Ann Ig 2023 (May-Jun); 35(3): 359-366 doi: 10.7416/ai.2023.2558.

SHORT PAPER

The Sapienza count-down for a healthy and sustainable diet

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Key words: Mediterranean diet, positive nutrition
Parole chiave: Dieta mediterranea, nutrizione "positiva"

Abstract

The prevalence of obesity and of other non-communicable diseases related to overnutrition is significantly increasing in the past few years. Policy makers are called to counteract this pandemic, orienting consumers towards a healthier and more sustainable diet.
Most of the proposed initiatives are dedicated to the content of nutrients with "unfavourable" effects but, in fact, focusing the attention only or mainly on single foods or nutrients is not effective in decreasing the incidence/prevalence of non-communicable diseases. Whole dietary patterns play by far a more important role than specific dietary components in promoting health and modulating survival; and the adherence to eating patterns like the Mediterranean diet reduces the risk of non-communicable diseases.
The challenge is therefore to be able to transmit information relating to a healthy eating pattern through positive messages in a few simple indications which in turn represent the nutritional, but also the socio-cultural, environmental and economic characteristics of a healthy and sustainable dietary model.
The Mediterranean Diet is normally proposed through a graphic depiction that represents a pyramid which is a simple and effective representation but not of immediate impact.
For this reason, we are proposing to adopt the "Sapienza Count-down for a Healthy and Sustainable Diet" that will integrate the pyramid with a more immediate approach.

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Annali di Igiene : Medicina Preventiva e di Comunità (Ann Ig)
ISSN 1120-9135 https://www.annali-igiene.it

Introduction

Policy makers are asked to counter the pandemic of obesity and of other non-communicable diseases by orienting consumers towards a healthier and more sustainable diet, integrating nutritional labels (usually on the back of the package - BOPLs , and more recently on the front of the pack - FOPL) (1, 2).

FOPLs can be distinguished according to the **complexity of the information** that is provided (e.g., displaying nutrient-specific information or declaring a global judgement of the whole product), as well as their **"directionality"** (e.g., the kind of steering or evaluative message with regard to healthiness) (3). On these bases, they can be categorized as follows:

"Informative" and "non-directive" labels, that provide information such as the name of nutrients included, their amount in grams, and their percentage in relation to total daily needs and allowances (e.g., Nutrinform Battery)

"Directive" labels, that include little information, often aggregated in a single symbol (e.g., Swedish Keyhole, Nutri-Score) and combining several criteria. They give an indication about the healthiness of the product, expressing judgements, opinions and/or recommendations, without providing specific information on single nutrients.

In particular the information provided by FOPLs are focused on nutrients considered "critical" (with negative attributes when consumed in excess, i.e. sodium, saturated and trans fatty acids – SFAs and TFAs - and sugars). Based on qualitative/quantitative assessment of the content of specific macronutrients and salt (low, medium, high), they condense this information into a color or number, finally assessing the product's healthfulness (4, 5).

The limits of "negative" information

Different studies have been performed to verify the effectiveness of FOPLs, on increasing the number of healthy items purchased. The results are conflicting: some studies have found positive results with a significant reduction in the purchase of unhealthy products (6-8), while others have found no significant effect on consumers' behavior (9-13).

FOPLs (and in particular "directive" ones) are focused on the content of nutrients with "unfavourable" effects (in the Nutri-Score, for example, these nutrients confer up to 40 negative points compared to nutrients with "favourable" effects, which bear a maximum of 15 positive points) (14). This approach in fact is in contrast with the most recent scientific data stating that dietary policies focusing on promoting the intake of components of diet, for which current intake is less than the optimal level, may have a greater effect than policies only targeting "negative" nutrients: among 15 nutritional factors that most influence health, 11 refer to foods and nutrients that are consumed in insufficient amounts, such as whole grains, nuts, seed, and seafood. Only four (sodium, red meat, processed meat, and sugar-sweetened beverages) refer to nutrients/foods that are consumed in excessive amounts. Apart from sodium, these play a negligible role as real health determinants (15, 16). Based on these considerations the American Dietetic Association (ADA) (now Academy of Nutrition and Dietetics) published a position paper that warned nutrition professionals against classifying foods as good or bad because it could foster unhealthful eating behaviour. When recommendations focus their indication on the foods to avoid, the position paper stated, the good/bad dietary dichotomy is automatically created (17).

Eating patterns vs single nutrients

Focusing our attention on single foods or nutrients is not effective in decreasing the incidence/prevalence of NCDs. Reducing the energy density of certain foods does not

seem to have good results in the fight against obesity or in improving dietary behavior (18) while the attention placed on some single nutrients (e.g. saturated fatty acids or fat intake as a whole) (19, 20) or single foods (e.g. cheese, butter) (21, 22) does not significantly reduce the risk of different NCDs (in particular cardiovascular diseases or type 2 diabetes) and all-cause mortality.

In fact, the research has shown that since people have complex dietetic patterns, the whole diet plays a more important role than specific dietary components in promoting health, modulating survival (23) and modifying incidence/prevalence of NCDs (24, 25).

For example, the adherence to eating patterns like Mediterranean diet (MD) reduces the risk of NCDs such as cancer, neurodegenerative diseases, Cardio-Vascular Diseases (CVDs), type 2 diabetes, metabolic syndrome and obesity and is therefore inversely associated with mortality from all causes (26-28).

Moreover, studies on MD, while always confirming its capacity to reduce the risk of all NCDs, showed inconsistent results with respect to which individual component was more associated to protection towards NCDs (29-32). The results of a systematic review conducted by Grosso et al suggest that the health benefits of MD pattern are mainly due to the existence of biologic interactions between different components of it rather than to the effect of a single food group or nutrient. Considering CVDs, plausible mechanisms underlying the protective effects of MD include the improvement of blood lipid profile as well as the reduction of blood pressure, insulin resistance and serum markers of inflammation or metabolic syndrome (33).

Finally, the MD best represents the FAO definition of a sustainable diet as a dietary pattern with low environmental impacts, which contributes to food and nutrition security and to healthy life for present and future generations. MD is protective and respectful of biodiversity and ecosystems, culturally acceptable, accessible, economically fair and affordable; nutritionally adequate, safe and healthy; while optimizing natural and human resources (34, 35).

Therefore the MD may be considered more than a food pattern (36). It is a lifestyle of the population surrounding the Mediterranean Sea. It includes its cultural heritage, cuisine, agriculture, and social habits regarding food (commensality and conviviality). In 2010 UNESCO recognized the Mediterranean Diet as an "intangible heritage of humanity" acknowledging its paternity to Italy, Greece, Morocco, Cyprus, Croatia and Portugal (37).

Benefits of "positive" nutrition

By adopting a concept of "positive biology", we should devote ourselves more to the study of healthy and long-lived populations (to steal from them the secrets of this reality), than - as we have done so far - devote ourselves only to the study of chronic-degenerative diseases and of the related risk factors. Positive biology analyzes both genetic, environmental and behavioral factors, in particular the choice of food and eating habits, in order to be able to transfer the collected elements to all populations. Positive biology tries to understand genetic aspects and environmental elements, related in particular to nutrition, that can be linked to a successful aging, to transfer them to the rest of the population (38).

Similarly the "positive nutrition" is in contrast to the "negative nutrition" that identifies nutrients / foods to be banned. It seems not to be appropriate to promote a healthy eating pattern through "negative" advertising/labeling. Discouraging or forbidding single foods is in most cases ineffective, while the consumption of foods labeled as healthy does not necessarily lead to a well-balanced diet. It is probably more

effective to have "positive" indications that point towards a healthy dietary pattern.

An attempt to easily transfer information concerning Mediterranean Diet to consumers

Communicating to consumers the correct indications on how to adopt eating habits capable of preventing obesity and NCDs is not easy (39). Diet is complex, consisting of hundreds of components and mixtures of foods spanning over more than a hundred of nutrients and bioactive molecules. There is the necessity to increase the nutrition literacy of the consumers that seems to be relevant on the quality of people' diets but the most effective type of nutrition literacy interventions need to include people's involvement with multiple modalities, a duration of more than 4 weeks, and face to face sessions (40). The temptation to try to simplify as much as possible the messages to address to consumers is strong, but the risk to become simplistic and ineffective is stronger.

The challenge is therefore to be able to transmit information relating to a healthy eating pattern in a few simple indications which in turn represent the nutritional, but also the socio-cultural, environmental and economic characteristics of a healthy and sustainable dietary model.

Moreover, these information need to be conveyed through positive messages (41, 42) that seem to be more effective compared to negative and restrictive ones which are transmitted, for example, through FOP labelling system using colour coding of traffic lights.

The MD is normally proposed through a graphic depiction that represents a pyramid (43) and which places at the base the foods that should be more frequently eaten, and at the top those to be consumed less frequently (35, 44). It is a simple and effective representation but not of immediate use.

For this reason, we are proposing to adopt the "Sapienza count-down for a healthy and sustainable diet" (Figure 1) that will integrate the pyramid with a more immediate approach, considering the number of servings included in the last published pyramid proposed by Serra-Majem et al in 2020 (35).

Counting down from 5 to 1 is easy to remember and effectively represents a path that leads to the final result (the departure for a rocket, the achievement through the 5 steps of a healthy and sustainable diet).

In fact, the indication given by the 5 steps [5 servings a day of seasonal and local fruit and vegetables, possibly in 5 different colours; 4 servings of cereals (preferably whole grains); 3 tablespoons of EVO; 2 servings of milk and dairy; 1 serving of meat, fish, eggs or pulses (alternatively)] are perfectly in line with the indications of the MD and the progressive approach to an expected goal: the definition of all nutritional / health, socio-cultural, economic sustainability and sensorial values of an optimal diet for the human beings and for the planet.

Taking into account the need to simplify the message to be given to consumers as much as possible, some aspects included in the MD and in the food pyramid that represents it (34) have been omitted (water, nuts, seeds, spices, wine, conviviality, physical activity and rest, culinary activities, moderation). These are important aspects but they hardly find space in an instrument that wants to be easy to use and mnemonically suitable.

Conclusion

There is the need to transmit information relating to a healthy eating pattern through positive messages in a few simple indications which in turn represent the nutritional, but also the socio-cultural, environmental and

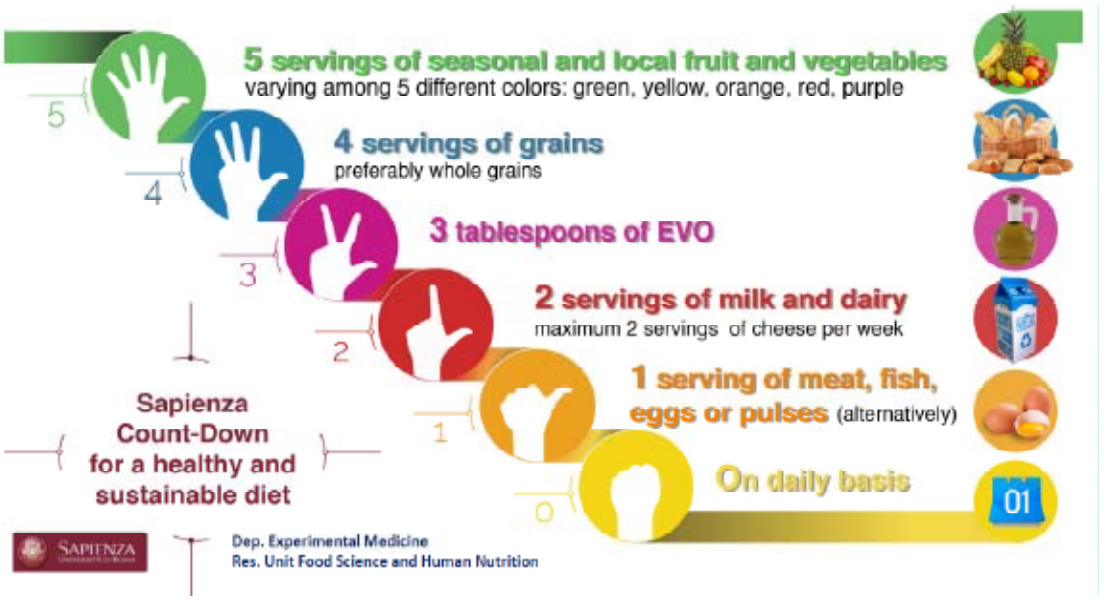

Figure 1 - The Sapienza Count-down for a Healthy and Sustainable Diet

economic characteristics of a healthy and sustainable dietary model.

The pyramid proposed for the Mediterranean Diet is a simple and effective example, but not of immediate use.

For this reason, we are proposing to adopt the "Sapienza Count-down for a Healthy and Sustainable Diet". that could integrate the pyramid with a more immediate approach.

The effectiveness of the countdown as a mnemonic educational tool capable of better and easier addressing eating behaviours will be tested in future research works involving subjects with different ages and socio-cultural status.

Riassunto

Il Sapienza *count-down* per un'alimentazione sana e sostenibile

La prevalenza dell'obesità e delle malattie non trasmissibili legate all'obesità è in forte aumento in questi ultimi anni. I decisori politici sono chiamati a contrastare questa pandemia, indirizzando i consumatori verso scelte alimentari compatibili con una dieta più sana e sostenibile.

La maggior parte delle iniziative proposte sono incentrate sul contenuto di nutrienti con effetti "sfavorevoli", ma focalizzare la nostra attenzione su singoli alimenti o nutrienti non è efficace nel diminuire l'incidenza/prevalenza delle malattie non trasmissibili. I modelli dietetici che considerano l'introito complessivo della giornata alimentare del singolo cittadino e della comunità di riferimento svolgono un ruolo più importante rispetto ai componenti dietetici specifici nel promuovere la salute, modulando la sopravvivenza e l'aderenza a modelli alimentari come la dieta mediterranea riduce il rischio di malattie non trasmissibili.

La sfida è quindi quella di riuscire a trasmettere informazioni relative ad un modello alimentare sano attraverso messaggi positivi in poche semplici indicazioni che a loro volta rappresentino le caratteristiche nutrizionali, ma anche socio-culturali, ambientali ed economiche di un modello alimentare sano e sostenibile.

La Dieta Mediterranea viene normalmente proposta attraverso una rappresentazione grafica di una piramide, che è una raffigurazione semplice ed efficace ma non di immediata fruizione.

Per questo proponiamo di adottare il "Sapienza *count-down* per un'alimentazione sana e sostenibile" che integrerà la piramide con un approccio più immediato.

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