The 92nd Nestlé Nutrition Institute Workshop

Nutrition Education: Strategies For Improving Nutrition And Healthy Eating In Individuals And Communities

Lausanne, Switzerland, September 18–20, 2018
There has been a tremendous shift in the quantity and quality of the human diet over the last decades. On the one hand, nutritious food is more readily available, resulting in improved nutrition and the opportunity for better health. But on the other hand, there is a higher consumption of saturated fats, salt and sugar. Despite increased overall wealth, there remains a health disparity particularly in low-income populations in developing countries, giving rise to the double burden of obesity and malnutrition. Indeed, data from the latest WHO/UNICEF/World Bank Joint Child Malnutrition Estimates indicate that around 155 million children under the age of 5 are stunted, 41 million are overweight, and 52 million are wasted. Furthermore, developed countries are also witnessing a dramatic rise in diet-related disorders, like cardiovascular disease and type 2 diabetes.

If eating well should be easier for everyone, why is there a growing number of obese and overweight, alongside a consistently large proportion of the undernourished and wasted? A key deficit is lack of knowledge. Despite the explosion of information on diet, health and nutrition, changing an individual’s eating habits is a difficult task. We now have a better knowledge of the forces that shape a person’s eating behavior, and it is high time to leverage nutrition education to drive healthy food choices.

Nutrition education is the centerpiece of the 92nd Nestlé Nutrition Institute Workshop. Nutrition education may be defined as a combination of educational tactics accompanied by physical or environmental supports, whose purpose is to encourage the voluntary adoption of foods and other lifestyle behaviors that are beneficial for health. The first session took an in-depth look at what nutrition education really is and how it can be used to influence different target populations, including women, girls and young children. The second session explored the complexities of eating behavior, underscoring the importance of early childhood as a critical time for intervention. Here, nutrition education efforts in childcare, schools, and community settings play an important role. The final session shifted the focus to nutrition education in medical schools. Paradoxically, nutrition education is sorely lacking in many medical schools around the world. This session highlighted the latest educational technologies that are being used in medical school curricula, as well as methods for bringing nutrition to the clinic. Altogether, the three sessions in the workshop cover the basis of how nutrition interventions can be designed and delivered to improve food choices and ultimately, an individual’s health.

Natalia Wagemans, MD
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SESSION 1

Nutrition Education to Optimize Healthy Growth and Development for the First 1000 Days

Chairperson: Maureen Black (University of Maryland)

Nutrition education is a fundamental aspect of any strategy that seeks to combat obesity and malnutrition. Anne Dattilo opened the session by explaining that nutrition education is not merely the provision of information; rather, it is a cohesive body of strategies and tools delivered through multiple channels, designed to facilitate healthy food choices at the individual and population levels. A key target population consists of women and girls particularly during the peri-conception period, as detailed by Usha Ramakrishnan. Best practices for optimizing diet and weight gain during pregnancy were discussed by Anna Maria Siega-Riz. Once the infant is born, a different set of concepts and skills are needed. Marion Hetherington explained how the appetite cues from infancy can be applied to optimize infant feeding practices. In recognition of the importance of these early years in shaping lifelong eating habits, Maureen Black presented the Nurturing Care Framework, which provides a template for how programs and policies can provide nurturing care for young children.

Nutrition Education: Application of Theory and Strategies During the First 1000 Days for Healthy Growth

Anne Dattilo (Nestlé Infant Nutrition USA) provided an overview of nutrition education as a key tool for improving the health of a population.

Many parts of the world are facing the double burden of obesity and persistent malnutrition. While 50 million girls and 74 million boys aged 5-19 years are obese, even more children are underweight. Indeed, globally 75 million girls and 117 million boys were moderately or severely underweight in 2016.

While access to a safe food supply remains an unmet need in many parts of the world, the alarming rise in obesity in many developed nations as well as the persistence of underweight and stunting in other areas calls for a multi-pronged approach in dealing with these problems. To this end, nutrition education is moving to the forefront of the key strategies needed to foster lasting changes in population health.

How can nutrition education be used to address widespread health issues like obesity and underweight? First, it is important to understand that nutrition education is not simply the provision of information. Instead, it is a comprehensive body of tools designed to address specific behaviors that can be modified in order to achieve a beneficial health outcome. Successful nutrition education interventions are delivered through multiple channels, including activities at the individual, institutional, community, and policy levels. Some examples of individual strategies include adjusting energy intake and expenditure to achieve the recommended weight gain during pregnancy, breastfeeding the infant, and offering nutritious complementary foods at the right stage. However, data from randomized clinical trials that test various interventions are limited. In the future, the application of digital interventions may provide the technological means to reach out to a wider population. Finally, targeting the first 1000 days of life is of paramount importance in order to achieve lasting health benefits in the coming generations.

“Interventions in early life, when biology is most ‘plastic’ and amenable to change, are likely to have the greatest positive sustained effects.”

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Adolescence is a critical period for physical and psychological growth and development.

Intervention studies that have been successful in helping women gain weight within the target require frequent, high intensity diet counseling.

Preconception Nutrition Education

Usha Ramakrishnan (Emory University) discussed nutrition education in women and girls, highlighting the importance of the preconception period.

The health of a woman is the cornerstone for the health and well-being of her offspring. This is especially true of the peri-conceptional period. However, why is it necessary to address women's health throughout the life cycle, from infancy through the school years, into adolescence and beyond? A key reason is that the behaviors that shape health and nutrition in later life are formed during childhood and adolescence. Indeed, studies have shown that health and nutrition behaviors track strongly from adolescence into adulthood, with the potential to have lasting impact on health in later life.

Data from case studies and sub-national programs for preventing anemia among adolescent girls in Egypt and India have had successful results. Such programs combined nutrition education and counseling (NEC) with the distribution of iron-folate supplements using various delivery platforms. School-based programs in Mexico and the US have also employed NEC methods to reduce the burden of overweight and obesity and promote healthy lifestyles.

Reaching young adults, however, is a greater challenge in settings where girls are out of school. There is an urgent need to integrate NEC with the provision of reproductive health services that includes family planning and post-partum care. The use of programs based on the work-site or social media platforms may be explored in these settings. Another approach that is currently in use in Bangladesh, Indonesia, India and Malawi targets newlyweds. This has potential for delivering NEC that may improve pre-conceptional health and/or delay the age of the mother at first birth.

Prenatal Nutrition Education

Anna Maria Siega-Riz (University of Virginia) reviewed the latest data on the best practices for optimizing diet and weight gain during pregnancy.

Most of the research on diet and health outcomes focuses on dietary patterns, due to the strong correlation between nutrients and actual food groups. Recently, the US Department of Agriculture (USDA) and the US Department of Health and Human Services (HHS) initiated the Pregnancy and Birth to 24 Months Project to examine diet-related topics of public health importance during pregnancy, infancy, and toddlerhood. This study focused on the relationship between diet and four main outcomes: gestational diabetes (GDM), hypertensive disorders during pregnancy (HDP) (i.e. gestational hypertension, preeclampsia and eclampsia), birth weight and gestational age (i.e. preterm birth [PTB]). There were inconclusive findings with respect to diet and GDM or HDP, while the findings suggested a stronger correlation for the outcome of PTB.

Data from two other studies supported the association between dietary patterns and health outcomes. The first study showed that greater adherence to the Dietary Approaches to Stop Hypertension (DASH) diet was related to lower maternal fasting glucose, insulin, and triglyceride levels. The Healthy Start study found that a diet higher in starchy vegetables, non-whole grains, fruits and discretionary solid fat correlated with gestational weight gain and mid-pregnancy fasting glucose levels.

Despite the inconclusive findings and methodological limitations of many of these studies, certain dietary guidelines can be implemented for women to follow. An example is the 2015-2020 Dietary Guidelines for Americans, which recommend a higher intake of fish and seafood, vegetables, fruits, whole grains, nuts, seeds, legumes and vegetable oils. Another key finding is that maternal weight status (particularly BMI ≥30 kg/m²) prior to conception is strongly associated with many adverse birth outcomes. A rational strategy would be to provide counseling to these women even throughout the inter-conceptional period, to mitigate pregnancy complications and adverse birth outcomes related to a high BMI.
Feeding of Infant and Young Child, with Focus on Behavioral Aspects

Marion Hetherington (University of Leeds) described how nutrition education can be refined by reading the appetite cues from infancy.

Infants and children use a wide spectrum of cues to signal hunger, satiety, and taste preferences. Research suggests that parental responsiveness to their child’s hunger, appetite and satiety signals is critical for the development of healthy eating habits and may affect the weight status and growth rates of their child.

In the hours following birth, neonates signal hunger using agitation, arousal and a distress cry. Newborns are also capable of indicating their preference for sweet tastes and dislike of bitter. One way to overcome this inherent bias towards sweet tastes is through breastfeeding. The presence of bitter-tasting vegetables in the maternal diet is transferred to the breast milk, ensuring that the infant is exposed to a variety of tastes from its early days. Furthermore, breastfed infants exhibit more engagement and disengagement cues than those who had been formula fed. Research has indicated that breastfeeding mothers also provided a more ideal feeding environment and fed more responsively than those who did not breastfeed.

The number and sophistication of appetite cues increases with age. It is therefore important to support parents in identifying, interpreting and responding to these cues. Hetherington’s team has developed an online video-based educational tool to help parents and healthcare professionals recognize how infants communicate appetite. In the future, these tools may be harnessed as a part of the strategy to prevent overfeeding and address childhood obesity.

Nutrition Education and Implementation of the Nurturing Care Framework

The goal of the Nurturing Care Framework is to help children survive and thrive, in order to transform health and human potential. Maureen Black (University of Maryland) discussed the principles and application of this Framework.

The Nurturing Care Framework was created in response to strong evidence and increasing recognition that the early years are critical for human development. It was first introduced in 2017 with a Lancet publication series on Early Child Development. In 2018, the World Health Assembly used this as a basis to launch a framework for promoting early childhood development around the world. The Framework is essentially an evidence-based road map which outlines how programs and policies can support parents, families, and communities in providing nurturing care for young children. Special attention should be paid to communities where children are at greatest risk of being overlooked.

The key tenet of the Nurturing Care Framework is to foster an enabling environment that encompasses health, protection, early learning and responsive caregiving. Not surprisingly, nutrition is a key pillar of this global framework. Although Nurturing Care is implemented mainly by families in the home, changing social trends in maternal employment highlights the need to include child care providers and other caregivers.

How can the Nurturing Care principles be applied by families, child care providers, as well as by governments on a large-scale level? Here, the tools of implementation science provide a means to understand how these principles can be incorporated into daily life. Through continuous monitoring and evaluation of the outcomes, individual practices and larger-scale programs can be adapted to improve the quality, outreach, and sustainability. Ultimately, the success of these programs depends on ensuring that children around the world reach their developmental potential, paving the way for health, intelligence and creativity for future generations.

To date, we have found that mothers are able to identify hunger cues with ease but are less confident in recognizing and responding to satiation/satiety cues.

Childhood development during the first 1000 days forms the foundation for lifespan health, academic success, productivity, and well-being, and is a cornerstone of the United Nations Sustainable Development Goals.
SESSION 2

Nutrition Education in Childcare, Schools and Community Settings

Chairperson: Mary Story (Duke University)

Eating is more than just a biological necessity. It is highly complex behavior that is the product of multiple influences, including physical, social, and economic factors. Mary Story kicked off the session by examining the interplay between these factors and how to leverage nutrition education and policy to make a real change. Early childhood is a critical period for intervention: Dianne Ward reviewed the important roles played by schools and daycare centers in shaping early dietary habits. Moving to the national level, Roy Ballam gave an overview of nutrition education in the UK, highlighting key areas for improvement. Patricia Crawford focused on three strategies that can be used to facilitate access to healthy foods including for those with low incomes: through the use of food taxes on unhealthy products, the provision of healthy foods in food programs, and changes in the retail environment. Finally, Mario Capanzana outlined the targeted policy changes made by the Filipino government to address malnutrition at the national level.

Supporting Healthy Eating: Synergistic Effects of Nutrition Education Paired with Policy, Systems and Environmental Changes

Mary Story (Duke University) described the multiple influences on what people eat, thereby providing guidance for supporting healthy eating behaviors.

Eating behavior is the result of multiple influences across different contexts and conditions for any given individual. Improving dietary and lifestyle patterns and reducing obesity will require addressing not only individual behaviors but the environmental surroundings and social conditions in which people live, make choices, and eat. Therefore, any attempts at modifying eating behavior will need to address a wide spectrum of factors at multiple levels.

The factors that influence eating behavior may be divided into several main categories: individual factors, social environments, physical environments, and macroenvironments. Collectively, these influence what, where and how much we eat. In order to make a true impact at the population and community level, we must transform the healthy choice so that it also is the easy, safe and affordable choice.

There are several examples of successful interplay between nutrition education and policy, systems and environmental (PSE) strategies which have had beneficial effects on eating behaviors. Some examples include federal efforts in nutrition assistance programs, nutrition and food labeling, and modification of food retail settings. In order to have the greatest population health impact, models that have proven effective should be maintained and new approaches that hold promise for underserved communities should be implemented and evaluated. Nutrition education combined with PSE approaches is more effective than either strategy alone and both will be needed to reduce the global burden of diet-related chronic diseases.

Accelerating progress in improving healthy eating and dietary quality and achieving and maintaining a healthy weight will require multi-level and multi-sectoral approaches by combining direct nutrition education with broader PSE efforts.
Multi-level Opportunities to Improve Nutrition Education in Childcare Settings

A growing number of young children are spending a significant amount of time in early childcare and education settings. Dianne Ward (University of North Carolina) reviewed the importance of these settings in shaping early dietary habits.

In the US and most other countries, early care and education settings (ECE) programs serve large numbers of children. The enrolled children spend 32-36 hours per week and consume 50-75% of their daily caloric intake while in childcare. Thus, ECE settings have the potential to exert considerable influence on the eating habits of young children.

What strategies can be used by ECE programs to foster healthy eating habits in young children? A practical way of classifying these strategies is with the 4-Ps: provisions, practices, planned education and outreach, and policy. Provisions refers to the serving of healthy foods and beverages, as well as a supportive eating environment. Practices is defined as the relationship that teachers and other staff establish with the children around eating. Planned education and outreach includes nutrition lessons for children, professional training for staff and outreach to the children's families to support healthy eating. Finally, this commitment to nutrition education should be formalized through written policies.

Many ECE programs fail to implement the full range of best practices. An important call to action, therefore, is for healthcare professionals and policy makers to endorse comprehensive ECE programs that support a continuum of healthy eating, from the home, to childcare, school, and beyond.

Food and Nutrition Education, Policy and Training in UK Schools

Roy Ballam (British Nutrition Foundation) discussed nutrition education in the UK, highlighting key areas for improvement.

Although the rising rates of childhood obesity are a clear call for action, this is but the tip of the iceberg. The National Diet and Nutrition Survey indicates that only 16% of children aged 5-15 years consumed the recommended fruit and vegetable servings per day, and many are not reaching the target level of one hour of physical activity per day. This suggests that there are fundamental problems not only with the diet of those who are obese/overweight, but with the diet of the population as a whole.

The UK government has introduced a number of measures to address this, such as the sugar tax, a sugar reformulation program, and updating school food standards. However, no specific recommendations have been made with respect to food education in formal school curriculums. Although the curriculum in the UK theoretically includes "cooking and nutrition," in reality, teachers are constrained by lack of time, budget and resources to deliver this knowledge.

Health promotion programs have been used to endorse healthy food and nutrition. Some are funded by local authorities, and others by non-profit organizations. Successful programs are those that provide holistic support from a "whole school" perspective. These programs enable schools to engage in national initiatives, implement health promotion activities and develop competence. In order to drive a fundamental change, food and nutrition education must be integrated into the heart of the core curriculum. Nutrition education should be part of the key performance indicators for students, teachers, and schools, so that this health knowledge can make a lifelong difference for the children.

“Eating a healthful diet and developing a positive relationship with food sets children on a pathway to a lifetime of good health.”

“Food and nutrition education must be compulsory in all our schools; teachers should be supported professionally through their teaching career; and those supporting food and nutrition in schools must work together to make a lasting difference.”
Community Efforts to Educate and Create Policies to Improve Nutritional Health

Patricia Crawford (University of California Berkeley) outlined three key strategies to facilitate access to healthy foods.

Fundamental changes are needed to improve the current food environment, with the goal of making healthy food accessible for all. Several community-based strategies hold promise for helping a population gain access to healthy foods and while reducing access to less healthy foods.

The first strategy involves the use of food and beverage taxes to discourage the consumption of less healthy foods and beverages. This has been implemented in many countries, beginning ten years ago. Data from evaluation studies in Mexico and California have documented significant reductions in purchases of sugar-sweetened beverages, with the greatest impact seen among lower income households.

The second strategy uses the same principles, but operates through food programs that serve low income populations such as school lunch programs and food banks. Until recently, food banks, for example, have redirected food items to the poor without considering nutrition guidance. A better understanding of the benefits of nutritious foods has resulted in improvements in the quality of food items offered through these channels.

The third category of interventions involves the food retail environment. Retail interventions generally fall into three classes: price interventions in the form of incentives, vouchers, coupons and rebates; food access interventions including the opening of new stores and various food delivery programs; and store-based interventions including nutrition education, product placement and food and beverage stocking changes. The success of these measures greatly depends on how they are employed to increase the consumer’s access to healthy foods.

Philippines: Government Policies on Nutrition Education

By means of targeted policy changes, the Philippine government has made progress in addressing malnutrition amongst the Filipino population. Mario Capanzana (Food and Nutrition Research Institute) explained how.

In the Philippines, major changes in the food system and eating environment have occurred over the past decades. The rising tide of obesity and persistent malnutrition underscores the need for political action in order to help the people to make healthy food choices.

The Filipino government has implemented several policies with the goal of encouraging healthy eating. The Philippine Plan of Action for Nutrition (PPAN) 2017-2022 is an integrated plan of action for nutrition formulated by the national multi-sectoral nutrition community. Republic Act (R.A.) No. 11037 was developed specifically to combat hunger and malnutrition among Filipino children. On the other hand, the rising obesity rates prompted the development of guidelines on healthy food and beverage choices in schools as well as in education offices nationwide. An excise tax on sugar-sweetened beverages was part of the strategy to limit the consumption of unhealthy foods.

The private food industry has also played a major role in nutrition education in the Philippines. Campaigns such as the NutritionSchool.ph and United for Healthier Kids (U4HK) were launched to promote nutrition awareness and address undernutrition among children. Making a difference at the population level depends on developing realistic policies that enable the participation of all stakeholders, including the government, private industry, and the consumer. Past successes in overcoming complex problems (for example, reducing tobacco use) can provide a template for tackling malnutrition: address the consumer, the product (agricultural commodities, food), the environment (retailers, restaurants) and the culture (unhealthy eating, marketing).
SESSION 3

Nutrition Education for Healthcare Professionals

**Chairperson:** Helen Delichatsios (Harvard Medical School)

Patients expect physicians to be the source of health-related information, including for diet and nutrition. Paradoxically, most medical school curricula are poorly equipped for nutrition instruction. Martin Kohlmeier opened the session by describing the Nutrition in Medicine project, a highly scalable and cost-effective online tool to address these deficiencies. Another major hurdle is how to sift through the sheer quantity of information available and apply the relevant findings to clinical practice. Sumantra Ray discussed the work of the NNEdPro Global Center in bridging the gap between nutrition information and clinical practice. From a US perspective, Carine Lenders described the latest efforts made by medical associations including the American Society of Nutrition to integrate nutrition education in medical schools across the country. The new field of culinary medicine was the topic of Michelle Hauser’s talk, illustrating how nutrition science and culinary arts can be used to promote health and treat disease. In the final talk, Helen Delichatsios brings nutrition education to the clinic, identifying the main challenges and barriers and listing practical ways of overcoming them.

The Nutrition in Medicine (NIM) project is a computer-based training tool that incorporates interactive lessons, skill-building exercises, and practice challenges. The courses are available online and cover the full curriculum of nutrition-related topics from basic science to clinical practice. One advantage of this computer-based learning system is that users can progress at their own pace. Furthermore, the system has a built-in measure of learning success: if a student has not mastered a particular concept, the instruction can loop through another series of lessons or exercises to improve understanding.

The NIM materials are now used by a majority of US medical and osteopathic schools and many medical institutions around the world. An independent study of residents and fellows in gynecology and obstetrics showed that the use of an effective assessment and counseling tool resulted in improvements in clinical practice: before their learning session, most of these physicians rarely advised pregnant patients about proper weight gain. Three months later, the majority had included weight gain as a routine part of their patient work-up.

Computer-based instruction provides a highly scalable and cost-effective means of addressing the training deficits of physicians and healthcare providers, with the goal of improving nutrition proficiency.

Counterbalancing the Uncertainties of Medical Nutrition Education with Effective Online Instruction

**Nutrition instruction is a common deficit across most medical school curricula. Martin Kohlmeier (University of North Carolina at Chapel Hill) described the Nutrition in Medicine project as a means of addressing this deficiency.**

Many medical schools provide only a minimal level of nutrition instruction, and some fail to provide any nutrition instruction at all. Not surprisingly, there are significant deficits in the ability of physicians to assess patients’ nutritional needs and to combine nutritional therapies with medical treatments.

**Practicing physicians need to recognize nutrition-related health challenges in their patients and know what to do about detected problems.**
The NNEdPro Global Centre for Nutrition and Health – a Consolidated Review of Global Efforts Towards Medical and Healthcare-Related Nutrition Education

Sumantra Ray (MRC Elsie Widdowson Laboratory and University of Cambridge) discussed the work of the NNEdPro Global Centre in bridging the gap between nutrition information and clinical practice.

Although there is a tremendous focus on generating additional evidence from human nutrition research, there is a large gap between the data and clinical practice. Another challenge is the presence of largely unregulated information in the public domain that adds further confusion and conflict. How can we apply the learnings from such an overwhelming knowledge base towards improving the health of a patient?

To this end, healthcare professionals play a key role as reliable brokers of knowledge, translating nutrition science into clinical practice or public health interventions. However, a major hurdle is the lack of practice-ready nutrition information that has already been distilled from the archives of nutrition research. The NNEdPro Global Centre in Cambridge (www.nnedpro.org.uk) has been working as a partnership between doctors, dietitians, nutritionists and other healthcare professionals to identify the practice gaps that affect patients and the public. This often requires taking a step back to examine the available evidence base, in order to evaluate how this information can be conveyed for educational purposes, which aspects of the information can be implemented in clinical practice, and highlight areas where further research is needed. A successful transition from research to public health relies on application of the appropriate solutions that benefit health while addressing inequalities and strengthening the knowledge base.

The NNEdPro lean-innovation approach spans over 40 projects and initiatives in over 12 countries using the Knowledge-to-Action Cycle as a framework to ignite the implementation potential of high quality research to promote best practice.

Update on Nutrition Curricula for Medical Education, Research and Practice: USA Perspective

Carine Lenders (Boston University) gave a US perspective on where we stand with respect to nutrition education in graduate and undergraduate medical training.

In recognition of the need to enhance nutrition education in medical schools, the Nutrition Academic Awards (NAA) program was launched in 1997. The NAA has awarded grants to 21 US medical and osteopathy schools to improve the teaching of nutrition principles and clinical practice skills, with special emphasis on preventing cardiovascular diseases, obesity, diabetes and other chronic disorders.

The NAA effort has spearheaded the upsurge of nutrition education in medical school curricula. Other models to incorporate nutrition education have been implemented, such as online educational modules, culinary workshops, and dedicated courses. Importantly, there is a growing movement led by medical students themselves to champion further education and dialogue on nutrition.

In partnership with the American Society for Nutrition (ASN), the National Heart, Lung, and Blood Institute (NHLBI) convened several workshops to develop recommendations for remodeling nutrition education, training and research. A key workshop held in 2017 recommended an inter-professional approach to update the NAA curriculum guidelines. ASN was identified as the best positioned to promote the integration of nutrition education in medical and allied health professional schools. To this end, the ASN has established a coordinating center whose goal is to manage the resources, build the network and community, as well as to identify and disseminate funding opportunities. Funding partners are currently being enlisted through a public-private partnership platform.

Since the NAA effort, nutrition and lifestyle champions have developed several models to incorporate nutrition in the medical school curriculum.
Culinary Medicine Basics and Applications in Medical Education in the USA

The exciting new domain of culinary medicine is an evidence-based field that combines nutrition science and culinary art. Michelle Hauser (Stanford University) explains how this can be used to promote wellness, prevent and treat disease.

Culinary medicine was created to address the missed opportunities presented by nutrition education at all levels of medical education and in medical practice. The overwhelming body of evidence that points towards diet as the single most significant risk factor for morbidity and mortality in the US underscores the importance of dietary counseling and nutrition in clinical care.

Culinary medicine is a hands-on, practical approach to nutrition education that brings students into the kitchen to learn how to prepare delicious, healthy food while simultaneously learning key nutrition lessons. Today, the number of culinary medicine courses is expanding rapidly, alongside the number of novel teaching approaches. There is no rigid dietary dogma, and classes take place in all settings ranging from pop-up conference room kitchens to dedicated teaching kitchens. This flexibility allows culinary medicine to be taught in nearly any educational or professional setting. Importantly, residency programs are beginning to add culinary medicine to their curricula, primarily those focused on preventive medicine and lifestyle medicine. This suggests that key nutrition concepts are gaining ground in clinical practice.

The central aspect of culinary medicine that drives its success is that it moves nutrition education away from a focus on nutrients towards a focus on food in an engaging manner. This, in turn, aligns the healthcare professional’s approach to dietary counseling with the way that patients understand it best. Given the increasing prevalence of diet-related diseases, the demand for culinary medicine will likely continue to grow in the future.

Integrating Nutrition Education into Clinical Practice

How can the principles of nutrition education be applied in clinical practice? Helen Delichatsios (Harvard Medical School) identifies the challenges and barriers, and lists ways to overcome them.

The physician-patient interaction is a prime opportunity for patients to appreciate the link between nutrition and health. However, physicians face numerous barriers: in addition to inadequate training, skills, and tools, they also face brief contact times with patients, competing demands, lack of financial incentives, skepticism of nutrition approaches, and lack of a clear approach to nutritional counseling.

There are several tactics that can be used to overcome these during patient visits. These include consistently assessing BMI and identifying overweight or obesity as a separate condition to be treated. If needed, dietary evaluation should be performed. The risks should be clearly communicated to the patient using mindful language. Finally, writing a simple prescription can be a powerful way to provide dietary advice.

Interestingly, patients face many of the same barriers as physicians when trying to incorporate healthier eating into their lives. Any change requires persistence and can be more successful if a team is employed. Such a team includes the patient, the environment, other components of the health care team (e.g., dietician, counselors) and the physician serving as a pivot to leverage the expertise of other members of the team. Culinary shared medical appointments is a new approach that brings together several patients in an informal session that combines medicine and nutrition. Finally, it is important that physicians prioritize their own personal wellness and eating habits so that they can provide the best care for their patients.
The central role of nutrition education in shaping healthy eating and lifestyle behaviors is becoming increasingly recognized. Many countries are incorporating nutrition education as a key tool in their strategic arsenal for promoting health, combating obesity, and alleviating malnutrition and wasting. There is now a solid evidence base that supports the importance of targeting women and girls, in order to make a difference in the health of the child during the critical first 1000 days of life.

And in this era of information, nutrition education is more important than ever. Faced with a wide array of food choices, as well as a constant stream of messages on diet and health, the individual is hard-pressed to make the right decisions. From parents, to daycare workers, to physicians themselves, nutrition education is crucial for translating theory into healthy actions. Importantly, sound nutrition education is needed the help navigate the way through a sea of information towards healthy eating behaviors.

Integrating nutrition theory into social policy and clinical practice has challenges and opportunities. Interestingly, the challenges faced at the individual level, whether it be patient, physician, or daycare worker, are similar: time constraints, inadequate training and skills, competing demands, financial reasons, skepticism of nutrition approaches, and lack of a clear approach. An understanding of the individual challenges provides greater insight into the best means to achieve our goals. The combination of strategies and environmental supports that can be used are only limited by the imagination. Successful tactics are flexible, scalable and cost-effective. Online training, social media, and creative implementation of new settings (such as culinary medicine) are proving to be effective means of reaching out to a wider population.

Clearly, nutrition education is more than the sum of its parts.

The foundation for all of these activities is a solid evidence base. We now have a better understanding of the multiple factors that influence food choices and eating behavior. Nutrition specialists need to work in collaboration with all stakeholders, including educational institutions, communities, governments, and the private sector. There has never been a more important time to equip educators and policy makers with the means to make a real difference in the health of future generations.

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