

Health Education in Adolescence: Mass media, advertising and cholesterol

Educación para la salud en la adolescencia: Medios de difusión masiva, publicidad y colesterol

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To the Editor,

Health education is one of the great challenges of the many educational reforms launched in Spain¹, and Biology is a particularly propitious subject for such purposes².

Since I started teaching, more than 25 years ago, I have been checking how the texts and didactic means available to students have undergone huge transformations. Biology teaching has become visual, its contents have been lowered to give way to cross-cutting content, basic skills, and a number of names that even the parents of educational reforms themselves do not know what really mean.

Education in values, road safety education, sex education, health education... Educate, educate, educate... Students are bombarded with good practice-decalogues in every area of their lives. However, you can say, with a deep feeling of sadness and failure, that our young people have never been farther away from leading a healthy life. The reason is we are losing common sense and perspective.

In general, parents no longer educate, the social demagoguery prevailing in Spain has relieved them from such responsibility, which has been entrusted to schools. Teachers are in charge of carrying out the difficult task not only of teaching but also educating^{4,5}. However, teachers have ironically lost prestige and social respect, so that for most parents

and for society as well it seems to matter little what children and adolescents are taught in class. Right what they need to pass and that is all.

Then, who is educating our young men? Well, with some misfortune, the less suitable sites: social media, internet and television⁶. Those are the new creeds. It is impossible to refute what students or parents have heard on television or seen in a video on Youtube, especially if it has become “viral”, a curious use of the term, by the way.

Advertising constantly bombs and manipulates people creating needs and distorting reality with the sole objective of making a few thousand.

As a biologist, specialized in biochemistry, and a teacher, I am very surprised and unsettled by certain advertising campaigns, which in the best of cases only harm the citizen's pocket, and at worst, may interfere with the good judgment of medical professionals.

Cholesterol has become a source of businesses income for the western world. They have all turned it into «the bad guy». So that as soon as it is named in class, students would not let up, you do not even have time to draw its fantastic cyclopentanoperhydrophenanthrene ring, before you are done with the formula, there arises this impossible-to-hush murmur at the end: “*teacher, hey, that's very bad huh?*”.

“*¿Why is it bad?*” –They are asked– and most respond: “*'cause you can die if you have it on your*

blood'. Yes, ladies and gentlemen, that is our 15-16 years old students' level of knowledge.

We all have blood cholesterol! Not having it would be the problem. But it does not matter if it has already been mentioned as a member of the lipid bilayer of cell membranes^{7,8}, they know it; but they learn it with suspicion. No matter what teachers say, cholesterol is bad. TV says so, his mother says so, and the lady on the fifth floor says so...

No matter if they are told it is the irreplaceable precursor of all hormones, vitamin D and bile salts^{7,9}. Whether or not they know these substances, it is the same, they can be examined and get good marks in such contents, but anyway will go on thinking cholesterol is bad.

Lately, advertisers go further and even discriminate between oxidized and non-oxidized cholesterol, so that they can even include certain supposedly antioxidant agents in their propaganda, and thus «kill two birds with one stone». If the goal is preventing cholesterol oxidation, we might wonder why not starting a campaign against oxygen then? But, no, without oxygen every aerobic organism would die. Well, maybe not, maybe if advertizing followed these tracks, students would come to ask: "*teacher, know what? Oxygen is terrible, breathing is the worst thing!*".

Such is our citizens' advertising brainwashing. And the goal has been more than fulfilled: in most's heads, especially young people's, the seed of lowering blood cholesterol levels at all costs has been sown.

Here advertizing craftily raises two ways to achieve such an objective:

- Sacrifice, that is, depriving yourself from products rich in saturated fats (the vast majority do not know what they are, but it does not matter). This is the advertising trap¹⁰. Saturated fats are usually present in foods pleasing to the palate, and no one with a good taste wants to do without them; so, sacrifice does not seem to be a good alternative in the «welfare society» we are living in.
- The other way is presented as the savior before the prior bait. So, once set it, alternative appears: the miraculous food; either as yogurt, or fish oil concentrates or vitamin complexes or all cows' milk, which has everything but milk...

Curiously, all these products also have a higher market price than their «non-curative» equivalents. A typical example is one of them and its «innate ability» to lower blood cholesterol by 10%, which, well,

for someone with levels of 300 mg/dL, would drop to 270 mg/dL, would not absolutely change cardiovascular risks just because of keeping figures above normal values. Life will not depend on that, I assure you; as DuBroffy de Lorgeril¹¹ suggests, the hope of preventing or eliminating ischemic heart disease by simply reducing cholesterol is groundless.

But people buy them. They may not need them, and in most cases may not be effective, but they feel good about consuming them¹⁰. Faced with gluttony, there is miraculous food to save their lives.

Truth is, as Castro Gora¹² puts it, that young people are those most used by advertising, which draw on deception to attract them to their products, giving them some benefits that are uncertain.

A survey carried out during the current school-year to 3rd year students of Compulsory Secondary Education and 1st and 2nd year of high school (**Table**), reveals the surprising fact that 87.1% of them or some of their relatives, would take first a miracle food to lower cholesterol than a specific medicine prescribed by their doctor. Why is this happening? Has medical profession lost its prestige too? Well, in a way, it has. Advertising is sold to us as something natural, while doctors offer medicines, which are on the «bad» side: that of chemicals.

- *A medicine doctor? I'd rather prefer something natural, like yogurts, that's what TV says.*

From the 1960-70, a fierce natural versus unnatural campaign started, the vegetarian, vegan diets arose; as if an ox-chop was not natural. Why is a lettuce leaf healthier than a steak? Curious, isn't it? Humans are omnivorous, they need carbohydrates, proteins and fats, and can assimilate them¹⁴, then why such approaches?

So, at this point, advertising sells us natural products, and therefore, presumably, healthier ones¹⁵. Society in its vast majority prefers an advertising medicine than a pharmacy's, because pharmacy is no longer considered natural, medicines are chemistry, and chemistry belongs to the bad side. The level of pseudoscientific advertising's manipulation in Spain, in Europe, and perhaps worldwide, is incredible^{12,15,16}.

It is a fraud similar to homeopathy; foods that lower cholesterol are part of the new 21st century homeopathy. But the problem growing near is much deeper, in our opinion it obeys to the Western world attitude. We have become comfortable, foodies, we do not want to give up anything that gives us pleasure, and we reject everything that involves some

Table. Survey results.

GROUP	Yes		No	
	Nº	%	Nº	%
3º C – CSE	20	86,9	3	13,1
3º D – CSE	22	88,0	3	12,0
3º E – CSE	15	93,8	1	6,2
1º A – High school	15	75,0	5	25,0
1º AA – High school	29	87,9	4	12,1
2º A – High school	14	93,3	1	6,7
Total	115	87,1	17	12,9

CSE: Compulsory Secondary Education

effort. Losing weight, without stopping to eat, aging without wrinkles, and living without life's required commitment.

Alvarado López¹⁵ demands more ethics and professionalism on advertising. On the other hand, Teruel Benítez¹⁶ suggests that media can be, in many cases, children's best ally, because of its great information, education and entertainment potential. But that same media may also have the power to transmit wrong messages which do not foster positive values.

There is a long way to go in the formation of our young people from the scientific culture, to develop in them an adequate critical sense before media and social networks' bombing. But that work, although it is true that begins in the schools and teachers, cannot fructify if we lack support from society, families, and government and state institutions¹⁷. Young people are our future. It is all's task educating or manipulating them, the difference between both aspects is not so great; a very subtle line separates them.

Therefore it is imperative an increase of visual, TV and radio information by those who are experts in these subjects, who, with sufficient scientific power, can face this misleading advertising and transmit the true values (benefits and risks) of cholesterol¹⁸⁻²⁰ to the new generations, just to mention an example.

CONFLICT OF INTEREST

None

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