

Ten-point Vision Strategies to Offer a Menu of Options to Promote Healthy Eating and Active Living in Lebanon: Between Facts and Stories

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ABSTRACT

Background: Globalization is largely responsible for the noticeable rise of food energy availability and other food consumptions trends. Lebanon has been experiencing a nutritional transition in food choices and patterns during the past years. Dietary habits and lifestyles have been consequently affected, and nutrition-health related problems are increasingly being observed. Public health nutrition strategies and policies will ultimately benefit individuals and their communities. **Objective:** The objective of the study was to explore the determinants of health promotion strategies and nutrition policies development by studying Lebanese key stakeholders' perceptions. **Materials and Methods:** A formative qualitative study using an integrated conceptual framework based on social marketing approach has been conducted to explore participants' perceptions. The target population of this study consists of multidisciplinary key stakeholders active in their societies and of participants from 8 public/private schools in urban and semi-rural regions. Directed and semi-structured individual interviews and focus groups were conducted. Collected data have been submitted to a thematic qualitative analysis. **Results:** In total, 48 youth and 67 adults (parents, teachers, school principals, school food services representatives, and multidisciplinary key stakeholders) participated in this study. Radical lifestyle changes such as food preference, fashion, physical activity, and media are now driving the nutritional patterns of individuals more than the availability of the food itself. Perceived determinants of health promotion strategies were compiled and summarized in 10-point vision strategies scheme for healthy eating and active living. Findings helped to design a logic model for planning, developing, monitoring, and evaluating health promotion strategies and nutrition policies. **Conclusion:** This study offers completed perceptions on how health promotion strategies and nutrition policies are intended to work and to produce desirable health behavior changes. The proposed logic model for public health nutrition promotion offers a unique approach to provide specific guidance and recommendations for healthy eating and active living.

Key words: Behavior change wheel model, health promotion strategies, healthy lifestyles, Lebanon, nutrition policies, perceptions, physical activity, public health nutrition logic model, social marketing, storytelling

INTRODUCTION

“... **G**lobalization is a single social system and a result of growing ties of interdependence which now affect virtually everyone.”^[1]

Nowadays, the sociopolitical and economic connections that crosscut borders decisively condition the values and behaviors of individuals.^[2] The globalization is extremely dynamic and operates at various levels (cultural, economic, political, technological, legal, etc.) leading to human

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knowledge extinction and cultural alteration or destruction. As a consequence, the globalization power has reshaped the cultural and economic spheres worldwide.^[2,3]

Throughout the world, globalization is largely responsible for the noticeable rise of food energy availability and other food consumptions trends.^[3-5] Among other food consumption drivers including trade liberalization,^[3,6] nutrition economics,^[3] e-commerce,^[7] and food marketing^[4,6] are responsible for the availability of diversified foods and major shifts in dietary and lifestyles patterns. This fast and diverse nature of food and nutrition transition has been accompanied globally with the increasing prevalence of nutrition health-related problems such as obesity and chronic diseases.^[3,8] Therefore, public health strategies must consider both individual and environmental factors, thereby enabling the deployment and sustainability of valid nutrition policies that will ultimately benefit individuals, communities, and the environment.^[4,6,9]

More specifically, globalization played an important role in making the Arab countries experiencing a growing conflict between Western values and dietary patterns, and Arabic traditions and cultural factors.^[3,10,11] Although studies on the association of globalization with nutrition-health related problems are uncommon, only a few concluded the correlation with body image dissatisfaction and eating disorders in these Arab countries.^[11-13] There are growing indications that influence of body image (highly diffused in social media) and of social acceptance in determining, respectively, youth^[13,14] and women's attitudes toward desirable body size are another important issues to tackle in public health strategies and nutrition policies.^[15]

Hamadeh and Marquis^[16] demonstrated that the probability of health strategies and policies being effective is likely increased if they are based on evidence-based frameworks by combining socio-behavioral, organizational, and communication theories and models. Comprehensive and coherent theoretical frameworks designed following a behavioral analysis, perceptions exploration, social engagement, and public participation can help in providing specific guidance for health strategies deployment and implementation.^[14,16-18] For instance, the behavior change wheel (BCW) framework and its associated capacity, opportunity, and motivation-behavior system of behavior have been used successfully for designing and refining behavior change strategies by addressing perceived barriers and facilitators.^[17,19] The reliability of these frameworks with which they could be applied was examined in several public health nutrition domains of behavior change including school nutrition policies (SNP),^[9,16] active lifestyle in elderly,^[20] and tobacco, and obesity.^[19]

Particularly in Lebanon, food consumption practices and lifestyle patterns have changed markedly during the past

decades.^[21-23] Dietary choices are higher in saturated fats, cholesterol, and refined carbohydrates,^[21,22] and deficient, and/or inadequate in micronutrients such as folate, iron, and Vitamin D.^[24] This nutrition tendency has also been accompanied with sedentary lifestyles,^[22,23] intensified use of technology devices and time spending in front of screens,^[25] and increased level of stress.^[9,12]

Available studies in Lebanon indicate that nutrition transition impact on traditional dietary patterns can be noticed, especially in urban regions, males and in some socioeconomic sectors of the country.^[21-23,26] Consequently, the prevalence of overweight and obesity has reached an alarming level, and the incidence of chronic diseases is also very high among all age groups.^[22,23,26]

Unfortunately, national public health nutrition strategies and policies to control weight problems and to prevent chronic diseases among youth and adults are relatively absent in Lebanon.^[16] Besides, fundamental components associated with the attainment of effective public health nutrition strategies have not been well investigated,^[16,27] which, in turn, affect moderately the impact of any interventions or programs to promote health and to prevent chronic diseases.^[28]

Thus, this study aimed to explore the determinants of health promotion strategies and nutrition policies development by studying Lebanese key stakeholders' perceptions.

MATERIALS AND METHODS

A formative qualitative study using an integrated theoretical framework based on social marketing (SM) approach has been conducted to explore Lebanese key stakeholders' perceptions of the determinants of SNP development.^[9,16] According to this methodology approach, this manuscript will highlight only one part of the findings drawn from the latter study^[16] to accomplish the aforementioned research objective. To this end, the value and validity of the theoretical framework used by Hamadeh and Marquis were verified,^[16] and they demonstrated the structural variables involved in addressing stakeholders' perceptions that would help in planning, developing and communicating effective health strategies and nutrition policies.^[9,16,27]

Subjects

SM is a pragmatic approach that helps in assessing and responding to the need of the target population within the context of broad and complex health strategies and policies priorities.^[29,30] Thus, SM advocates for targeting the public, the communities, and the organizations concerned with future health promotion programs and policies or having some governance or guidance in their environments to support health promotion strategies and nutrition policies.^[28-30]

The target population of this study consists of: (1) Multidisciplinary Lebanese key stakeholders with previous experience in health promotion programs or active in their societies, and (2) participants from 8 schools (2 public urban, 2 public semi-rural, 2 private urban, and 2 private semi-rural) in the capital Beirut “urban area,” and in the South and North Mount-Lebanon “semi-rural areas.”

A total of 48 youth and 67 adults were contacted and were willing to express their perceptions to explore the determinants of health promotion strategies and nutrition policies development in Lebanon.

Instruments

Directed and semi-structured individual interviews with key stakeholders, school principals, school food services representatives, and students, and 4 focus groups with parents and teachers were conducted by a single interviewer (first author of this study) for a maximum duration of 60 min. The project was approved by the ethics committee of the Faculty of Medicine of the University of Montreal. All participants in this study were asked to sign a consent form.

Procedure

The recruitment began at the end of September 2010 and was completed at the end of February 2011. In schools and on acceptance of this project, the principals have been invited to identify potential males and females students aged between 10 and 14 years old and able to easily articulate their perceptions. All participants were asked to answer questions structured around the variables of the integrated conceptual framework.^[16] Data collected from interviews were recorded followed by a coded transcription and a production of fact sheets of the exchanges to facilitate the subsequent stages of data analysis. Coded transcripts were revised by the first and the second author of this study for the identification of common themes.

Data analysis

Obtained data from this research study have been submitted to a thematic qualitative analysis^[31] to identify perceived barriers and facilitators of health promotion strategies and nutrition policies.^[9,16,27] The first stage of the analysis plan was the production of major outcomes for each interview grouped and reduced into common themes and sub-themes. Subsequently, the exploration of findings that identify: (1) Perceived barriers and facilitators by all key stakeholders, (2) how, why, and where to promote the target healthy lifestyles and behaviors, (3) strategies functions and evaluations, and (4) modes of delivery or communication for each planned strategy and policy. The synthesis was iterative to explore all potential determinants of effective health promotion strategies and nutrition policies according to different institutional (public, private, and civil), communities (demographic and socioeconomic factors), and geographical (urban and

semi-rural) profiles. Authors revised and discussed the synthesized arguments, and examined and compared findings related to effective health promotion strategies and nutrition policies with the existing ones in terms of the criteria of usefulness that led to a final exhaustive public health nutrition system. This system, called the new logic model for public health nutrition promotion, was developed by: (1) Tabulating the full set of health strategy and nutrition policy categories that had been identified in this study and (2) establishing links between strategies’ characteristics and the components of the BCW model to cover all potential configurations in public health nutrition. This was done by the first author of this study and refined through discussion with the other researchers.

RESULTS

A total of 115 subjects from different age groups, regions, and disciplines participated in this research. Their profiles and characteristics are summarized in Table 1. The SM approach used in this study offered perspectives on how comprehensive strategies using tailored approaches to each context are more likely to be effective and to produce desirable health behavioral changes. Besides, SM helped: (1) To explore individuals’ perceptions of food consumption and healthy lifestyle drivers, and effective communication channels for public health nutrition promotion; and (2) to illustrate 10-point vision strategies for healthy eating and active living.

Perceptions of food consumption and healthy lifestyles drivers

All participants in this study are conscious about the globalization effect on nutrition transition and on the transformation of the global food communication and nutrition information landscapes. Moreover, respondents identified the significance of environmental and social demands impact on radical dietary and lifestyle changes among the Lebanese population. For instance, fashion industry influence, physical activity trends, and marketed products especially if endorsed by celebrities are now driving individuals’ food preferences and other nutritional patterns.

Although participants’ perceptions for price, quality and value of food product are considered fundamental determinants of their food choices and eating behaviors, they similarly declared that in this era of information explosion, increased screens viewing time, playing video games, searching the internet, and social networking during leisure time is widely affecting their lifestyles, and therefore declining their physical activity and influencing virtually their food intakes.

Particularly, it has been noticed that young participants in this study are absolutely influenced by marketing techniques and by advertised products and ideas related to food, physical

Table 1: Characteristics of youth and adults participants (n=115)

Schools profile sample characteristics	Urban		Semi-rural		Total (n) (from 8 schools)
	2 public	2 private	2 private	2 public	
Boys (n)	6	6	4	4	20
Age (years)					
10	0	0	1	1	2
11	1	2	0	3	6
12	3	1	2	0	6
13	1	2	0	0	3
14	1	1	1	0	3
Girls (n)	6	6	8	8	28
Age (years)					
10	0	1	0	1	2
11	1	0	3	0	4
12	1	2	0	1	4
13	3	1	4	3	11
14	1	2	1	3	7
Total (N1 youth)	12	12	12	12	48
School principals*	1	1	1	1	4
School food services representatives*	1	1	1	1	4
Parents and teachers*	7	7	6	7	27
Total (N2 adults - In schools)	9	9	8	9	35
Key stakeholders (N3 adults-out schools)	15 academic and experts involved in health promotion selected from various disciplines (epidemiology, nutrition, public health, environmental health, food safety and insecurity, health promotion and education, community health, family health, pediatrics, journalism, communication, sociology, anthropology, health and policy management) 4 dietitians (President of Lebanese Association of Dietitians and 3 influential dietitians in the media) 3 ministries (M of education, M of public health and M of social affairs) 3 United Nations agencies in Lebanon (World Health Organization, United Nations Family Planning Agency-UNFPA, United Nations of Relief and Works Agencies for Palestine refugees in the Near East-UNRWA) 2 municipalities (rural and urban) 2 school health advisers 2 non-governmental organizations (active in health promotion) 1 food industry				32
Total (n)					115

*Were recruited in only 4 schools (1 urban public, 1 semi-rural public, 1 urban private, 1 semi-rural private)

activity, and lifestyles, especially in social media. Celebrities' endorsement was clearly mentioned by youth as a positive influence on the memory, likeability and trustworthy of the message, thus on their motivation and intention to choose the food and to adapt the lifestyle due to the transfer of

the meaning. For instance, it increases the food/products' attributes and their purchase intention.

For all adults, nutrition legislation has an important role to imply changes in the food system and to improve nutrition

and lifestyles. However, for these participants nutrition legislation will require intersectoral cooperation to counter the current trends in food supplies and marketing and to reshape the nutrition transition. In Lebanon, there is a need to recognize the role of civil society (Non-Governmental Organizations), private sector (academia, food industry, media, etc.) and the government in formulating nutrition legislation, functional strategies, and national policies. Lebanese politicians and industrialists should collaborate with health professionals and food experts to develop national food standards and marketing regulations.

Effective Communication Channels for Public Health Nutrition Promotion

Results from this study showed that public health and nutrition communication methods would work only if they rely on an in-depth understanding of individuals' lifestyles, concerns, beliefs, attitudes, barriers to change, and sources of information about new nutrition and physical activity trends.

Participants, especially youth, perceived that health communication methods should move from monologue to dialogue in which senders and receivers of information both create and share together the communication process, called interactive communication. Indeed, using multichannel approaches including interpersonal, community, mass, and social media channels were identified by all participants as facilitators for public health nutrition promotion. For adults, effective health communication activities communicate interest and foster commitment among decision- and policy-makers toward public health strategies and policies. For young participants, their role models such as celebrities and popular figures (local and international singers, actors or athletes) empower them to work toward the goal of national public health nutrition strategies.

All respondents perceived that a combination of science, facts, real examples, multi-channeled media use, and audience participation is essential for communicating nutrition and promoting public health. Besides, advertising, publicity, promotions, sponsoring events, and other communication tactics were identified as memorable cues for participants to know how and why they should adopt or maintain a health behavior.

10-point Vision Strategies for Healthy Eating and Active Living

Results from this study allowed exploring key determinants of functional public health nutrition strategies to promote healthy eating and physical activity in Lebanese communities. These strategies can be used as a starting point for designing public health nutrition initiatives and national policies. Participants identified the need for governmental leadership in health systems, inter- and intra-institutional collaboration and coordination, and public active participation as

facilitators for the development of public health nutrition programs. In contrast, inappropriate built-environments forbidding a healthy living, political instability, multiplicity of socio-cultural structures, religious constraints, and poverty are major perceived barriers to promote healthy living in Lebanon.

All participants mentioned that schools are basic and competent environments for health/nutrition promotion among youth but are not enough to address other socio-environmental factors affecting their lifestyles. They highlighted the need for comprehensive strategies to develop healthy eating environments and active zones and to create accessible healthy options for everyone. More importantly, they focused on the importance of public participation in planning and implementing health promotion strategies, and in getting important details of how and why things happen which explain the power of storytelling. *"When people understand what public health nutritionists and leaders are doing, they will support and comply more with the developed strategies and policies."* Participant extract whether these health professionals are addressing individuals, governmental parties, community leaders, food industry lobbies, business executives, marketing influencers or the media key powers with facts and stories, they will attract support for their work by forming partnerships and building credibility in communities. Perceived determinants of health promotion strategies and nutrition policies explored in this study were compiled and summarized in 10-point vision strategies for healthy eating and active living, which are illustrated in Figure 1.

DISCUSSION

The narrative of public health and nutrition promotion strategies is complicated. Such strategies involve several interconnected elements, which allow us to live in our communities and society including, food accessibility and availability, lifestyle patterns, the environment, and much more.^[32,33] Thus, to understand the profile of public health issue within society and why certain subjects are vital to the population, the SM approach constitutes a starting point for identifying perceptions, attitudes, values, beliefs, and cultural and social structures (politic, region, religion, etc.)^[16,28,30]

The UK Medical Research Council for developing and evaluating complex interventions encourages drawing on theoretical frameworks in designing interventions and public health strategies.^[34] Indeed, the innovative theoretical framework of this study^[16] based on the SM approach helped to understand the dynamic of health behaviors and canvass the full range of external influences on human behaviors. Furthermore, this innovative framework matches the features of any health/nutrition behavioral target, the target population, and the context in which the strategy/policy

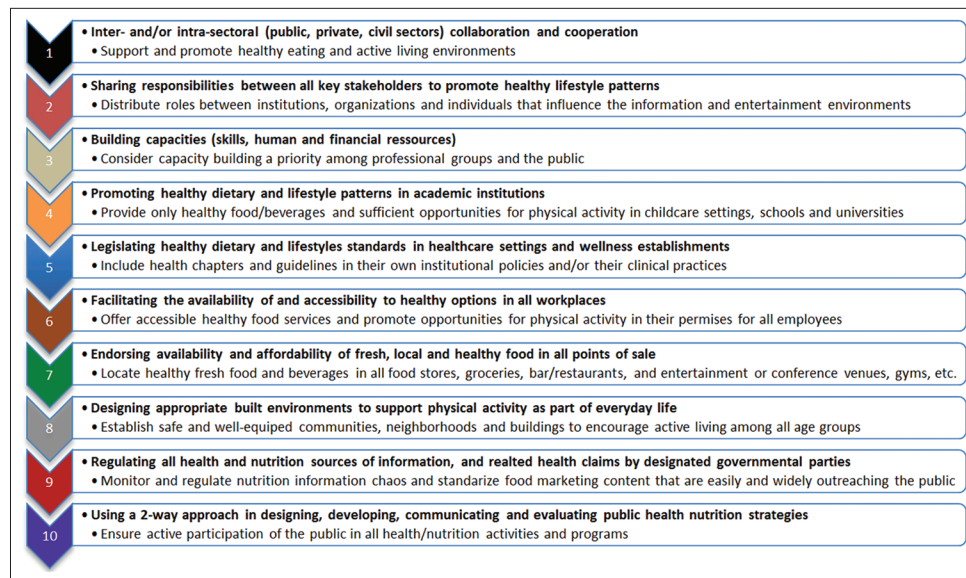


Figure 1: Ten-point vision strategies to promote healthy eating and active living in Lebanon

will be delivered.^[9,16,27] There is a general recognition that contextual analysis is key to effective strategies designs and policies development.^[19,34] In this study, findings highlighted for public health leaders and policy-makers who are trying to deliver the importance of health promotion and to convey successful public health nutrition strategies, the importance of addressing people with facts and stories.^[9,34]

Facts and statistics convey information, they give credibility, but sometimes they are complicated for an individual to understand. For instance, what does “social and environmental determinants of health” mean to anyone outside of public health domain? Therefore, storytelling is as much about people, and crucial and efficient in health promotion strategies as facts.^[35] Individuals are the ones experiencing the effects and benefits of public health nutrition strategies in life-transforming means.^[5,9,27] For example, we should provide youth factual evidence and demonstrations on how they can prevent nutrition-related health problems in adulthood if they are growing in healthy environments at schools, neighborhoods, and households.^[36,37]

More than data, statistics and infographics, good stories and real examples trigger better understanding and empathy that are more likely to drive actions, strategies endorsement, and changing behaviors.^[35,38] Similar to other cultures,^[14,36] the Lebanese should maintain social harmony with other members of their society and eating patterns are not an exception for individuals to be socially accepted in their communities. However, some findings are specific for the Lebanese context such as the remarkable impact of mother role modeling^[27,39] and peer pressure at all ages,^[27,40,41] especially among females,^[27] in spreading health information and nutrition trends. Furthermore, the unstable political situation and its impact on the socioeconomic status, on

the one hand, and the diversity of social structures and the religion combinations influencing neighborhoods and societies practices, on the other hand, create complications and challenges in addressing carefully the association between socio-cultural networks and health promotion.^[9,27,40]

Similar to findings from Western literature,^[33,42-44] applying comprehensive socio-cultural based communication strategies in Lebanon allow to promote successfully healthy lifestyles among both genders, all age groups, and socioeconomic levels, to prevent chronic diseases. However, individuals are not a homogeneous group, thus tailored approaches to different segments is crucial to build public support for health promotion strategies.^[5]

The summary of our data is very well in agreement with several studies, which showed that besides using circumstantial approach in leading health promotion strategies, some general guidelines can have an opportunity to make them successful and sustainable such as; (1) Focusing on solutions not problems and framing problems as solutions instead of framing them problems,^[27] (2) leading with people stories not only with data,^[5,9] (3) brainstorming with partners from multidisciplinary areas,^[9,45] (4) keep looking for emerging influences on health determinants including nutrition economics,^[3] marketing, and celebrity endorsement, especially in fast moving consumer goods,^[6,46,47] online grocery shopping called e-commerce,^[7] and new consumers classification “run shoppers who prefer to save time and buy convenient products or fun shoppers who like to be inspired by the atmosphere in offline markets and/or restaurants,^[7] and (5) figuring out the best communication strategies to impact people’s lifestyles in this technological era revolution,^[5,35,38] and finally pushing out constantly health promotion messages and simultaneously in all environments and communities.^[5,38,48]

Implications

This study presents recommendations and practical suggestions of what needs to be done to improve the translation of research findings into practice and make this useful in designing effective health promotion strategies and developing nutrition policies. The development of science and technology of health behavior change should be on the agenda of public and private sectors to bring research and health promotion in line with cultural diversity.^[45] Every context and cultural system are seen the solution for health behaviors change that is workable in the particular conditions in which it nurtured and evolved.^[45] To the best of our knowledge, none of the theoretical frameworks used in previous studies on public health strategies covered the full range of strategies or policies functions; neither they thrived in connecting these strategies to a model of behavior change. Therefore, this study provided a structured approach to designing new or updating existing, public health nutrition strategies, and policies. For that matter, the new logic model [Figure 2] was proposed by tabulating and establishing

links between the full set of 10-point vision strategies for healthy living and the components of the BCW model. The purpose of this logic model is to promote a comprehensive and systematic analysis of the available evidence or options for designing, developing, monitoring, and evaluating health promotion strategies and nutrition policies. Moreover, it facilitates the application of behavioral sciences (using the BCW model) to verify that individual- and population-level component parts of strategies act synergistically. We have built on this to add sequences of activities (depending on contexts and goals of the key stakeholders and policymakers) to conceptualize fundamental associations between the components in the interacting public health nutrition system, which are clearly exemplified in the proposed logic model. A given situation might alter one or more components in this system. Furthermore, the causal links within this system can work to reduce or amplify the effect of a particular strategy by leading to modifications elsewhere. Individuals' behaviors in contexts are the starting point of this Logic Model, which places no priorities on individuals or environmental

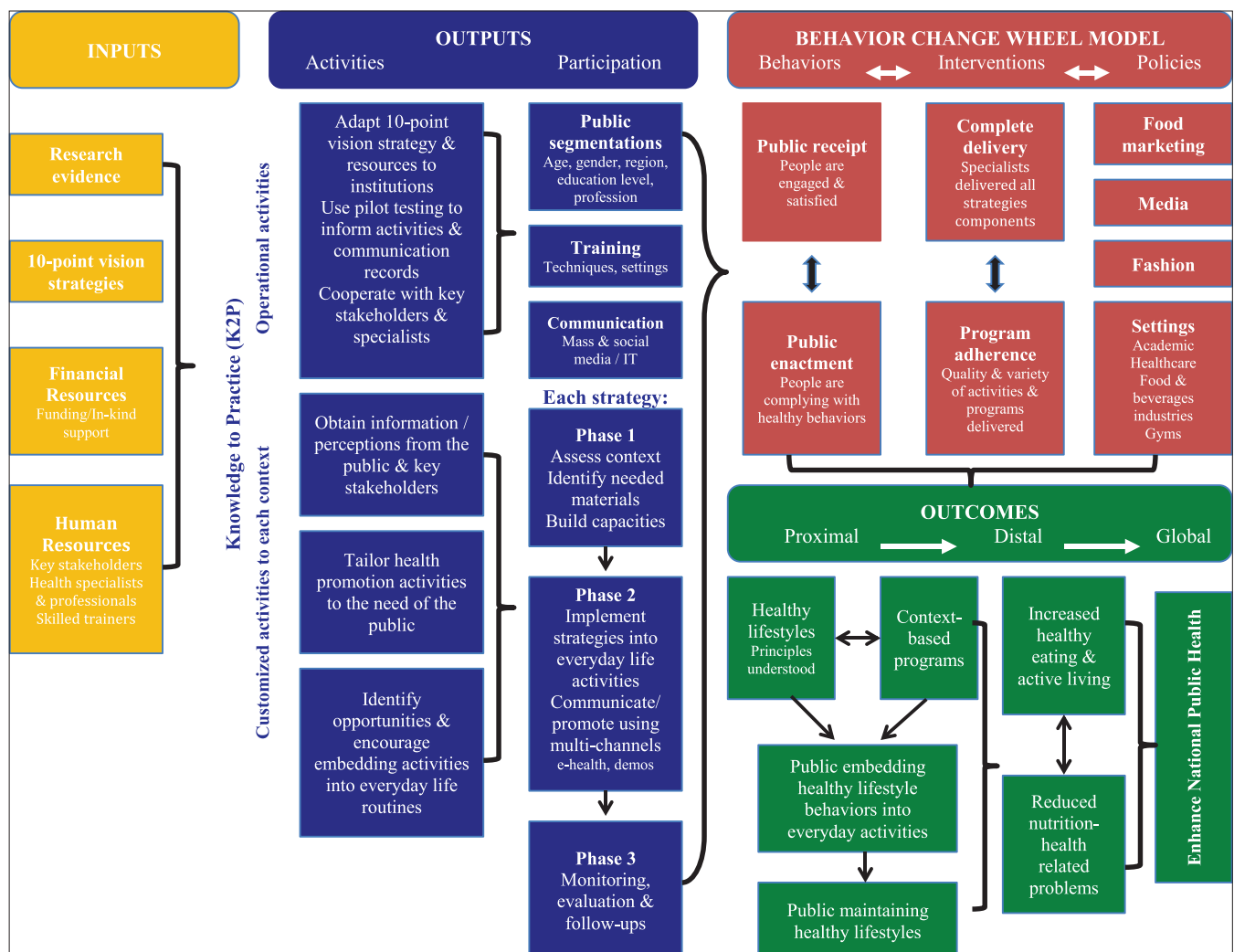


Figure 2: Logic model for public health nutrition promotion

perspectives, neither on intra-psychological or extra-social factors controlling health behaviors.

The evaluation process in this logic model will definitely explore the implementation of strategies and policies through the investigation of public and stakeholders' acceptance, adherence, delivery, and enactment. Thus, our logic model that has been developed into evidence-based tools (10-point strategies) and a theoretical framework (BCW) incorporates the context concept very naturally, and therefore, would allow users to plan, select or update their strategies and policies accordingly. With this in mind, the innovative, comprehensive logic model for public health nutrition promotion proposed in this study could prevent strategies designers, decision- and policy-makers from neglecting important options. It is important from the outset to specify how consumerism and e-commerce are extremely evolving in this era of the internet and technology, and how they will affect the structures of this logic model. Thus, further studies on consumer behaviors and e-food commerce are indispensable to supplement our findings with new and multidisciplinary insights to cover the complexity of public health nutrition constructs.

Strengths and limitations of the study

It must be recognized that there are a nearly infinite number of health promotion strategies and nutrition policies. The proposed logic model, one of the strengths of this study, will no doubt has the benefits of having been derived from existing theoretical frameworks and therefore covering concepts that have been considered to be crucial for health promotion strategies and nutrition policies. Indeed, this study presents for the first time a new model that has been constructed explicitly to overcome limitations of previous frameworks and to link potential behavioral targets, to health strategies to national policies.

The main limitation of the study is the day-to-day variation in food trends and lifestyles patterns. Therefore, the systematic monitoring, evaluation, and updating of strategies components will be essential due to the ever-changing contexts and the complexity of human behavior.^[19,49] In addition, findings are specific to the Lebanese context and cannot be generalized to other physical and social environments.^[18] Budget, Timescale, and human resources are the main constraints limiting the development, implementation, and/or sustainability of the process, thus the effectiveness of public health nutrition strategies and policies.^[49] Finally, the logic model is a holistic model for designing public health nutrition strategies and developing policies, but it remains under-investigated.

CONCLUSION

This study offers completed perceptions on how health promotion strategies and nutrition policies are intended to work and to produce desirable changes. The suggested

strategies and their linkage to the BCW model offer a unique approach to provide specific guidance and recommendations for healthy lifestyles promotion. Effective communication channels spreading health and nutrition information will assist initiatives aimed at reducing the economic and social burden of nutrition-related diseases. Research is needed to establish how far the Logic Model proposed can lead to efficient designs of functional public health nutrition policies.

DISCLOSURE STATEMENTS

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Conflict of interest

The authors declare that there are no competing interests. Authors' contribution: S.H. and M.M. conceived the concept of the study. S.H. designed the study, designed the innovative Logic Model, collected and analyzed the data, and wrote the manuscript. M.M. assisted in data interpretation and in critical revisions. S.E. added insights of e-health and technology strategies, and assisted in manuscript revision.

Ethical standards disclosure

Ethical approval for this study has been obtained from the ethics committee of the Faculty of medicine at the University of Montreal.

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