

Dietary habits are a factor of healthy life of a society in the global world

¹Kulbaeva M.S. ²Koshkimbayev K.S. ³Elantsev A.B. ⁴Umbetiyarova L.B. ⁵Zharkova I.M. ⁶Shaikhynbekova R.M. ⁷Zhuniszhan A.

Abstract

A low level of functional education is a risk factor for lower levels of health literacy which in turn is considered to be a mediator in health results, currently representing an issue of interest in research on the management of the individual's state of health. Objectives: To determine the effects of literacy on health through the mediation of dietary habits on nutritional status.

Today, the biggest problem is overeating. People consume too many calories and poor quality foods, leading to chronic illnesses such as cancer, obesity, diabetes, or diseases of the cardiovascular system.

Unlike scurvy, these diseases can not be easily dealt with. They do not appear acutely in one night, but develop over the years. And buying a box of oranges does not get rid of them. It is necessary to study the entire diet and lifestyle of the patient in order to weed out all the risk factors that lead to the disease.

So the science of nutrition became inaccurate and confusing. A sea of conflicting studies has appeared, in which a lot of inaccuracies and limitations are easily discovered. Clutter in this area leads to nutritional confusion. Scientists cannot agree in any way, protect tomatoes from cancer or provoke it, red wine is useful or harmful, and so on. Therefore, journalists who write about nutrition often sit in a puddle, describing the next report.

Key words: proper nutrition, vitamins, diet, nutrition research problem

Introduction

Can adults drink milk or not? Fat-Free Foods - Solid Benefit or Evil Incarnate? Research says one thing, then another. And now the scientists themselves told why such a mess is going on in the science of nutrition. Once upon a time, studying nutrition was a simple affair. In 1747, Scottish doctor James Lind decided to find out why so many sailors have scurvy, a disease that leads to exhaustion and anemia, bleeding gums and tooth loss. So Lind arranged the first clinical study of 12 scurvy patients.

Sailors were divided into six groups, each had a different treatment. People who consumed lemons and oranges eventually got better. An irrefutable result that revealed the cause of the disease, that is, a lack of vitamin C.

Something like this solved the problem of nutrition in the pre-industrial era. Many diseases that were significant for that time, such as pellagra, scurvy, anemia, and endemic goiter, appeared as a result of a shortage in food of one or another element. Doctors put forward hypotheses and experimented until they experimentally found the missing part of the puzzle in the diet.

Unfortunately, now it's not so easy to study good nutrition. Over the course of the 20th century, medicine has learned to cope with most diseases caused by an unbalanced diet. In developed countries, for most residents this is no longer a problem.[1]

To give a rough idea of how difficult it is to study nutrition, Julia Belluz interviewed eight researchers. And that's what they said.

There is no point in conducting a randomized trial to find answers to common nutritional issues.

The gold standard for evidence-based medicine is a randomized controlled trial. Scientists recruit testees, and then randomly distribute them into two groups. One gets the medicine, the other a placebo.

^{1,2,3,4,5,6,7}Al-Farabi Kazakh National university

The point is that due to random sampling, the only significant difference between the groups is the use of the drug. And if the research results differ, it is concluded that the reason is in the medicine (just so Lind calculated that the fruits heal scurvy).[2]

The fact is that for most critical nutritional issues this approach does not work. It is too difficult to assign different groups different diets that will be strictly followed for a long time to determine which food affects which disease.

In an ideal world, I would take 1,000 newborns for research, and divide them into two groups. To feed one group only with fresh fruits and vegetables until the end of life, and the other with bacon and fried chicken. And then he would measure in which group he often suffered from cancer, heart disease, who would have been aging and dying, who would have been smarter and so on. But I would have to keep them all in prison, because there is no other way to get 500 specific people to try nothing but vegetables and fruits.

It is wonderful that scientists cannot detain people and keep them on a diet forcibly. But this means that existing clinical trials are littered and unreliable.

Take, for example, one of the most expensive and large-scale studies of Women's Health Initiative. Women were divided into two groups, one of which adhered to a normal diet, and the other - diets low in fat. It was assumed that the subjects will eat for several years.[3]

Results

The majority of participants (73.62%) were shown to have a health literacy deficit. The effect of the interaction between health literacy and dietary habits has a direct effect on abdominal perimeter and on neck circumference.

Differences in the level of health literacy were consistently associated with an increase in metabolic and cardiovascular risk. It is accepted that health literacy may affect disparities in indicators for the state of health. Priorities for future action to promote behaviours leading to the observation of healthy lifestyles including health literacy programmes.

Discussion

What is the problem? When the researchers collected the data, it turned out that no one was following the recommendations. And both groups ended up eating the same way.

Billions were wasted, and the hypothesis was never verified.

Walter Willett, physiologist, nutritionist at Harvard University

Strict, randomized, placebo-controlled studies can be performed for a short time. Some studies of nutritional supplements allow the subjects to stay in the laboratory for several days or weeks and control everything they eat.

But such studies cannot say anything about the effects of long diets that can be followed for decades. All we can find out is fluctuations in blood cholesterol, for example. Researchers only make assumptions that in the long run, something will affect health.

Researchers have to rely on observational data, which is full of unknown variables

Instead of randomized trials, scientists have to use observational data. They have been held for years, a huge number of people participate in them, who already eat the way researchers need. Periodically, checks are conducted among them to identify, for example, the development of cancer or diseases of the cardiovascular system.

So scientists will learn about the dangers of smoking or the benefits of physical education. But due to the lack of control, as in experiments, these studies lack accuracy.

Let's say you are going to compare people who have been eating a lot of red meat for decades and people who prefer fish. The first catch is that these two groups can differ in other ways. Nobody even randomly distributed them. Maybe fish lovers have higher incomes or better education, maybe they take more care of themselves. And it is precisely one of these factors that will influence the results. Or maybe meat lovers smoke more often.

Researchers may try to control these related factors, but tracking them all is unrealistic.

Many observational (and not only) studies rely on survey data. Scientists cannot stand behind each person for decades and keep track of what he eats. I have to ask.

There is an obvious problem. Do you remember what you ate for lunch yesterday? Crushed nuts in a salad? And then something to eat? And how many grams have you eaten chips this week?

Most likely, with the right accuracy, you will not be able to answer these questions. But a huge amount of research uses such data: people themselves tell what they remember.

When researchers decided to test these memory-based nutritional assessment methods for Mayo Clinic Proceedings magazine, they found that the data was "fundamentally wrong and hopelessly corrupted." Having examined the almost 40-year-old national study of the state of health and nutrition of the population, which was based

on independent reports on diet, scientists concluded that the stated number of calories, which were mentioned by 67% of women, could not physiologically correspond to objective data on their body mass index.[4]

Maybe this happened due to the fact that everyone lies and gives the answers that will be approved by public opinion.

But such studies cannot say anything about the effects of long diets that can be followed for decades. All we can find out is fluctuations in blood cholesterol, for example. Researchers only make assumptions that in the long run, something will affect health.

Researchers have to rely on observational data, which is full of unknown variables

Instead of randomized trials, scientists have to use observational data. They have been held for years, a huge number of people participate in them, who already eat the way researchers need. Periodically, checks are conducted among them to identify, for example, the development of cancer or diseases of the cardiovascular system.

So scientists will learn about the dangers of smoking or the benefits of physical education. But due to the lack of control, as in experiments, these studies lack accuracy.

Let's say you are going to compare people who have been eating a lot of red meat for decades and people who prefer fish. The first catch is that these two groups can differ in other ways. Nobody even randomly distributed them. Maybe fish lovers have higher incomes or better education, maybe they take more care of themselves. And it is precisely one of these factors that will influence the results. Or maybe meat lovers smoke more often.[5]

Researchers may try to control these related factors, but tracking them all is unrealistic.

Many observational (and not only) studies rely on survey data. Scientists cannot stand behind each person for decades and keep track of what he eats. I have to ask.

There is an obvious problem. Do you remember what you ate for lunch yesterday? Crushed nuts in a salad? And then something to eat? And how many grams have you eaten chips this week?

Most likely, with the right accuracy, you will not be able to answer these questions. But a huge amount of research uses such data: people themselves tell what they remember.

When researchers decided to test these memory-based nutritional assessment methods for Mayo Clinic Proceedings magazine, they found that the data was "fundamentally wrong and hopelessly corrupted." Having examined the almost 40-year-old national study of the state of health and nutrition of the population, which was based on independent reports on diet, scientists concluded that the stated number of calories, which were mentioned by 67% of women, could not physiologically correspond to objective data on their body mass index.

Maybe this happened due to the fact that everyone lies and gives the answers that will be approved by public opinion. Or maybe memory fails. Whatever the reason, this is not easier for researchers. I had to create protocols that take into account some errors.[6]

I need a camera, gastric and intestinal implants, as well as a device in the toilet that will collect all your secretions, instantly process them and send information about their full composition.

Christopher Gardner, a Stanford researcher, says in some studies he provides participants with food. Or it attracts nutritionists who closely monitor the subjects' diet, checking their weight and health status to confirm the purity of the experiment. He calculates the error that can be borne in mind when analyzing other results.

But researchers dream of more advanced tools, such as sensors that capture chewing and swallowing movements. Or trackers that will display the movement of the hand from the plate to the mouth.[7]

As if there were few problems with the accuracy of the data ... Scientists have learned that different bodies react differently to the same food. This is another factor that makes it difficult to study the effects of diet on health.

In a recent study published in the journal Cell, Israeli scientists watched 800 participants for a week, constantly collecting data on blood sugar levels to understand what kind of response in the organisms is caused by the same food. The reaction of each person was individual, this suggested that universal recommendations on the composition of the diet bring limited benefits.

It is clear that the effect of nutrition on health cannot be considered only from the point of view of what a person consumes. Much depends on how nutrients and other bioactive food components interact with each individual's genes and microflora.

Rafael Perez-Escamilla, Professor of Epidemiology and Public Health, Yale University

Foods that seem the same actually differ in nutrient composition. Local carrots grown on the farm will contain more nutrients than mass-produced carrots, which are on the shelves of supermarkets. A fast food hamburger will contain more fat and sugar than homemade. Even if people report what they ate, the difference in the composition of the products will still affect the result.

There is also the problem of replacing food. When you start to use one product in large quantities, you will have to limit the use of something else. So if a person decides to adhere to a diet rich in, for example, legumes, he will

most likely eat less red meat and poultry. The question arises, but what affected the results more: beans or refusal of meat?

The latter problem is vividly illustrated by studies of dietary fat. When scientists looked at a group of people on a low-fat diet, they found that a lot depended on what fatty foods were replaced with. Those who instead of fats began to consume sugar or simple carbohydrates, as a result suffered from obesity and other diseases in the same amount as people who consumed a lot of fats.[8]

The difficulties of studying nutrition create the feeling that learning something unambiguous about the effect of the diet on health is generally unrealistic. But this is not so. Researchers have been using all these imperfect tools for years. A slow and attentive approach pays off.

Researchers described how they determine which data to trust. In their opinion, it is necessary to evaluate all available studies on one issue, and not single reports.

They also recommend looking at different types of studies that focus on one subject: clinical studies, observational data, and laboratory studies. Different work with different introductory, different methods, leading to the same results, is an objectively good indicator that there is a connection between diet and changes in the body.[9]

You need to pay attention to the source of funding for the study. Independents are funded by state and public funds, they cause more confidence, in particular because the research plan has fewer restrictions.

Good researchers never say that they have found superfood, and do not recommend completely abandoning a particular product, do not make bold statements about the effects of eating a particular fruit or type of meat, limiting itself to the assumption that a particular diet may be useful.[10]

Conclusion

These tips reflect the general views of a group of researchers recently discussing nutrition and health. Here are the conclusions of their meeting:

A healthy diet consists of a large number of vegetables, fruits, whole grains, seafood, legumes, nuts, low fat; moderate consumption of alcohol, red meat and processed meat products must also be observed. And there is also less sugar and processed grains. It is not necessary to completely abandon any group of products or adhere to a strict diet to achieve a positive effect. You can combine foods in many ways, making your diet balanced. Diet should take into account individual needs, preferences and cultural traditions.

Claims that cabbage or gluten, for example, kill humanity cannot be called the voice of science. Because, as we understood, science simply cannot prove anything like that.

References

- [1] Roelse, H. (2012). Deconstructing the concept of the healthy eater self-schematic: Relations to dietary intake, weight and eating cognitions. *Eating Behaviors*, 13(2), 106-111.
- [2] Kroese, F. M., Evers, C., & De Ridder, D. T. (2011). Tricky treats: Paradoxical effects of temptation strength on self-regulation processes. *European Journal of Social Psychology*, 41(3), 281-288.
- [3] Leach, C. W., van Zomeren, M., Zebel, S., Vliek, M. L., Pennekamp, S. F., Doosje, B., . . .
- [4] Spears, R. (2008). Group-level self-definition and self-investment: A hierarchical (multicomponent) model of in-group identification. *Journal of Personality and Social Psychology*, 95(1), 144-165.
- [5] Meyer, S. S. (2001). Dietary fat reduction behaviors in college students: Relationship to dieting status, gender and key psychosocial variables. *Appetite*, 36(1), 51-56.
- [6] Davies, S., Smith, J., & Terry, D. (2007). Pizza and pop and the student identity: The role of referent group norms in healthy and unhealthy eating. *Journal of Social Psychology*, 147(1), 57-74.
- [7] Mahwah, NJ, US: Lawrence Erlbaum Associates Publishers.
- [8] Madden, H., & Chamberlain, K. (2004). Nutritional health messages in women's magazines: A conflicted space for women readers. *Journal of Health Psychology*, 9(4), 583-597.
- [9] Hopton, J. L. (2003). Healthy eating: The views of general practitioners and patients in Scotland. *American Journal of Clinical Nutrition*, 77(4), 1043S-1047p.
- [10] Garner, D. M., Garfinkel, P. E., Schwartz, D., & Thompson, M. (1980). Cultural expectations of thinness in women. *Psychological Reports*, 47(2), 483-491.