role of health literacy.
 - To explore the students' perceptions about the implications of health Literacy in developing public understanding
- Explore the difficulties in generating public awareness about common health issues

Research Question of the Study

The research questions of the study are following as:

- How do you perceive the role of health literacy in your life?
- How do the students' opinions of the public awareness of health literacy in their daily lives
- What are the difficulties in generating public awareness about common health issues

Significance of the study

This study will be useful in examining the role that health literacy plays in the lives of ordinary citizens, especially young students. In order to safeguard the environment from the public's misuse of various hazardous materials, this project will make connections between literacy and everyday, environmental, and health literacy. This study contributes to raising awareness of the various hazardous materials found in the environment. The scientific understanding of abuse and safety precautions for various hazardous materials will be supported by this study. This study supports the idea that policymakers and university authorities can address various harmful environmental challenges by involving varied harmful material literacy. Through raising awareness of various harmful material literacies, this study assisted in reducing environmental pollution.

LITERATURE REVIEW

Health literacy is defined as the ability to find, comprehend, and use essential health information and services to make informed health decisions (Freedman *et al.*, 2009). It also encompasses the knowledge one has, both theoretical and practical, as well as the capacity for critical thinking, which involves understanding facts, processes, and making decisions. Consequently, programs aimed at improving health literacy in communities can lead to better health results by enhancing individuals' health-related behaviors, understanding, and skills. Although, health literacy is assessed on reading and speaking skills

that people have in clinical practices (Liu *et al.*, 2020). Thus, a model in assessing critical health literacy of different population segments can be created by addressing the terms and tools related to the field of health promotion (Guzys *et al.*, 2015).

There is increased interest in health literacy in the education setting and especially among adolescents and college students. According to Manganello, 2008, young adults are at a critical age in the development of health related-attitudes and health behaviors. However, although one might hope that maybe the students, particularly science students, will have a better health literacy, studies show that it is not always the book knowledge that will come into use. Their study revealed that the gap between theoretical knowledge about health and current health behaviors of students indicated that there was a need to provide more practical health education procedures (Ishikawa and Yano 2008).

Science education can be seen as the method of enhancing the level of health literacy through analytical thinking and evidence-based reasoning. Holbrook and Rannikmae (2009), postulate that the integration of health-related contents in science curriculum increase the skills of applying the science knowledge to real life concerns. Yeo and Tan (2014), however, noticed that despite students comprehending health concepts in the classroom, they might not necessarily transfer the respective behavior into their everyday life because they do not see a connection between health activities and their personal lives (Guzys *et al.*, 2015).

In addition, perceptions of health literacy have a crucial role in its effectiveness in the perceptions of students. Paakkari and Paakkari (2012) stressed students do not always perceive the importance of health literacy and, therefore, may never have a priority on the importance of health literacy unless it fits their interests or life situations. In a similar way, (Kutcher *et al.*, 2016) Study noted that students respond to and act on health-related information depending on their social determinants, including family background, peer pressure, and ability to access and use the same-reliable information.

Health literacy is increasingly viewed as a key factor affecting health outcomes and shaping public understanding in everyday life. It allows people to obtain, comprehend, assess, and utilize health information in ways that promote disease prevention, management, and well-being. According to the (World Health Organization, 2016), health literacy is more than just an individual capability; it serves as a community resource that enhances health equity and empowers populations (Nutbeam, 2008) describes health literacy as functional, interactive, and critical, highlighting varying levels of participation in decisions related to health. Recent findings point out that health literacy plays an essential role in daily activities, such as making food choices, reading prescription labels, navigating healthcare services, and understanding public health messages (Sørensen *et al.*, 2015). With the rise of the digital age, much of this process has moved to the internet, where eHealth literacy the skill to effectively use online health resources has become a crucial addition to the overall concept. Indicated that factors influencing eHealth literacy include internet usage behaviors, demographics (like age, education, income, and ethnicity), psychosocial aspects (such as self-efficacy and perceived usefulness), and health status. This demonstrates that individual awareness in daily life is shaped by personal skills and overall opportunities to engage with health information (Chen *et al.*, 2025).

Similarly, a meta-analysis by (Barbati *et al.*, 2025) showed that organized digital health education significantly raised eHealth literacy, affirming that health literacy can be developed to improve awareness about disease prevention, lifestyle choices, and health promotion. This relevance is amplified during

public health emergencies: According to (Pakkiri & Okan, 2020), health literacy was undervalued during the COVID-19 pandemic. However, people with higher health literacy were more capable of adhering to prevention guidelines, minimizing misinformation, and staying resilient in uncertain times. In Pakistan, (Munir & Ahmed, 2025) illustrated that the engagement of healthcare professionals on social media positively affected public health awareness and education, providing evidence that perceived usefulness of platforms like WhatsApp and Facebook motivated more people to connect with reliable health information.

This implies that health literacy in daily life hinges on trust in information sources and the availability of content in culturally relevant formats, making online communication a potent means for fostering awareness. Beyond individual gains, health literacy also impacts larger public health results (Berkman *et al.*, 2011) discovered that low health literacy was linked to worse health outcomes and higher hospitalization rates, while (Kickbusch *et al.*, 2013) suggested that enhancing health literacy through community campaigns could lessen health disparities by allowing marginalized groups to engage more comprehensively with healthcare systems. Newer evidence strengthens this view: a preprint systematic review (Causio *et al.*, 2025) found that digital health initiatives including applications, telemedicine, and multimedia resources consistently enhanced health literacy, although their success was influenced by access barriers, socioeconomic differences, and challenges in engagement. This indicates that improving everyday awareness requires not just the delivery of information, but also a focus on equity.

According to the literature, the growing body of literature that shows the associations of low literacy with the safe environment reflects positively on the need to promote a culture of appreciating health literacy (Paasche *et al.*, 2005). Patients with heart failure are of specific concern since they are burdened with as many as chronic conditions like diabetes, coronary arteries disease, and hypertension along with a significant number of medications that need to be regulated. Our research subjects were impaired immensely by their lack of appropriate social and financial resources. According to (Murray *et al.*, 2009), the Bonanza golf course developed into a high-tech approach. Further, an examination of the literature on the environment air pollution, often it comprises of a mixture of numerous toxicants. Air, both indoors and outdoors, has specific pollutants that vary based on the toxic elements nearby. However, common harmful substances, like polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds, and heavy metals, including lead, are usually found in these environments (Koester *et al.*, 2021).

Health Literacy has been of great importance in ensuring good practices and decision-making amongst the people especially the students whose health lifestyle is in an early stage of lifelong health habits. Nutbeam (2000) points out to define health literacy as not merely the capacity to read and make sense of health information; rather, health literacy has more to do with cognitive and social competencies that dictate whether or not and to what extent a person is motivated and able to access, understand and use health material in a productive manner (Sentell *et al.*, 2020). Research indicates that multiple studies have shown the role of health literacy in improving awareness and encouraging positive behaviors. For instance, according to (Sorensen *et al.*, 2012), health literacy is what provides people with a capacity to assess health information critically and, as a result, they achieve better self-care, prevention practice, and the responsible healthcare services coverage. At the level of students, more so students undertaking the study of science, health concept closure would tremendously shape everyday decisions, such as diet, hygiene, exercise, and psychological health.

According to Manganello (2008) research studies, adolescents and young adults have a problem interpreting health information thus making poor health choices. Yet learners with the science background

perhaps have an edge since they have been introduced to scientific thinking which will help them in making effective complication of health. However, it can be said that just because someone is engaged in the science field does not necessarily make him or her to have high health literacy without specific sensitization efforts (Vaezihir *et al.*, 2022). According to one of the studies by (Paakkari & Okan, 2020) there is a need to inculcate health literacy into educational curriculum particularly in young people because they experience health-related matters at early ages and as such, resolve to think critically and make informed decisions concerning health. Likewise, (McCormack *et al.*, 2017) study has demonstrated that the greater the health literacy of students, the more they are aware of the prevention of diseases and health promotion and risk management in their lives.

According to the literature, the growing body of research showing links between low literacy and a safe environment promotes promoting a culture that prioritizes health literacy (Paasche *et al.*, 2005). Patients with heart failure are especially vulnerable because of the many medications that need to be managed, as well as a host of related chronic illnesses like diabetes, coronary artery disease, and hypertension. Our research subjects were greatly handicapped by their lack of financial and social resources. In 2009, Moreover, many toxicants are already widely used in the literature of air pollution in the ambience. However, it usually contains such poisons as polycyclic fragrant hydrocarbons (PAHs) and volatile organic complexes as well as other heavy metals such as lead. Different pollutants in both indoor and outdoor air are dependent on the different harmful materials within the environment in which the pollutants are produced (Koester *et al.*, 2021).

The majority of the literature indicates that health literacy is important for protecting the environment Weiss's (2003). This is supported by studies that look at how health-related literacy is measured, how various health issues are impacted by low literacy, and how tactics to mitigate the effects of low literacy through improved service delivery and altered communications are tested over time. It is evident that the two primary groups of dangerous compounds used in weapons are nerve and mustard gasses. Rather than being gasses, they are viscous liquids. There isn't much volatility in them. It is remarkable that these substances were developed with the ability to harm people through any exposure technique and to function well at low concentrations. The fact that these primary agent types haven't changed in over 50 years is noteworthy.

Throughout and following the COVID-19 pandemic, a clear change has occurred in the delivery of healthcare services. Therefore, identifying any delays caused by patients' insufficient eHealth literacy is essential. Patients will not benefit much from eHealth resources if they are unable to use the various tools and technology needed for therapy. Reduced use of eHealth in cardiology is hampered by older age, low socioeconomic status, and inadequate health literacy (Brørs *et al.*, 2020). Over the past few weeks, decisions influenced by and influencing health literacy have changed how state policy, national mortality rates, organizational operations, family relationships, and the global economy are all impacted (Sentell *et al.*, 2020).

Nowadays, many health problems exist, particularly due to the pandemic, which led to issues in mental health and health communication negatively impacting the well-being of many people. Factors such as school closures, reduced physical activity, fewer outings, social isolation, and increased use of smartphones all contributed to these challenges decreased the emotional health of university students in the short-run, was indicated by a subsequent increase in the level of anxiety and depression (Nguyen *et al.*, 2021). By the use of this literature pointed issues it is being requested to view what can enhance health

literacy and how environment can be preserved by people who have acquired their education in the universities against the misuse of different hazardous substances hence producing air pollution.

RESEARCH METHODS

The pilot study was done by picking five of his university interviews. Interview questions were asked on both male and female students, whose data we gathered. The interview questions were put in such a way that they would be informative on the role and significance of health literacy in creating awareness and prevention dimensions of misuse of the various dangerous materials and dangers involved in the surroundings. In that regard, as a significant component of my study, a pilot study was conducted. The interviewing variables among the participants differed in terms of gender, qualifications and age. The feedback that was obtained allowed us to collate data via the samples that were taken. The feedback of the participants and the outcomes were promising. The feedback and answers that were given by the participants in response to the questions asked in the interview process were informative. By the consent of the participants, I made a voice recording. Participants also felt contented with the contents of the interview questions. It happened as an in-person interview, after which it was transcribed with the direct listening. Researchers made their own observations collecting data of 300 students in questionnaires and 10 students using interviews all around the university. Participants must sign a consent form to indicate that they agree to take part. In total, it took six weeks to gather the data. To address ethical issues, I reached out to the participants in a responsible way and shared details about my research. We found a suitable time for both sides. At the agreed meeting place, I met the participants at their scheduled time. They gave their approval by signing the consent form. The participants shared their information with me. I assured them that their details would remain private from others.

There is a detail of themes emerged from the data

Theme 1: Understanding of Health Literacy

Health literacy became a knowledge that each and one of us is entitled to as a right to know since being healthy is a right of any human being. And we need to be informed more about something that concerns our health and inform more people about health.

Health literacy could guide us through saving our health and avoiding health challenges, as well as addressing received health concerns better. It is because we human beings are not aware of what we utilize in our day-to-day life. Being health literate means that when we consume processed food or we consume processed juice we are aware of its impact on health then we seniors can take care of our health.

It implies basic knowledge of the components of health literacy and basic knowledge of the physical and various hazardous materials properties and common application of the practice (S3).

This information demonstrates that it refers to a complete awareness of its physical and various detrimental material properties, everyday practical applications, and an understanding obtained at the ground level on the elements of health literacy. Such as, some of the Participants Noted.

I think we should get information about our health as we who consume daily food don't know what was good for us or not. For example, some people do not eat milk products, some people do not eat wheat products, and they have allergies, if they know about health, then only they will be able to avoid these products and we should always use the same products. We should eat foods that are good for our health and that benefit (S4).

The information shows that we eat food on a daily basis and we do not even know what is beneficial to our bodies and with that I feel we need to know more about our health. As an example, there are people who are not able to eat dairy or wheat products because of allergies; however, in case they are aware of their health problems, they will be the only people who will be able to avoid them, and we must always stick to the same ones. We should to eat food that is strong to our body.

In my opinion, we should get up early in the morning to keep our health good we should go for a walk Firstly five times prayer Reading was one of our best exercises because we need a lot of exercises to maintain good health. We need fresh air more (S2).

The information suggests that for good health, it is important to rise early and go for a walk. Starting our day with five prayers is helpful since we need plenty of exercise to stay healthy. Reading is also a great activity. Additionally, we benefit from having more fresh air.

Health literacy is not simply the ability to read health information, but the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions (S7).

Health literacy goes beyond basic reading skills. It involves the ability to access, process, and comprehend health information in ways that allow individuals to make informed decisions about their well-being. This implies that health literacy is a multidimensional concept that connects knowledge, understanding, and decision-making in daily health practices.

Improving health literacy empowers individuals to take control of their health, fosters self-care, and reduces health inequalities (S3).

Stresses the empowering role of health literacy. When individuals understand health information effectively, they become more capable of managing their health, engaging in self-care, and reducing dependence on costly healthcare interventions. Furthermore, improved health literacy can reduce health inequalities by giving people from diverse social and economic backgrounds the tools to safeguard their health more effectively.

Theme 2: Awareness of about their environment

There are views about the misuse of different harmful material s through workshops, and seminars, and we can play TV programs. And factories that manufacture different harmful material s should be aware of the dangers of different harmful material s in different harmful material products. Few Participants, Show that.

Health literacy may assist us in preserving our health, preventing health issues, and managing existing issues more effectively. Different harmful material s was used in our daily life which the common people do not know like processed food and fast food, most

different harmful material s was used in them (and most children are addicted to fast food, the children of the people before today were more powerful, they had more power to do everything (S2).

The reply indicates that experts in both the environment and agriculture recognize the damaging effects of certain substances. While environmentalists are concerned about the harm these materials inflict on nature, agricultural experts point out their adverse effects on plants. This shows a common worry among varied professions about the negative effects harmful substances have on ecosystems and farming.

Environmentalists about their harm to the environment, and agricultural specialists about their harm to the plants (S15).

This message highlights how vital it is for kids to learn about the dangerous substances they encounter every day. The individual responding thinks that educational institutions should organize programs to raise awareness among children about the risks these materials pose. Nevertheless, there is confusion regarding how much and in what ways these substances are utilized, pointing out a knowledge gap that must be filled with organized teaching initiatives.

I think children should know about different harmful materials and we should conduct activities in our schools and colleges to inform children about the use of different harmful materials we were using daily. It is not known how much and how to use these different harmful materials (S3).

The information above shows that it is important to teach farmers how to reduce the use of harmful substances that can damage their crops or the environment. Instead, they should use safer alternatives. The participants also share concerns with agricultural specialists regarding the negative effects on plants and with environmentalists about the damage to nature.

Theme 3: Misuse of Environment

Different harmful materials s should be used sparingly and when you buy different harmful materials from the store, you must read its label. And educated people can easily understand this thing and they can avoid the harms of different harmful materials; the harms of different harmful material s are very dangerous for their health.

All different harmful material manufacturing factories should dispose of the waste material of the factory, or its different harmful material water properly and not put it in the same crops. Crops may also be damaged animals may also be damaged and humans may also be damaged (S1).

Another applicant stated that.

The most significant of these problems were laboratories using different harmful material s and discharging them directly into the environment without any pre-treatment, industries discharging effluents into the environment untreated, and indirect different harmful material types such as traffic smoke that are released into the environment unchecked(S7).

This data show that the most major of these issues includes laboratories employing different Productions are dumping waste into the environment without proper treatment, which includes

harmful materials. Additionally, various types of harmful substances, such as smoke from traffic, are being released into the environment in an uncontrolled manner. The participants provided their probable feedback regarding counter measures against the risks of various dangerous materials in the following manner: when people visit the shops to purchase the different harmful materials, we will then advise them how to use the different harmful materials as well as the dose required to take the different harmful materials. They settled that the use of various harmful materials should not be brought too close to our young children so that they cannot get in touch with them and that when we have different dangerous materials to use then that we should have our hands covered with gloves so that none of us can use it. Avoid touching the nose and eyes using varied harmful substances.

Keep different harmful materials. Dust and vapor may escape from an open container, while gases and suspended material may penetrate this, causing the nature of the different harmful materials to change (S7).

This data indicates that the Keep the environment clean for your good health. Keep your streets and neighborhoods clean. Cleanliness is half of faith keep the environment clean for your good health. Keep your streets and neighborhoods clean. Cleanliness is half of faith. Another participant stated that.

I think different harmful materials should not be used that were not read and used for a year or two and have passed their expiry date (S5).

This data shows that Different harmful materials that have been stored for a long time and have passed their expiry date should not be used. Because such different harmful materials were harmful to health and people have been dying.

DISCUSSIONS

We can prevent health problems, manage current problems more skillfully, and maintain our health with the help of health literacy. because we humans are unaware of the things we utilize on a regular basis. The public should be aware that processed foods and juices have many negative health effects, according to the literature. The results of this study are consistent with Schulz and Nakamoto's definition of health literacy, which is a set of theoretical knowledge, applied knowledge, and critical thinking abilities related to declarative information, procedural knowledge, and decision-making skills is likewise to (Liu *et al.*, 2020). Health literacy, in my opinion, is information that every human being should be aware of because it will enable us to better take care of our health by educating us about what is good and bad for us. Therefore, everyone should be aware of their health and all the information that is associated with it in order to live a good and healthy life is likewise to (Berkman *et al.*, 2011).

They will enhance the effectiveness of public health outcomes due to population-level health literacy programs which hold a high possibility to raise the health knowledge, skills, and the health behavior of the people is similar to (Chen *et al.*, 2025). Our conclusion is that matters of ideas and practices concerning health promotion could be employed in order to design a system to evaluate critical health literacy of different demographic groups. We realize that it might not be easy to handle the complexity of various concepts to do so. According to (Guzys *et al.*, 2015). In my opinion, in order to maintain the great health, we need to educate our schoolchildren regarding health literacy and offer them educational possibilities in the classroom. Children need to be taught about first aid and the process of first aid delivery is likewise to (Jahan *et al.*, 2024).

It has managed by having proposed a health literacy, which has also been suggested by the Institute of Medicine that it should be proposed by other academics and other professionals is likewise to (Berkman *et al.*, 2010). In case of good information being passed to the students about the misuse of various harmful substances, they will not only take care of themselves but also take care of the health of the people and the students can use various social sites like Facebook. In the discussions most people are discussing all kinds of dangerous things, awareness of the danger, and here they can even enlighten the students and the population about what to use, what to apply, and how to use the various harmful substances is similar to (Paasche *et al.*, 2005). Will we survive with it a long time? Education should be availed to the students on the appropriate steps they should take to avert the different harmful substances in the wrong way. Education of the different age groups can be attained through awareness campaigns and proper provision of information using social media concerning the addictions to various harmful substances is likewise to (Brørs *et al.*, 2020).

When students get useful information about the improper use of harmful substances, they can protect both their own health and that of others. Additionally, they often turn to different social media platforms, like Facebook, for support is likewise to (Koester *et al.*, 2021). What duration of time will be required on its usage? Instructors should receive comprehensive data on ways of preventing the assault of various harmful substances. Awareness of various potentially harmful material addiction can be increased among all age groups in comparison with the rest through campaigns and talked-about information sharing on social media is likewise to (Hassim, 2016). Nonetheless, in search of the solutions to the problem, the study also aims to find the comparable means of increasing health literacy since the construction of the healthy and protective environment against the misuse of various harmful substances in order to preserve the population is also needed (Paasche *et al.*, 2005).

CONCLUSIONS AND RECOMMENDATIONS

Most of the people surveyed were well aware of the harmful effects of various toxic substances in our society. Science students pointed out the limitations of different toxic materials when it comes to understanding health literacy. It was found that a lack of resources and facilities has altered our surroundings. However, a bigger issue is the improper use of these harmful substances; while they may appear beneficial to some, they cause trouble for others. This misuse is damaging our environment and hurting many individuals. It is crucial for us to address these concerns. We need to raise awareness about toxic materials that have been safely stored and are now expired, urging people not to use them since they pose serious health risks and have led to fatalities. Additionally, educational seminars, workshops, and tutorials are available to promote a safer environment and protect individuals from everyday dangers.

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