

## **Nutrition Education: Between Yesterday, Today and Tomorrow**

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### **Introduction**

Investments in health and education shape the ability of individuals to reach their full potential in society. The right mix of such investments "Health education" allows people to live longer, healthier and more productive lives [1].

For a long time, nutrition educators assumed that telling people that their lifestyle is putting them at health risk was supposed to make them change their dietary and physical activity patterns. Nowadays, a large body of empirical evidence, based on ecological approach, shows the necessity to conduct a systematic assortment of behavioral determinants as part of the development of planned [2,3] and tailored [1,4] nutrition education. Thus, categories of proximal modifiable determinants were identified including; attitudes (a weighing of pros and cons), social influences, personal norms, perceived behavior control/self-efficacy, motivations and intentions. Further distal factors including; age, gender, socioeconomic status and education level are also considered as correlated determinants of dietary habits [3,5].

Message framing is one of the most researched phenomena in nutrition communication. Health messages are commonly classified as positive or negative fear appeal messages. Positive messages focus on the benefits of adhering to a health message and following a suggested course of action (e.g. Eat healthfully and can gain positive body image) conversely to negative fear messages (e.g. Eat healthfully or lose years of your life) [6,7].

Whether positive or negative message is effective depends largely on: 1) message types, 2) situational features-context, 3) demographic characteristics, and 4) perceptions and processing style of the target audience [6-8]. Therefore, it is crucial to use a comprehensive nutrition communication approach based on different media channels in order to increase the impact of persuasive messages that encourage healthy eating patterns and active lifestyles [7,9].

Nutrition education programs have had many successes in improving knowledge and changing lifestyle behaviors. This has been shown in school-based nutrition and physical activity education [2,5], as well as community-based nutrition education programs [2]. This effectiveness has increased with the use of versatile methodologies, interactive techniques and community participation [9,10].

Therefore the aim of this commentary is to present the evolution of nutrition education methods and to find out the significant determinants of effective nutrition education.

### **Education and communication methods**

Selection of educational methods should be culturally adapted and appropriate for the target groups' needs and the contexts where they are approached. For any selected educational methods, the analysis of all determinants likely to influence dietary behaviors of the target population should be the starting point [11]. Green, *et al.* suggested the Precede/Procede model, which is widely used in health promotion programs as a conceptual framework that guides construction of an intervention and its evaluation [12]. In particular, the

Precede components of this model helps to identify: 1) the predisposing factors (beliefs, values, knowledge, attitudes, etc.) that justify or motivate any behavior; 2) the enabling factors (skills, human and financial resources); and 3) the reinforcing factors (family, social environment, etc.) that contribute to the persistence of behavior [12]. Indeed, collection and analysis of such information helps in planning successful education and communication methods to be used [13].

Noteworthy, nutrition education presents some unique challenges in the health education area including: 1) good nutrition involves the capacity to discriminate among many different foods. For instance, it is easier to educate about a single behavior (e.g. smoking) as detrimental to people health than to provide inclusive information to make choices about a range of foods [13], 2) food and beverages products cannot be separately categorized “unhealthy” without assessing the quantity consumed, the frequency of consumption and the methods of preparation that all will affect health [13] and 3) nutrition is an area in which information alone is unlikely to be helpful [5,13].

### Nutrition education of yesterday

One of the traditional approaches to nutrition education was the face-to-face education method (in groups or on a one-to-one basis). However, the relatives assets of this traditional approach have been seriously questioned lately especially compared to the evolving mass media approaches in nutrition education [13].

It is worth mentioning that mass media strategies are based on social marketing approach and, communication strategies and models [7,9], which are more likely to deal with simple health messages or a distinct food or behavior (e.g. encouraging the use of iodized salt). Besides, mass media strategies were effective in raising community awareness of nutrition-health related diseases, especially if these mass media strategies take part of a multi-channel education approach to support other education methods including face-to-face activities [13].

However, nutrition education methods need to be regularly adapted to sociocultural and technological changes [13]. Thus, there has been a need to go beyond traditional teaching to improve dietary and lifestyle patterns, and increase the ability of people to participate in healthcare decisions at the individual and community levels.

### Nutrition education of today

To reach massively and easily the public, nutrition information is developed and disseminated by classical (written/visual/audio techniques) and contemporary (mass/social media) communication channels according to the needs, behaviors, motivations and desires of the individuals [9,14].

However, the constantly technology advancements that keep the average person more connected than ever have contributed to a shift in consumer communication preferences [15].

At present, Internet tailoring is an innovative and promising health education technique that has become popular and is now being adopted by nutrition educators to motivate people to live healthy [15]. It mimics to a certain extent the classic technique “person-to-person” dietary counseling by providing people with individualized information and feedback about their dietary patterns, lifestyles, motivations, attitudes and skills [15]. It is possible to apply customization or individualized information by using interactive technology (nutrition and/or physical activity mobile apps, blogs, advergames) which makes personalized nutrition education inexpensive, dynamic and easy to reach [7,15].

Science-based evidence indicates that Internet-tailored nutrition education is more effective in motivating people, especially young population, to make healthier dietary choices and lifestyle changes than promotion of general nutrition information [7,15]. The effectiveness of pervasive Internet-tailored nutrition education can be attributed to the following: 1) customized feedback commands greater attention; 2) is processed more intensively; 3) contains less confusing information, 3) more appreciated than general education methods especially by the young generation [15].

### Nutrition education of tomorrow

With the mass marketing of smartphones and driven by people' demand for access to remote health support tools, mobile health apps will continue to make a mark over, "emerging as the driver for next generation telehealth and telenutrition" that may presage restriction of the credible healthcare industry [14,15].

The future of nutrition education in the era of the Internet and the World Wide Web will face opportunities and challenges as never before [7].

Being at the forefront of emerging new e-education systems can mean forging ahead without knowing exactly what to expect (e.g. facing multitude yet confusing nutrition messages) but being prepared for the challenges ahead. For instance, governmental specialty parties should issue policy statements and practitioner nutrition guides [13] regarding the e-nutrition education modalities in order to regulate nutrition information delivery through telecommunications and information technology [7,9,15]. Health educators and nutrition professionals need to be advocates for effective nutrition education, thus can help in designing media and marketing literacy trainings for the public [7].

### Translation to health education practice

This commentary addresses nutrition education evolution from traditionally 1-way top-down flow of information to currently 2-way interactive communication and probably to multi-way virtual and interactive education process in the future. Besides, this commentary shed light on possible considerations for successful nutrition and physical activity education programs.

First, comprehensive sociocultural-based nutrition education strategies based on social marketing approach help to effectively promote healthy lifestyles and prevent chronic diseases. Collaboration and cooperation between all sectors (public, private and civil sectors) is crucial to increasing and sharing the available credible information and reliable resources. Many people are able to facilitate or support effective nutrition education including; decision- and policy-makers at all levels, and influential persons in their communities [7,9].

Second, future nutrition education programs should use an audience-centered framework to make more conclusive lifestyle changes and to better predict what type of messages are more effective [6].

Third, a multiple reinforcing communication strategies, by which consumers are repeatedly reached with consistent messages, may support individual nutrition education efforts best [3,9].

Fourth, all nutrition education methods should be based on a continuous research and evaluation process to address appropriately any possible public health concern [9,13].

Future researches should investigate the differences in nutrition education needs and preferences according to contextual [15] and demographic characteristics [10] of the target population [3,9]. Besides, Healthy lifestyle reforms that tend to increase the participation of individuals in decision-making requires them to be health-literate; hence the importance of investigating health literacy [10].

Finally, nutrition education is no longer just conveying nutrition messages about trendy products, but getting all people (from farmers to decision- and policy- makers) to do something differently based on scientifically valid nutrition findings in order to improve their lifestyles and health. Such comprehensive nutrition education should be part of a more extensive strategies designed to support a sustainable education process (Figure 1).

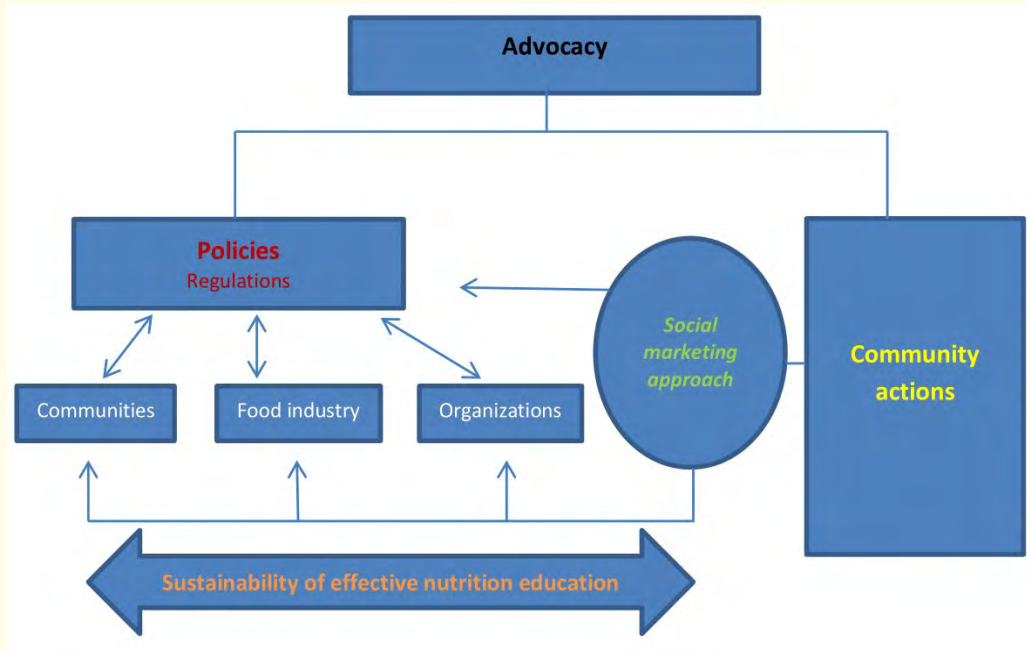


Figure 1: Supporting strategies for comprehensive and effective nutrition education process.

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