

Research Article

# The Paradox of Health Literacy: Unchanged Nutritional Behaviors of Literates

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## Abstract

Unhealthy eating practices are the key risk factors for non-communicable diseases, especially in low- and middle-income countries. Avoidance of this issue could cause future health implications to the people of the entire world. The objective of the current research was to assess nutrition behaviors in health literates with different health literacy levels and assess the effectiveness of health education courses in improving these behaviors. A qualitative study design was carried out using grounded theory under the interpretive and critical paradigm as the methodology. Purposive sampling was used in the field of health education. Information was collected through open-ended interviews, transcribing, coding, and grouping them into themes. Thematic analysis was then utilized to analyze the data. The study found that deeply rooted dietary habits and limited access to health information are still caused by systemic problems like negligence and a poor national curriculum. Although health education has the potential to improve health outcomes, these barriers limit its potential. The results of the study indicate that since the development of nutrition behaviors is still in its early stages, policymakers must act carefully to prevent the raising level of nutrition-related issues. In order to address this, the health education curriculum ought to be revised to place more emphasis on courses that enhance health literacy. Although, this study has been completed with the small population sample, which may not be sufficient. In this area, further long-term studies with large number of participants are needed.

## Keywords

Health Education, Health Literacy, Nutrition Behavior, Unconducive Curriculum

## 1. Introduction

Excessive fast food and sugary drinks are major contributors to malnutrition and health related issues worldwide. To prevent long-term health problems, health education is crucial in promoting healthier eating behaviors and encouraging people to make better food choices. [1]. Malnutrition, such as

overweight, obesity, and undernutrition, is a worldwide health concern because 88% percent of countries are facing the effects of food malnutrition, caused by diets that are low in fiber, fruits, and vegetables, but high in meat, sugar, processed foods, and unhealthy fats [2].

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People are suffered from hunger and malnutrition, because of inability to select the appropriate food and eating habit even they have foods. In this scenario, we cannot underestimate the role of health /nutrition education to make people healthy. Health literacy is crucial for healthcare, prevention, and health promotion, empowering individuals to make informed health decisions across home, community, social media, workplace, healthcare systems, marketplaces, and political arenas [3].

There are three types of health literacy i.e.; first functional health literacy which describes the ability to find and understand health-related information, second interactive health literacy, which describes the ability to exchange views about health issues in one's environment and to transfer the information received to one's own situation and third, critical health literacy which describes the ability to critically assess and question information in order to actively promote one's own and others' health [4].

Health literacy is the ability to access, understand, and use health information. The nutrition literacy is emerged as a different form of health literacy. The discussion of scholars reflects the need of health literacy for nutrition behavior development. Nutrition literacy should reflect key elements of health literacy as well as food literacy constructs [5]. A healthy diet is the cornerstone of disease prevention. It can lower the risk of disease development. The eating behavior is also very importance. Without knowledge, integrating food consumption is possible to interact with them, influencing human health [6]. Many studies have suggested that the risk for disordered eating behavior is more prevalent in students who studies nutrition education when compared with students from other courses [7].

In this scenario, a very few studies have been done in this field even though they are not able to identify the exact problem of health education and nutrition behaviour. A study showed that lower level of education is strongly correlated with worse health outcome. Still, it is not known about which education degree influences health outcomes [8]. Another study reported that, there are no widely accepted guidelines and contents in curriculum of health education. Therefore, It has been challenge to provide effective locally acceptable curricula for health education to change nutrition behavior [9].

In this backdrop, the researchers felt that why the literate person's behavior is not being improved by health education, and what are the barriers to extend health literacy and positive nutrition behavior development through health education. Researchers themselves directly observed the unhealthy nutrition behavior of the people in the work places, hotel, restaurants, and different shops. Researchers did not find this type of research from the literature reviewed. After that they tried to find out the nutrition behavior of health literates and to analyze the effectiveness of health education course through the behavioral outcome of the literates.

## 2. Methods and Procedures

This study employed a qualitative research design situated within the critical and interpretive paradigm. Grounded theory was selected as the methodological approach, as it provides a qualitative process aimed at generating theory to explain how health literacy influences nutritional behaviors. This method is particularly effective for understanding complex processes, actions, or interactions on a substantive topic [10].

### 2.1. Participant Selection

Participants were intentionally selected from a cohort of health education specialists, chosen for their expertise and alignment with the study's objectives. A total of two female and three male health literates were included until data saturation was achieved, ensuring a comprehensive understanding of the topic.

### 2.2. Data Collection

Data were collected using an open-ended interview guideline, enabling participants to express their insights without constraints. The central guiding question was: "Why do people, despite being health literate, not change their nutritional behavior?" Interviews were audio-recorded, then transcribed verbatim for analysis. Reflexivity was practiced throughout the data collection, with the researcher maintaining a reflective journal to acknowledge potential biases and preconceptions.

### 2.3. Data Analysis

Thematic analysis, as described by Boyatzis (1998), was utilized for organizing and analyzing the data. As a stepwise approach, interviews were transcribed and coded using open coding, followed by the development of basic, organizing, and global themes [11]. Thematic patterns were interpreted to understand underlying behavioral factors, thus advancing theoretical propositions. The trustworthiness of the data was enhanced through member checking, where participants reviewed their transcripts to ensure accuracy, and through triangulation by comparing the information with existing literature on nutritional behaviors and health literacy.

#### 2.3.1. Translation and Interpretation

A professor from Tribhuvan University, fluent in both English and the local language, assisted with the accurate translation of transcripts and thematic categories. This ensured linguistic and cultural fidelity in the data analysis.

#### 2.3.2. Ensuring Rigor and Validity

The credibility, transferability, dependability, and confirmability of the research were addressed using a clear audit trail, and peer debriefing with qualitative experts. This ap-

proach ensured that the findings were not only grounded in the information but also reflective of the broader social and cultural context.

## 2.4. Ethical Considerations

The study did not include human or animal trials or any risk of participants and researcher. The participants were not under/below 18 year. Therefore, this study did not think the need of ethical approval from any institution. Even though, this study took the verbal and written consent from the participants in English and Nepali (local language) prior to the study. Anonymity and confidentiality were strictly maintained, and participants had the right to withdraw from the study at any stage. To uphold ethical standards and protect participants' identities, pseudonyms were used, maintaining anonymity throughout the research process.

Being health educators, the authors had to be mindful of how this dual role may impact data interpretation and relationships with participants. Aware of the influence power dynamics may exert on the data gathering and interpretive process, the researcher underwent reflexivity, an intentional and systematic process of understanding how one's own experiences, biases, and identity as a health educator may shape finding comprehension. Which included contemplating individual beliefs about education, public health policies, and more. To maintain positionality, the researcher carefully managed potential biases through ongoing reflexivity and awareness of power dynamics.

## 3. Results

Health education is expected to positively influence eating behaviors, yet many participants expressed dissatisfaction with this notion. When asked why people, even those who are health literate, do not change their nutritional habits, participants highlighted several factors that affect this behavior. Based on the transcription and verbatim accounts, the following global themes were identified.

### 3.1. Disconnect Between Knowledge and Practice

The development of nutritional behavior among health literates is often viewed as a paradox, despite the expansive scope of health literacy, which includes nutritional training, media advocacy, public health campaigns, research, field studies, and school-based nutrition education [12]. Despite being health literate, developing positive nutritional behaviors through education has been challenging due to the lack of responsiveness to the specific needs of people in Nepal. One of our participants illustrated this issue, stating:

Even though I've studied health education, I don't really think much about my own nutrition. If I don't care, how can I expect others to? I eat noodles for breakfast, sweet tea and

biscuits throughout the day, and way too much rice in the evening whenever there's meat. yet, I still tell others to eat more green vegetables, because I know the science behind good nutrition (A male participant, 18 -07-2023).

This quotation illustrates the challenge of applying acquired knowledge from health education theories. Despite understanding the importance of fruits and vegetables, the individual still prefers non-vegetable foods. Studies have demonstrated that fruits and vegetables are essential to a healthy diet, and consuming them in sufficient daily amounts can substantially lower the risk of major diseases, including cardiovascular diseases and some cancers.

In fact, low intake of fruits and vegetables is estimated to contribute to approximately 31% of ischemic heart disease and 11% of strokes worldwide. A daily intake of at least 400 grams of fruits and vegetables (excluding potatoes and other starchy tubers) is recommended for chronic disease prevention [13]. Most current teaching methods in health education primarily focus on imparting knowledge. Consequently, these approaches make it challenging to effect real change in public nutrition behaviors. Nevertheless, health education campaigns are essential and should be actively pursued. In this context, another participant noted that,

We learnt that vegetables should not be chopped too finely and should not be cooked too much after cutting, but that is limited to the certificate only. Nowadays people eat more junk food, like pasta pizza, burgers, we also eat the same. It is good to eat the potatoes and bread of the village. They eat junk food because they don't have health education. Even those who have health education eat noodles in breakfast. What's different? We sell coarse rice at home and buy polished rice (A male participant, 22 -08-2023).

To support this observation, a study highlighted the global lack of nutrition information in skills education [14]. This finding suggests that there is little distinction between those considered health literates and those who are not. Such outcomes may stem from inadequate teaching methodologies in health education, which often fail to be practical and effective. A similar study noted that adequate health literacy is crucial for individuals to make informed decisions regarding their health behaviors [15].

### 3.2. Cultural and Social Influences on Nutritional Choices

Our participants emphasized that eating habits are very much shaped by family and cultural habits, which have a tendency to undermine the efforts of health education. Based on Bourdieu's theory of cultural capital, it was evident that food selection is very much guided by parental and social norms, sometimes at the expense of overall health and well-being. This suggests that health education interventions need to factor in cultural background and family influences in order to promote healthier eating habits effectively. One of our participants had a special experience and said:

*I know that plastic-packaged food is not healthy, but I eat it because I don't have a choice. My parents give it to me for convenience. Instead of traditional foods like chiura or Satu, I've developed a habit of eating noodles, crisps, and sugary drinks. There were times when I relied solely on noodles for three to four days, which led to fainting spells due to dizziness (A female participant, 28 -08-2023).*

This practice and event illustrate the engagement of habitus and cultural dimensions, calling on Bourdieu's theory of cultural capital and differential achievement. The literature under Bourdieu's theoretical framework discusses that parents' cultural capital imposes beneficial outcomes on the offspring of higher social background, while lower social status can hamper successful socialization [16]. The partial provision of health education at school and community levels depicts the dire need for full-fledged nutrition education among individuals, families, and society.

Besides, a study shows that education of a grandmother has a significant effect on the nutritional status of children, with indirect as well as direct [17]. In patient education, health education practice is in its infancy stage, and workplace-based health promotion activities are virtually non-existent. Health education can expand its activities in all sectors of Nepal.

Evidence suggests that eating habits and food selection are shaped by the complex factors outside of personal choice. Among the key influences are age, gender, culture, education, income, health, and nutritional and culinary knowledge and skills [18]. Health education imperatively needs to be well implemented in the behavior change scenario in order to foster good nutritional practices.

### 3.3. The Inadequate Curriculum and Educational Practices

Health educators have suggested that teaching is primarily delivered in an apprenticeship model rather than an appraisal model, and the application of assessment tools is frequently not based on contemporary educational theory. This highlights a significant weakness in health education in Nepal, with the need to introduce current teaching theories into the curriculum.

The traditional health education curriculum has been ineffective in creating a conducive learning environment, despite its potential to relate to people's daily life experiences [19]. Health education has a tendency to address exotic cultures, environments, and societies that may lack applicability to local Nepalese contexts. For instance, while between 3.5 kg and 4.5 kg is the normal average birth weight in the United States, 2.5 kg is adequate in Nepal. This is just one instance of how health education can be influenced by cultural differences. Moreover, these cultural variations extend to nutrition and behavioral development and encompass food production, processing, and consumption patterns. One of the participants in our study expressed that,

*The main problem lies in the curriculum. We are expected*

*to study around 20 to 25 theories in health education, yet these theories are seldom applied in practice. Our teachers present foreign theories to us without considering our behavioral context or facilitating meaningful change (A female participant, 18 -07-2023).*

The quotation illustrates the contradiction between discourse and practice; individuals discuss the goodness of organic produce, nutritional value, and how they impact human health, yet their consumption behaviors reflect that they crave inorganic food. The discrepancy exposes the poor integration of health education theories (praxis) into everyday practices. As provided for in the literature, a progressive curriculum must be in alignment with evolving needs, aspirations, and values of society, as a critical tool for addressing problems within society [20]. However, the findings of this study do not support this assertion. In this context, it is imperative for the state to develop a conducive curriculum that fosters behavioral change among learners. Furthermore, one participant raised an important question:

*"People are malnourished because they don't know how to eat. Malnutrition is also seen in the United States now ... which is due to lack of food?" (A male participant, 18 -07-2023).*

The quote indicates that the nutrition education curriculum has to give the precedence of practical work that promotes the health of individuals. It is clear that correct curriculum has the essential role of molding or changing the nutrition behavior of the students. For this, a study showed that reading food labels is a great challenge for the general public, particularly in serving size understanding. Misinterpretation of these labels may result in over-estimation or under-estimation of nutrient uptake, which will be detrimental to health. In case they have no idea on how to consume, the advice will not be appreciated in respect to their wellbeing [21].

### 3.4. Negligence in Periodic Update and Scope Identification

The negligence in periodic update and scope identification of health education curriculum is the major weakness. A participant said that,

*"It is essential to make the curriculum both practical and compulsory. Currently, few people engage with this subject, and not everyone has had the opportunity to study it. As a result, its importance may not be fully recognized" (A female participant" 28 -08-2023).*

This quote stresses the imperative need to reform the existing health education curriculum and make it a compulsory subject to reach the "Health for All" objective. The lack of research on health and nutrition education in Nepal works to further strengthen this requirement. To support this, it was found in a study that although there are few published studies aimed at nutrition and the particular requirements of low-literacy populations, several key findings can be extracted from existing nutrition-focused health literacy studies

[22]. Another participant contributed to this discussion by stating:

*“The responsibilities of health educators are often taken on by other professionals. In schools, teachers from various subjects instruct students on health and nutrition, which can compromise the effectiveness of education. Additionally, when doctors provide health education, it raises the question: who is responsible for patient care? During the COVID-19 pandemic, health education should have been led by qualified experts, yet their presence was often lacking. This highlights a crucial issue: where were these essential professionals in our public health response?” (A male participant, 18 -07-2023).*

This statement is a reiteration of the necessity of properly defining health educators' responsibilities and tasks both in the educational system and between public health programs at large. If health education and nutrition come under the domain of professionals from other disciplines (either school teachers or doctors), it can dilute its effectiveness.

Similarly, health education curriculum encompasses policy and habits of health systems, patterns of health status, and health determinants. Local based health education activities need to be done in the situation of using community participation in order to improve the health of any population. Needs, resources, members, and organizations of the community should be known [23]. If the government does not bring about proper changes in people's life style and health, it can be a threat in the form of both communicable and non-communicable diseases for developing countries such as Nepal [12].

## 4. Discussion

This study emphasized how important it is to develop healthy eating habits in order to avoid bad ones. To promote healthy habits, health education is one of the most crucial instruments. Nonetheless, Nepal is still in the early stages of developing dietary patterns. Should authorities fail to prioritize health education in a timely manner, the incidence of infectious and non-communicable diseases may continue to rise. The participants in the study shared these concerns. One of health education's main shortcomings has been identified as its incapacity to effectively promote healthy eating habits. A bad curriculum, a lack of integration of effective teaching practices, and the gap between health education theory and practice are some of the other shortcomings highlighted in the research. These issues need to be addressed to improve health education outcomes and ultimately promote better nutrition habits.

### 4.1. Theory Based Curriculum

Our study revealed that the nutrition behavior of health-literate individuals is still in its early stages of development. While students may understand nutrition theory, their

dietary habits (such as eating noodles, crisps, and sugary beverages) reflect a disconnect between knowledge and practice. This gap suggested the need of nutrition education that convert theoretical knowledge into practical applications. The parental influence and cultural backgrounds also contribute to poor nutrition behaviors.

In contrast, a study revealed that theoretical knowledge of the teacher enhances student's competencies, which leads to positive learning experience in students [24].

Another study emphasized that theories not only help us comprehend a phenomenon but also enable critical analysis and foster constructive improvements. Theory plays a vital role in understanding the complexities of education, the development of knowledge, skills, and professional identities. It serves as a foundation for generating new theories informed by practice, while also contributing to the development of shared knowledge and collective understanding [25].

### 4.2. Socio-cultural Influence on Nutritional Choices

This study found that the cultural practices and habits of family members play a significant role in shaping nutritional behaviors. One of the primary factors influencing eating habits is social influence. People tend to adopt the eating habits of those around them, often believing that the quantity consumed by others serves as a guide for how much they should eat, helping to avoid overeating [26]. To promote healthy eating, it could be beneficial to draw attention to the intention and actions of others [27].

### 4.3. Status of Conducive Health Education Curriculum

This study shows that the outdated curriculum of health education does not provide a healthy learning environment. Teaching strategies, and activities must be in real-world applications. A strong research competency among faculty members could enhance the curriculum, teaching methods, and educational system. In this regard a study reported that, despite its claims to do research, the Faculty of Education has not yet developed any relevant curriculum materials, pedagogical strategies, or a national educational framework [28].

Another study claimed that Improving population health is shaped by various factors beyond medical education. The health education curriculum should focus on the structure, culture, and orientation of the entire health system. It should prioritize rural health development by integrating community-based learning and education into the goals of undergraduate health education programs [29]. Health education curricula should include a robust educational component that fosters health literacy and encourages critical thinking to positively influence behavior. To promote meaningful discussions about the potential implications and future directions of practice, curricula should be more open, collaborative, and

innovative [30].

#### 4.4. Negligence in Periodic Update and All Scope of Health Education Curriculum

The primary message of this study is the importance of conducting direct and relevant health education campaigns to promote healthy eating practices. Complex nutrition practices are those for which practitioner-based individualized advice is needed that takes into account medical, social, and other cultural factors. Similarly, a study reported that even though the doctors may not always provide the best dietary advice, doctors play a critical role in identifying patients who are at risk. Nutritionists are better qualified to provide targeted nutrition therapy in these situations. As a result, health educators are prepared to offer effective counseling. As a result of their resources and experience, health educators are well [31].

Health education improvement is an issue of regular updating of the curriculum; it is a right entitled to every human being. A study from Poland reinforces this by stating that most international studies recognize health education as one of the rights for children and youth, which emphasizes health as one of the goals of education. Health education is incorporated into most school curricula, where teachers connect health-related topics with the content in their subjects. It also pointed out that students in health and physical education had better improvements in positive mental attitude, with  $P < 0.001$ , and healthy eating, with  $P = 0.007$ , compared to other disciplines [32]. This proves that an updated health education curriculum, adapted to the culture and society of a particular place, has better influences on improving people's nutrition behavior.

## 5. Conclusion

Incorporating health education in school curricula can help in developing favorable nutrition behaviors. However, neither the government nor health workers or the communities have really made health education a priority and taken it seriously in Nepal. If the policymakers do not quickly put an end to it, the problem may very well aggravate. Thus, it is important in Nepal to redesign, restructure, and broaden the scope of health education so as to enhance health literacy among the people. Health education can also ameliorate unhealthy nutrition behaviors, even in adverse teaching settings. Nutrition behavior development is possible through teaching health education as the compulsory subject which is a key to achieve this goal. Even though, the present study has quickly brought attention to the issues with the small population sample for this field, which may not be enough. In this area, further long-term studies with an adequate number of participants are required.

## Abbreviations

HL	Health literacy
NB	Nutrition Behavior
UC	Unconductive Curriculum
UNB	Unchanged Nutrition Behaviors
NPU	Negligence in Periodic Update

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## Author Contributions

**Bishnu Kumar Adhikari:** Conceptualization, Data curation, Investigation, Methodology, Project administration, Software, Validation, Visualization, Writing - original draft, Writing - review & editing

**Prakash Sharma:** Conceptualization, Formal analysis, Project administration, Resources, Supervision, Validation, Visualization, Writing - review & editing

**Surendra Giri:** Conceptualization, Formal analysis, Methodology, Project administration, Supervision, Validation, Visualization, Writing - review & editing

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## Conflicts of Interest

The authors declare no conflicts of interest.

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