

# Promoting Healthy Eating Habits And Lifestyle Choices In Schools And Educational Institutions

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## Abstract

Concerning the quality of diets of individuals, nutrition awareness is a fairly fresh concept that appears to play an important role; however, the impact of nutrition literacy initiatives on the dietary patterns and nutrition security of children remains unknown. Implementing Methods: A comprehensive examination of the existing literature was undertaken across four different databases (PubMed, Embase, Web of Science, and Cochrane), wherein we assessed research articles that documented the effects of interventions designed to enhance the nutritional status of children. In the end, six articles were selected for inclusion. The average number of participants per study was 224, with an overall of 4016 individuals enrolled in the studies. The inclusion of studies in the review demonstrated a wide range of action heterogeneity. In the end, the divergent outcomes demonstrated that nutrition literacy interventions incorporating technological elements, incorporating multiple modalities, lasting for over four weeks, and conducting in-person sessions were the most efficacious.

**Keywords:** Nutrition security, nutrition literacy, dietary practices, intervention.

## 1. Introduction

Nutrition literacy (NL) can be defined as a collection of personal and situational attributes that enable individuals to adhere to a nutritious diet in accordance with the recommended guidelines for appropriate nutrition [1]. Our prior conceptualization [1] incorporated NL into the more comprehensive and multifaceted notion of food and nutrition

literacy (FNL), which encompasses various facets pertaining to personal competence and knowledge, interactive abilities, and distinct attributes of the food environment. A community attains food and nutrition literacy when its members are capable of selecting and preparing meals that promote their nutritional well-being while considering the sustainability of the food system [1]. FNL encompasses a variety of practical knowledge domains, competencies, and aptitudes, and also signifies an individual's drive to embrace suitable conduct and select nutritious food options for both themselves and others.

Furthermore, the notion of FNL also pertains to the attributes of an individual's living environment that may encourage or discourage the adoption of health-promoting decisions and conduct. Indeed, the implementation of initiatives aimed at fostering a healthy lifestyle, the capacity of healthcare professionals to engage with their patients and community, and the readability of food labels—all of which contribute to the promotion of informed and suitable decision-making—can be impacted by the environment.

From this perspective, the FNL of an individual develops gradually and is contingent on the situation; it plays a significant role throughout all life phases. The concept of FNL appears to be intertwined with that of food and nutrition security (FNS) based on the literature [1]. The state of FNS in developed nations is influenced by the accessibility and usability of secure, nutritious, affordable, and appetizing food, in addition to the capability and opportunity of individuals to obtain and utilize it [2,3].

## **2. Food and Nutrition Literacy (FNL) and Food and Nutrition Security (FNS)**

Certain authors have examined the correlation between FNL and FNS in this context, as it appears that the food preferences of the general public, which are impacted by their expertise and understanding of food and nutrition, could be a determining factor in ensuring that the entire population consumes an adequate diet [4].

In recent literature, a correlation between the two concepts has been extensively documented. Cullen et al. [5] emphasized that food-related behaviors, competencies, and the state of food security cannot be distinguished from one another because they comprise the same concept, namely FNL. Gallegos [6] incorporated FNS, along with other specific skills, knowledge, and socio-cultural factors, into the FNL dimension. All of these components influence an individual's ability to select, prepare, and store food items in a manner that preserves the quality of their diet over time [7]. This finding aligns with a separate study that underscores the criticality of FNL in tackling the "food paradox" dilemma [8]. This matter

reaffirms the division between individuals and the food they ingest and can be summed up as follows: "Although people are becoming more interested in food, they are becoming more estranged from it" [9].

The number of food-related television programs and, more generally, the amount of information available on food products has increased exponentially in recent years. The time that consumers devote to preparing, cultivating, and consuming food is, in fact, declining consistently [9]. Moreover, current food supply chains and behaviors are marked by detrimental attributes such as excessive food production and sales, inadequate adherence to plant-based diets, and adverse effects on the environment, animal welfare, human health, society at large, the economy, and culture [10]. Based on the aforementioned viewpoints, Block et al. [8] ascribed a pivotal function to FNL: it possesses the capacity to profoundly impact human health and well-being by means of educational food programs and initiatives that disseminate information, inspire individuals, and equip them with the means to effectively utilize food.

NL, which primarily concerns itself with the availability of food products on the market and the selection of foods to be incorporated into the diet on the premise of their nutritional properties, is the portion of the FNL concept that is most closely associated with nutrition. Extremely little research has been conducted at the national level on NL in both adults and children; the exception is the study by Tabacchi et al. [11], which evaluated FNL during the validation process of a five-domain toolkit 'preschool-FLAT' designed for children aged 3–6 years. Nevertheless, there is a lack of data examining the correlation between NL and the state of FNS. In light of these considerations, we have made the decision to perform a comprehensive review with the objective of examining the possible effects of NL interventions on FNS. With regard to NL interventions, we examined the impact of food and nutrition education programs, training, and the distribution of informative documents on individuals' access to and ability to utilize food for the purpose of maintaining a healthy diet.

Various measurement instruments were utilized to assess the food habits and consumption patterns of the adolescents. These instruments included the Adolescent Food Habits Checklist (AFHC), a food consumption survey, a food frequency questionnaire focusing on the consumption of 15 specific food items, self-report items extracted from the Youth Risk Behavior Surveillance System (YRBSS) of the Centers for Disease Control and Prevention (CDC), and a 10-item food frequency and amount questionnaire (FAQ). In addition, nutrition knowledge assessments exhibited considerable diversity, comprising the Adolescent Nutrition Literacy Scale (ANLS), a knowledge,

attitude, and behavior (KAB) survey consisting of 18 items, and a 17-item multiple-choice visual format questionnaire.

Post-intervention, two [13,14] of the six studies included reported a negative change from baseline. Kalkan et al. [13] demonstrated a reduction in ANLS and AFHC scores from the initial assessment to the final measurement following the intervention. These outcomes appear to be primarily attributable to the increasing difficulty of the abilities to modify, exchange, and discuss food and nutrition information [19] and to evaluate information on food and nutrition critically [19] following training. This may be attributed to the intervention's inadequate duration of two hours per week for four weeks. Wickham et al. [14] demonstrated that the intake of sugar-added beverages increased while the intake of fruits, vegetables, and water decreased. Conversely, Harley et al. [16] observed favorable outcomes as a result of implementing a curriculum-based intervention in the classroom, highlighting significant shifts in nutrition knowledge and a more pronounced increase in the consumption of fruits, vegetables, and vegetable-only foods during the six-week intervention period in comparison to the control group.

Sirajuddin et al. [17] demonstrated that in the intervention group consisting of 43 mothers, maternal NL substantially influenced the status of stunting as measured by Height for Age (HAZ). Class education, simulations in the classroom, twice-monthly home visits, and a cumulative of fifteen visits were conducted to monitor the development of the children. After a three-month intervention, the reduction in stunted infants in the intervention group was considerably greater (9.3%) than in the control group (2.4%), according to the researchers. Seyyedi et al. [18] detected favorable outcomes from interventions targeting wasting indicator status in children under the age of three who were undernourished. They utilized the World Health Organization growth indicators HAZ, WHZ (Weight-for-Height Z-Score), and WAZ (Weight-for-Age Z-Score).

Undoubtedly, the mothers assigned to the intervention group exhibited more substantial progress in the following domains: nutritional knowledge, attitudes toward feeding, critical analysis of information pertaining to food and nutrition, and nutrition practice. Furthermore, in comparison to the control group, the children assigned to the smartphone group exhibited more significant advancements in terms of waste status, underweight status, and stunting status.

### **3. Conclusion**

Interventions aimed at enhancing nutritional security and food practices in the NL appear to have the potential to positively influence the dietary behaviors of children and adolescents. An intervention that incorporates technological elements, utilizes

multiple modalities, lasts for a duration exceeding four weeks, and incorporates face-to-face sessions appears to be the most efficacious approach. To further substantiate this evidence, it is imperative that forthcoming investigations employ superior methodological standards. Furthermore, we identified a research void concerning the influence of social determinants on the nutritional quality of adolescent individuals. This constraint hindered our ability to fully comprehend the correlation between nutrition literacy, dietary practices, and nutrition security among this particular demographic, considering that adolescents may experience nutritional insecurity due to unfavorable socioeconomic conditions and other aspects of daily life.

Despite contradictory findings, the studies incorporated in this review constitute an initial endeavor to examine the potential enhancement of FNS via NL. Regardless of its contribution to the body of knowledge, our systematic review has brought to light the research prospects that are present in this field. As a result, this constitutes an initial phase of investigation that, with any luck, will prove beneficial to those who intend to pursue further studies in this area. We would encourage future discourse to center on the influence of the living environment of young people on their level of natural language proficiency and, by extension, on the quality of their diet.

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