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Factors related to sugar consumption by young people in Portugal: public policies and nutritional literacy 1

Fatores relacionados ao consumo de açúcar por jovens em Portugal: políticas públicas e alfabetização nutricional

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Abstract: To reduce the burden of diet-related non-communicable diseases, promoting healthy eating habits has become a concern of modern societies. In this vein, in addition to trying to improve the health literacy of its population, the Portuguese authorities have recently levied taxes on food products that are deleterious to health. Despite the young exhibiting better health literacy, they also tend to overconsume these products. This research analyses the influence of public policies on healthy eating and of health literacy on the health management of young adults. We applied an online survey to young adults who were attending a university degree at Universidade de Lisboa. The collected data were processed by statistical analysis, using SPSS software. Although most of the young respondents recognize their importance in managing their individual health, a large majority are unaware of the public policies in place and frequently over consume sugar. Public policies on healthy eating thus need to reconsider the role of young people as agents of participation, promoting knowledge about the measures and providing them with tools to manage their own health.

[1] This article is based on the research leading to the preparation of Inês Martinho's Master Dissertation entitled Políticas Públicas de Alimentação Saudável, Literacia sobre os Açúcares e Gestão da Saúde dos Jovens Universitários. This dissertation was presented and discussed in public examinations for the degree of Master in Administração e Políticas Públicas at ISCSP – Instituto Superior de Ciências Sociais e Políticas of ULisboa.

KEYWORDS: Public policies on healthy eating. Fiscal Policies. Health Literacy.

RESUMO: Para reduzir a carga de doenças não transmissíveis relacionadas com a alimentação dieta, promover hábitos alimentares saudáveis tornou-se uma preocupação das sociedades modernas. Nesta linha, o governo português tem adotado políticas para aumentar a literacia em saúde e aplicado impostos sobre produtos alimentícios prejudiciais à saúde. Apesar de os jovens apresentarem maiores níveis de literacia em saúde, são o grupo etário que mais tende a consumir produtos açucarados em excesso. Esta pesquisa analisa a influência das políticas públicas de alimentação saudável e da literacia em saúde na gestão da saúde dos jovens adultos. Aplicámos um questionário online a jovens adultos alunos de qualquer licenciatura na ULisboa. Os dados foram sujeitos a uma análise estatística com recurso ao *software* SPSS. Embora a maioria dos jovens inquiridos reconheça a sua importância na gestão da saúde individual, grande parte desconhece as políticas públicas de alimentação saudável em vigor e consome açúcar em excesso frequentemente. As políticas públicas de alimentação saudável precisam reconsiderar o papel dos jovens como agentes de participação, promovendo o conhecimento sobre as medidas e disponibilizando-lhes ferramentas de gestão da própria saúde.

PALAVRAS-CHAVE: Políticas Públicas de Alimentação Saudável. Políticas Fiscais. Literacia em Saúde.

1. FAT TAXES AS A PUBLIC POLICY FOR THE ADOPTION OF HEALTHIER EATING HABITS

The promotion of a healthier diet and lifestyle habits is a transversal focus of modern societies in line with the guidelines of the World Health Organization (WHO), the European Commission and the Organisation for Economic Cooperation and Development (OECD) itself. To this end, governments have been taking specific measures on food products that are negatively related to health, namely through fiscal policy, using taxes as a deterrent. For example, tobacco products and alcoholic beverages have long been subject to specific higher taxation in many countries, precisely to discourage consumption.

In recent years several OECD countries have introduced or increased excise taxes on foods high in salt, sugar or fat, among others. Such

indirect consumption taxes have been seen both as an additional source of tax revenue and as a means of addressing the negative externalities associated with their consumption. More recently, greater emphasis has been placed on public policies promoting healthy lifestyles, as the adverse consequences for public health of consuming a wide range of foods with those characteristics become better known (Sassi, 2010).

Some studies on the health effects of these policies show that taxes on high sugar content foods can be a relevant tool to improve health, although the extent and complexity of these effects require careful consideration by policy makers in taking new directions for this public policy. The arguments for using taxes to achieve improvements in citizens' habits and public health are very evident for tobacco products and alcoholic beverages, but they are also less visible for foods, including non-alcoholic beverages added with sugar and other sweeteners (Bonnet & Requillart, 2012).

These studies suggest there is some positive impact on food consumption after the implementation of taxation measures on sugary drinks. This is the case of the study carried out by WHO (WHO, 2015a) which, based on observations of tax policies implemented in Denmark, Finland, France and Hungary, suggests that the results in these cases are consistent with theoretical models showing that these policies have the potential to change consumer behaviour.

In the case of these drinks, several authors indicate that the use of this type of tax generates very varied concrete effects, which depend on the solution concretely implemented, and the temporal, cultural or social context in which they are applied (Andreyeva et al., 2011); (Bonnet & Réquillart, 2011). This is a phenomenon called "overshifting" (Anderson et al., 2001); (Bonnet & Réquillart, 2012); (Keeler et al., 1996).

Several other authors point out that it is very difficult to obtain an answer to the question whether the policy of taxing soft drinks with added sugar and other sweeteners has a positive impact on public health. This is not only because of the long time lag between the change in

behaviour and the public health consequences, but also because of the difficulty in isolating the effects of this policy on a multitude of other competing factors. Still, with regard to this type of drinking, several studies provide evidence of the long-term health impact of taxes (Cobiac et al., 2009); (Lhachimi et al., 2012); (Meier et al., 2010); (Purshouse et al., 2010); (Tariq et al., 2009); (van den Berg et al., 2008).

These studies suggest that this relationship between taxation and impact on public health is not so clear. They point to weak evidence that changes in the price of these beverages, motivated by taxes (or subsidies), produce relevant modifications in consumption, generating health benefits. Some other studies report that there is a greater correlation between the increase in the price of these beverages and their consumption in people with lower socioeconomic status and at risk of overweight or obese (Eyles et al., 2012); (Goldman et al., 2009); (Powell & Chaloupka, 2009). Still, other studies were able to relate the increase in vegetable consumption to a decrease in the number of cancer cases in the adult population (Holm et al., 2013).

Portugal has adopted a model, which has since been reinforced in the UK, of a system of taxation based on more than one level of tax, depending on the level of sugar in the drinks concerned. Both countries' schemes claim to aim either to change consumption decisions or to change the behaviour of companies to alter the level of sugar in the beverages they produce. Many other countries have similar schemes, such as Finland, Hungary, Denmark, France, Estonia and Spain, among others. The United States, Mexico, Ireland, Belgium, Norway, South Africa and Chile have systems based on a single percentage, or rate/rate, with the general characteristic that these tend to be higher than those of countries with systems based on different levels of taxation.

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Despite the diverging results, States have been reinforcing their public policies to discourage the consumption of soft drinks containing sugar and other sweeteners, although with different focuses. Portugal is no exception and introduced a specific tax regime for this purpose around 5 years ago.

The portuguese regime is broadly aligned with the general canons of fat or food taxes (or twinkie taxes; soda tax; chips tax or junk food taxes), which seems to have been originally proposed by Kelly Brownell, from Yale University, in the early 1990s, proposing the creation of a tax on this type of goods (Alemanno & Carreno, 2011). According to these authors, fat tax can be defined as a tax applied to fattening foods, drinks or individuals, established by law through a public authority, with the aim of reducing the consumption of foods that are linked to obesity, without a sanctioning character.

In the portuguese case, a special tax on certain foods that are harmful to health was created, with the same logic as the special taxes on tobacco and alcohol consumption. Its purpose is, in addition to revenue, to influence consumer behaviour, leading them to reduce their consumption of unhealthy goods, thus stimulating healthy habits. The various Portuguese excise taxes are, to a certain extent, Pygouvian taxes, with extra-fiscal purposes, to the extent that they aim at correcting or compensating, at least in part, the negative externalities generated by a certain activity (Aizega Zubillaga, 2000).[2]

[2] In fact, it cannot be said that its seminal idea is entirely new, insofar as, as Arthur Pigou noted, it concerns models of special taxation on goods and services whose prices do

This type of tax aims, in the first place, to correct socially unvalued behaviors, such as sin taxes, minimizing the negative externalities of these behaviors, and not to increase tax revenue (Strnad, 2004); (Vasques, 1999); (Catarino & Guimarães, 2021). According to these authors, the structuring aspect of alcohol, tobacco or fuel taxation is clearly denoted by the adjustment of these taxes to the maximum point of their productivity curve. However, the resulting tax burden does not seem to disturb the fiscal anesthesia that surrounds its collection, where what seems to stand out are two structural aspects: the penalization of consumption that is not only prejudicial from the social point of view, but also superfluous, and the internalization of externalities (Vasques, 1999); (Clímaco, 2000); (Brigas & Caneira, 1996). Examples of Pigouvian taxes are taxes on cigarettes, alcohol, gambling and environmental emissions.

This type of tax aims, prima facie, to correct socially undervalued or even repudiated behaviors, such as sin taxes, minimizing the negative externalities of these behaviors, not having so much the purpose of increasing tax revenue (Strnad, 2004); (Vasques, 1999); (Catarino & Guimarães, 2021). According to these authors, the structuring aspect of alcohol, tobacco or fuel taxation is clearly denoted through the adjustment of these taxes to the maximum point of their productivity curve. However, the resulting tax burden does not seem to disturb the fiscal anaesthesia surrounding its collection, where what seems to stand out are two structuring aspects: the penalisation of consumption that is not only harmful from the social point of view, but also superfluous, and the internalisation of externalities (Vasques, 1999); (Clímaco, 2000); (Brigas & Caneira, 1996). Examples of Pygouvian taxes are taxes on cigarettes, alcohol, gambling and environmental emissions.

A controversial aspect of taxes of this nature, with predominant extra-fiscal effects and claims to shape people's behaviour, is that they

not reflect the true social cost of their consumption, as in the case of taxes on tobacco, alcohol and alcoholic beverages (Pigou, 1929).

tend to be more burdensome for people with lower incomes. In the case of fat taxes, the aim is to make taxpayers change their pattern of consumption of unhealthy foods and alter their diet by replacing it with healthier products. Given that different taxpayers have different contributory capacities, such taxes are to some extent regressive from an income point of view, not only because they tend to be consumed by taxpayers with lower contributory capacity, but also because it is difficult for them to consume substitute products which are better for public health but, naturally, more expensive. This is a generally recognised effect, but it is little studied and, above all, little or not taken into consideration when these tax models are created.

That is to say, sugar-sweetened drinks, being cheaper and very accessible, are preferably consumed by people with less food literacy and, in general, lower financial resources. Thus, the excise duty levied on them requires a more pronounced change in their behaviour, a greater change in their consumption patterns, a greater refinement towards healthier eating habits, whereas, on the other hand, these are people who find it more difficult to opt for substitute goods, such as better quality drinks, which are usually more expensive.

For this very reason, some authors argue that this type of tax is more geared to preventing obesity than to tackling it. This seems to support the idea that increasing the effectiveness of this type of tax should be combined with complementary public policies on information and food education. Or, alternatively, by granting more favourable tax regimes to healthy foods, such as a reduced or zero rate of VAT - value added tax on some of them. It should be noted that the widespread use of the tax system to meet the most diverse public policy goals is a source of complexity, inefficiency and some fraud, which leads to loss of revenue, removing from tax policy itself the necessary simplicity of management and compliance that it also sorely lacks (Catarino, 2022); (Doucett, 2015); (Goldman et al., 2009).

2. CONCEPT AND SPECIFIC CHARACTERISTICS OF PUBLIC POLICIES IN GENERAL

Portugal created, in 2016, the Excise Duty (ED) on Sugary and Sweetened Beverages (Special Tax on the Consumption of Sweetened and Sweetened Beverages), under the guidance of the WHO and the European Commission, and supported by the high prevalence of overweight and mortality from chronic non-communicable diseases (NCDs) (IAN-AF - National Food and Physical Activity Survey, 2017), within the scope of Integrated Strategy for the Promotion of Healthy Eating (EIPAS). This is an adjustment in the structure of the tax system to accommodate increased functions of this public policy (Atkinson & Stiglitz, 1976).

This tax is levied on the following products are subject to it: (i) beverages intended for human consumption containing sugars and other sweeteners; and (ii) concentrates, intended for the preparation of beverages by retailers or for the final consumer. This public policy also focuses on products used in food production, as they determine not only the safety of food products, but also, their nutritional and dietary value (Kickbusch & Gleicher, 2012, p.13). Food production methods and the factors that influence them are integral to food-related health patterns (Kickbusch & Gleicher, 2012). In recent decades, highly processed and packaged foods have become increasingly available in almost all regions of the world, leading to growing concern about their health implications (Clapp & Scrinis, 2016). Excessive consumption of ultra-processed foods has provided the rise of NCDs (WHO, 2015a).

Food labelling public policies have aimed to promote nutritional information and conscious choices by consumers (Goiana-da-Silva et al., 2019; Clapp & Scrinis, 2016). Nutrition labelling was thus born under policy recommendations to control overconsumption of harmful nutrients such as fats, salt and sugar, and thereby prevent the rise of NCDs (Thow, Jones, Schneider & Labontéet, 2019). Overall,

evidence suggests that labels function as filling an information gap (Hawkes et al., 2015). Nutrition labels have been introduced by public policy over time to influence consumer behaviour, increase nutrient information, and promote conscious and healthy diets (Tierney et al., 2017).

Mandatory nutrition information may be difficult to understand (Hawkes et al., 2015). Although, over time, food producers have promoted more explicit nutritional information, for the act of purchase to be considered conscious, the degree of knowledge about the nutritional information needs to be high (Hawkes et al., 2015).

The above considerations lead to an evolution of public policies related to sugar consumption by focusing on the potential of health education, literacy and health management by citizens. They thus extend to the information that is made available to the population on the recommendations and dangers of sugar consumption. In Portugal, in this context of public intervention, the "Sugar Hidden in Food" campaign in the year 2018 (funded by the DGS - General Directorate of Health and validated by the board of PNPAS - National Programme for the Promotion of Healthy Eating) stands out, which alerted to the dangers of both high sugar consumption and the dangers hidden in food labels.

The portuguese policy of taxing non-alcoholic beverages with added sugar and other sweeteners is a public policy. This can be defined as the "government action or inaction in response to public problems" as defined by Michael Kraft & Scott Furlong (2015), among many other authors. Indeed, in it we can discover several factors that are considered constitutive elements of public policy, namely:

> (i) The presence of institutional actors - the policy was designed by a public entity, even though its development may be carried out by private and third sector entities (Cardoso, 1997); (Subirats et al., 2008). In this case, the policy was not only designed by the Government but also approved by it in the Council of Ministers.

(ii) The clear intention to solve a relevant social, public and general interest problem in the agenda of the political-administrative entities with the purpose of influencing its evolution or achieving its resolution (Subirats et al., 2008). In this case, the problem is the excessive consumption of sugars and the effects on public health.

(iii) The adoption of concrete rational decisions aimed at their execution. This also denotes the adoption and implementation of measures endowed with a certain logical rationality, which implies making choices aimed at a concrete end, where objectives, values, measures, action and resources are perceived, in order to respond to concrete problems of public interest (Subirats et al., 2008), (Alcázar, 2000).

(iv) The purpose of modifying or directing the behaviours or social behaviour of specific groups. One of the most evident purposes of public policies is to change or direct the behaviours of the addressees (v.g. target groups) (Knoepfel et al., 2007), who are usually its beneficiaries. In this case, it is intended, among others, that citizens adopt healthier consumption habits.

(v) Public policies aim to produce impacts and effects on the political and social system, as they are carried out in an open environment where various exchange relationships occur between the political-administrative sphere and society in general, transforming them (Alcázar, 2000); (Albaladejo, 2014); (Bañón & Jiménez, 2008). Healthier people put less burden on public health systems, are happier and live longer and with better quality of life.

Thus, it is clear that the fiscal policy of taxation of non-alcoholic beverages with added sugar and other sweeteners (NAB) is unequivocally a public policy, as it meets all the identifying features or assumptions of public policies in general. Public policies have, from the outset, a considerable transformative value because they generate goods or services of collective interest, enable the dissemination and affirmation of new social values and also aim to change existing behaviours.

Most authors agree that public policies aim to directly and objectively affect the lives of people, conditioning or shaping their behaviour through a change in attitudes towards society and life. This is a change that is intended to be objective, when individual behaviours, actions and, indirectly, people's perception of social reality are taken into account (Albaladejo, 2014).

On the other hand, they also have an impact on the political system, especially because political actors seek to respond to social needs, promoting social cohesion and ensuring the exercise of citizenship rights (Albaladejo, 2014). From this point of view, policies have become one of the most perceptible points of action of the political system and are subject to continuous evaluation (directly and indirectly) in order to produce a degree of confidence in the system (Sáez, 1994); (Soares, 2021). In the research we conducted we started from the empirical evidence that more educated young people have a higher level of health literacy (HL) and are the population group that consumes more sugar.

3. OBJETIVES AND METHOD

Although young people who are more educated have a higher level of HL, they are the population group that consumes the most sugars (Goiana da Silva et al., 2018); (IAN-AF, 2017); (WHO, 2015a). Recognising the impact of this consumption on health and its implications for public policies, the study of Martinho (2022) aimed to: *analyse the influence of public policies on healthy eating (related to sugars consumption) and of health literacy (about sugars) on the health management of young adult university students*.

We started by carrying out a documentary and secondary data research about public policies on healthy eating (PPHE) related to sugar consumption, and on the literacy levels of the portuguese population, by age groups. In a second stage, we applied an online questionnaire

survey to young adults who were attending a university degree in one of the 18 Schools of University of Lisbon (ULisboa). The questionnaire was developed from related instruments used in previous studies (Espanha et al., 2016); (IAN-AF, 2017); (Luís, 2010); (Pais, 2019); (Poínhos *et al.*, 2009); (Tierney, Gallagher, Giotis & Pentieva, 2017), integrating the following groups of questions: screening, characterisation of the respondent; perception on individual respondents' health; individual health, eating behaviour and consumption of sugary foods; PPHE related to sugars consumption and influence on eating habits; and sugars literacy. To relate young people's perceptions of their health to the knowledge about sugars-related PPHE and HL, in particular nutritional literacy (NL), we defined, as a control question: do you consider yourself a healthy person?

Conducted through the *google forms* tool, the link to the questionnaire was disseminated through the media of the student associations. Simultaneously, the "snowball" sampling technique was applied (Coutinho, 2020). This process also involved conducting a comprehension validation pre-test. Between 8th March and 20th April 2021, 202 young people answered the questionnaire. The collected data were imported into the Excel software for database organization and, subsequently, transferred to *SPSS*, version 25.

Continuous variables were represented in the form of mean and standard deviation and nominal variables through their relative and absolute frequency. The normality of the distribution of continuous variables was analysed applying the *Kolmogorov-Smirnov* test. The *Chi-square* test, the *Fisher's Exact* test and the *Mann-Whitney* test were used to establish significant associations between the collected variables and the young people's personal opinion about their own health. Statistical analysis was performed with an alpha (α) significance level set at 0.05. In the results that we present here, the p-value is considered the probability of reaching a test statistic equal to or one more extreme than that observed in a sample, under the null hypothesis. Having been set an α value of 0.05, any p-value below 0.05 makes us reject the null

hypothesis of no significant difference or association and accept the alternative hypothesis of the presence of an effect.

4. PUBLIC POLICIES ON HEALTHY EATING (PPHE) RELATED TO SUGARS CONSUMPTION

In Portugal, the PPHE are grounded on multi-sectoral intervention models, focused both on reinforcing healthy mediterranean food (rich in fruits and vegetables) by reducing the consumption of fats and sugars, and on increasing HL by investing in empowering citizens to make healthy food choices, as the people responsible for managing their health. The development of PPHE related to reducing sugars consumption dates back to the creation of the PNPAS in 2012. As a multidimensional policy, the PNPAS aims to increase knowledge about food consumption, modify the availability of food, inform and empower the act of purchase, identify actions to promote healthy eating and, finally, influence the behaviour of the different professionals in the food sector (DGS, 2012). In articulation with the PNPAS, the EIPAS is framed within the "healthy policies" axis of the National Health Plan 2012-2016. These public policies are aligned with the recommendations of the European Food and Nutrition Action Plan 2015-2020 (WHO, 2015b), seeking to reduce the burden of diet-related non-communicable diseases (NCDs), by applying the "*health in all policies*" approach. This perspective seeks to improve the governance of the food system and the overall dietary quality/nutritional status of the population (McQueen, Wismar, Lin, Jones & David, 2012).

The use of taxes to promote a healthy nutritional behaviour, namely the taxation of foodstuffs with a high amount of sugar, has come to play a leading role in the public policies of European countries (Backholer et al., 2017); (Jensen & Smed, 2018). Unlike other obesity prevention policies (such as restrictions on marketing unhealthy

foodstuffs to children), excise taxes on harmful foods have proved to be the most efficient. In 2015, the WHO, through the publication "*Using price policies to promote healthier diets*", highlighted the need for States to adopt a mechanism to regulate the consumption of foods that are harmful to individual health, implementing taxes on products that contain a large amount of sugar in their nutrition label (WHO, 2015b).

4.1. Young People's Interest in PPHE

Most of the respondents (53,0%; n=107) admitted some interest in PPHE and mentioned that these policies have some importance in managing individual health. The level of interest in PPHE was significantly higher among young people who considered themselves to be healthy compared to young people who did not consider themselves healthy (13,1% vs. 6,1%; p=.022).

4.2. Influence of Excise Duty (ED) on Sugary and Sweetened Beverages on Young People's Health Management

ED on sugary and sweetened beverages had "little" or "no" influence on the eating behaviour of the majority of the youth respondents on all the dimensions presented (Table 1) More than half of the young people affirm that this tax had a null influence on the consumption of sugary drinks (54,5% n=110). Almost half of the sample reported that this tax had an insignificant influence when it comes to more active search for nutrition labels (47% n=95), search for cheaper alternatives (42,6% n=86), and higher water consumption (42,6% n=86).

Some similarities were found between the two groups of young people in all the dimensions demonstrated, namely on the influence of this tax on a more active search for nutrition labels. Both groups claim that this tax represented "no influence" in terms of eating choices (46,4% vs 49% p=.078).

Table 1 – Influence of ED on Sugary and Sweetened Beverages on Youth Feeding Behavior

Variable	Total (n=202)	Do you consider yourself a healthy person?		
		Yes (n=153)	No/I don't know (n=49)	P value
What is the influence of the following determinants on your food choices?				
Decreased consumption of sugary drinks				.003[3]
A lot of influence	11,9 (24)	7,8 (12)	24,5 (12)	
Some influence	12,4 (25)	13,1 (20)	10,2 (5)	
Little influence	21,3 (43)	25,5 (39)	8,2 (4)	
No influence at all	54,5 (110)	53,6 (82)	57,1 (28)	
More Active Searching of Nutrition Labels				.078[4]
A lot of influence	12,9 (26)	9,8 (15)	22,4 (11)	
Some influence	22,8 (46)	24,8 (38)	16,3 (8)	
Little influence	17,3 (35)	19,0 (29)	12,2 (6)	
No influence at all	47,0 (95)	46,4 (71)	49,0 (24)	
Search for healthier alternatives				.333[5]
A lot of influence	21,3 (43)	19,6 (30)	26,5 (13)	
Some influence	19,3 (39)	21,6 (33)	12,2 (6)	
Little influence	17,8 (36)	16,3 (25)	22,4 (11)	
No influence at all	41,6 (84)	42,5 (65)	38,8 (19)	

[3] Chi-square test with Sig < α = 0,05 (p= 0,003)

[4] Chi-square test with Sig < α = 0,05 (p= 0,078)

[5] Chi-square test with Sig < α = 0,05 (p= 0,333)

Variable	Total (n=202)	Do you consider yourself a healthy person?		
		Yes (n=153)	No/I don't know (n=49)	P value
Search for cheaper alternatives				.252[6]
A lot of influence	14,9 (30)	12,4 (19)	22,4 (11)	
Some influence	21,3 (43)	20,9 (32)	22,4 (11)	
Little influence	21,3 (43)	20,9 (32)	22,4 (11)	
No influence at all	42,6 (86)	45,8 (70)	32,7 (16)	
Higher water consumption				.717[7]
A lot of influence	26,7 (54)	25,5 (39)	30,6 (15)	
Some influence	16,3 (33)	15,7 (24)	18,4 (9)	
Little influence	14,4 (29)	15,7 (24)	10,2 (5)	
No influence at all	42,6 (86)	43,1 (66)	40,8 (20)	

Source: Martinho (2022)

According to Goiana-da-Silva et al. (2018), in the following months after the implementation of this tax, there has been a reduction of almost 50% in the consumption of beverages with a higher amount of sugar. However, this variation may have resulted from the reformulation processes of beverages with a higher amount of added sugar, carried out by the food industries when a reduction in the amounts of added sugar in some foodstuffs was verified (Goiana da Silva et al., 2018); (Goiana-da-Silva et al., 2020). There was a decrease in the amounts of added sugar in certain sugary drinks, which led to their inclusion in the group of beverages with a sugar content of less than 80 grams per litre (Goiana-da-Silva et al., 2018).

[6] Chi-square test with Sig < α = 0,05 (p= 0,252)

[7] Chi-square test with Sig < α = 0,05 (p= 0,717)

In formulating food and nutrition fiscal policies, Chriqui et al. (2013) suggest that the characteristics of the tax measure will determine its success, and the way in which it is implemented will influence consumer behaviour. The design of these fiscal instruments in terms of health aims to convert the less healthy option into the less economically attractive option and, in this way, reduce its consumption (Jensen & Smed, 2018). Assuming that the increase in prices is associated with a reduction in consumption, the nature of these measures may reduce the ingestion of nutrients that are harmful to the individual, and, consequently, reduce the risks associated with health problems (Muth, Dietz, Magge & Johnson, 2019).

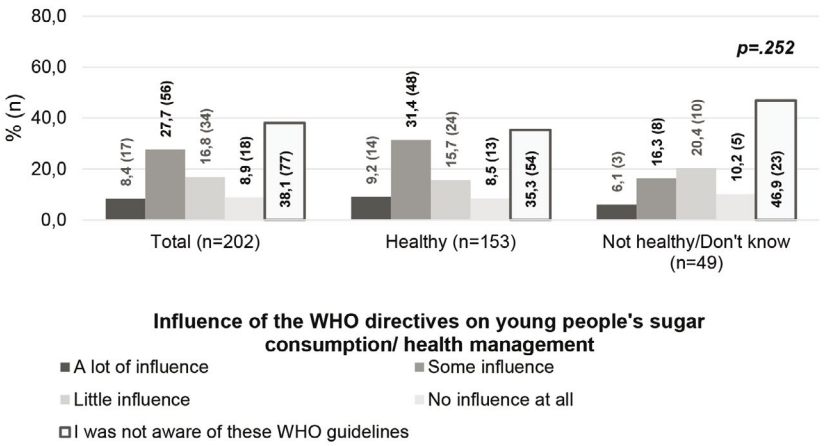
However, scientific evidence supports the importance of clarifying the main purpose of the tax (Backholer et al., 2017). According to Jensen e Smed (2018), the genesis of taxation has been socially understood for fiscal reasons, making health promotion a secondary objective. Fiscal public policies, when observed as a mechanism for promoting health, and not just as a source of tax revenue, are more easily consented to and adopted by the population (Rivard, Smith, McCann & Hyland, 2013). In this way, these fiscal measures can become more effective when accompanied by education strategies and campaigns, promoting HL in terms of the risks associated with excessive consumption of sugar and its long-term harms (Muth et al., 2019); (Stanhope, Schwarz & Havel, 2013).

4.3 Influence of the WHO directives and the "Hidden Sugar" Campaign on Young People's Health Management

In figures 1 and 2 we observe that 38.1% (n=77) of young people did not know the WHO directives on sugar consumption (*Chi-square* test with Sig < α = 0,05; p= 0,252). This number is even higher with regard to young people who do not know about the "Hidden Sugar" Campaign (49% n= 99) (*Chi-square* test with Sig < α = 0,05; p= 0,871) promoted by the National Health Service (NHS). There

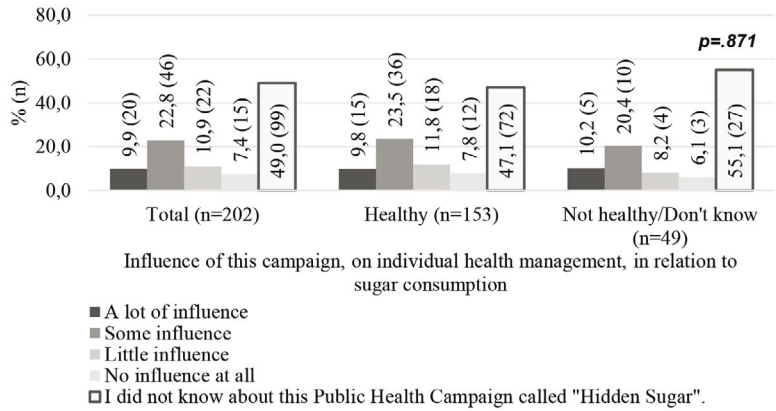
were no significant differences between the students' opinion about the WHO directives and the NHS campaign, and the perception of their own health.

Figure 1 – Influence of the WHO directives on young people's sugar consumption/ health management



Source: Martinho (2022)

Figure 2 – Influence of the "Hidden Sugar" Campaign on sugar consumption by young university students.



Source: Martinho (2022)

Despite considering the PPHE an important instrument for the promotion of healthy behaviours, young people are unaware of the recommendations and policies related to health and food, and this is a determining factor, which conditions their behaviour and management of their health (Tierney et al., 2017).

4.4. Influence of the Nutrition Labels on Young People's Health Management

The use of nutrition labels requires knowledge of the nutritional information, in order to enable consumers to make informed decisions (Clapp & Scrinis, 2016); (Hawkes et al., 2015). Almost half of the young people (47,0%; n=95) stated that they "sometimes" consult the nutrition labels and 26.2% (n=53) "always" consult them. Young people who consider themselves to be healthy had a significantly higher frequency of looking up nutrition labels than that of young people who did not consider themselves to be healthy (p=.032). In concrete terms, 30.1% (n=46) of the young people who consider themselves healthy always consult the nutrition labels, while only less than half of the young people who do not consider themselves to be healthy do so (14,3%; n=7). Out of the total sample, only 43.1% (n=87) stated that the labels have some influence on the consumption of foodstuffs and the majority ((59,4%; n=120) consider that the labels are easy to read. Regarding the influence of labels on individual health management, 44.6% (n=90) stated that they had very much influence and 40.1% (n=81) mentioned that they had some impact. There were no significant differences in young people's opinions on the ease of understanding (p=.779) and impact on health management (p=.176) of labels between young people who consider themselves healthy and unhealthy.

On the influence of the amount of sugar on dietary decisions, we observed that 46.5% (n=94) of the young respondents considered that the quantity of sugar on labels has some influence and

26.7% (n=54) reported a lot of influence. The level of influence was significantly higher in young people who considered themselves healthy compared to those who did not consider themselves healthy (p=.001). Similarly, the first group also reported greater ease in monitoring their total daily sugar intake based on the nutrition labels (p=.005).

The mandatory traffic light system on all packs was suggested by the majority of students (73,8%; n=149) as the main measure in improving the monitoring of total daily sugar intake consistently across groups (p=.526). This tool could influence young people's consumption and transform nutritional decisions into more conscious ones, promoting the effective participation of the individual in the management of their own health.

On the other hand, it was also important to identify that young people do not consider reducing sugar consumption in Portugal to be an urgent action (57,9%; n=117), which leads us to question the involvement of young people at the level of PPHE and the role that they play in the public policy cycle.

5. HEALTH LITERACY (HL) AND NUTRITIONAL LITERACY (NL) ABOUT SUGARS

HL has been highlighted as a way to promote the maintenance and increase of the population's health level (Pedro et al., 2016), thus reflecting the interaction of individuals with health services (Sørensen, 2019). However, HL is constrained by educational level (Zimmerman, Woolf & Haley, 2014), as well as by economic and sociocultural conditions (Crondahl & Karlsson, 2016). In turn, health illiteracy is related to lower participation in health promotion and disease prevention, promoting damaging behaviors such as overuse of health services and inappropriate consumption of medicines (Kickbusch et al., 2013); (Pedro et al., 2016).

In Portugal, HL is a concern in the definition of Public Policies, identified as a mechanism to improve healthcare (Pedro et al., 2016). Recognizing its size and importance, in 2016 it was implemented the *Programa Nacional de Educação para a Saúde, Literacia e Auto-Cuidados*[8], in order to motivate the portuguese population to seek information and make informed decisions about their own health (Pedro et al., 2016).

The public policies for the promotion of HL, focus on the effective participation of the individual in the management of their own health (Oliveira, Nogueira, Maroco, & Diniz, 2015), being directly related to the management of health behaviors and the reduction of risk habits (Leandro et al., 2015). The visibility that HL has been presenting in the public sphere in Portugal, due to its recognition as a pathway to improve the population's well-being, has occurred similarly to a achievement of space throughout the European agenda (Sørensen et al., 2015).

In the study conducted by Espanha et al. (2016) using the Health Literay Survey EU, Portugal showed worrying values in 2015, with 61% of the population with an inappropriate level of HL, compared to 49.2% of the average of the participating European (HLS-UE Consortium, 2012). Portugal was the worst performer in health care literacy, health prevention literacy, and health promotion-related literacy (Espanha et al., 2016). In addition, HL is not uniform along the generational pyramid, as young people show levels closer to sufficient or excellent; and there is a relationship between education and HL, with more educated people showing higher scores (Espanha et al., 2016).

Within the HL, NL emerged from the relationship between knowledge/skills and healthy eating/diet (Chung, 2017), being considered a crucial dimension for health promotion (Carbone & Zoellener, 2012); (Krause, Sommerhalder, Beer-Borst & Abel, 2016);

[8] Through Order No. 3618-A/2016 of February 10 - National Program for Health Education, Literacy and Self-Care.

(Malloy-Weir & Cooper, 2016). For Palumbo (2016), NL is associated with the ability to collect and process relevant nutritional information. In the same perspective, Chung (2017) adds that NL includes the evaluation of information about food choices, the understanding of food labels, and the use of healthy eating methods.

Considering that NL is associated with healthier eating habits and practices, its promotion may increase well-being and is a factor for the prevention of NCDs (Gibbs & Chapman-Novakofski, 2013); (Triches & Giugliani, 2005). In turn, according to TenHave et al. (1997), individuals with NCDs have a lower level of NL than those who do not suffer from these pathologies. In this matter, the lack of legibility of information on nutrition may be seen as one of the factors for the increase of NCDs - chronic non-communicable diseases (Chung, 2017).

Younger age groups are characterized by inadequate eating habits and overconsumption of high-energy foods, preferring quicker and convenience meals and prepackaged foods (Chung, 2017).

In view of these considerations, the public policies for the promotion of HL focused on the effective participation of the individual in the management of their own health (Oliveira, Nogueira, Maroco, & Diniz, 2015) address the relevance of the development of skills and knowledge related to nutritional literacy (Chung, 2017). From the research we conducted, it was possible to characterize the search for nutritional information and healthy behaviors, as well as the level of NL of the young university adults surveyed.

5.1. Search for information on healthy behaviors and healthy eating

The results revealed that young people find it easy to search for information about healthy behaviors, such as healthy eating and proper nutrition. Almost half of the respondents (47.0%; n=95) said it was "easy" to search for information about healthy behaviors and 41.6%

(n=84) also reported it was "very easy" (Table 2). However, it is not guaranteed that these young people use credible sources to extract the information, as only 35.1% (n=71) use the websites promoted by the Ministry of Health and the DGS.

Although most of the young respondents are interested in the PPHE and consider them important in the management of their health, more than half (64.9%) are not aware of them. Only 2.5% (n=5) consulted the PNPAS on a monthly basis and 5.9% (n=12) every 6 months. This frequency of consultation of the PNPAS did not differ according to the individual health perception (p=.315) (Table 2).

Table 2 – Facility and frequency of seeking information related to healthy behaviors by young university students

Variable	Total (n=202)	Do you consider yourself a healthy person?		
		Yes (n=153)	No/I don't know (n=49)	P value
How easy is it to find information about healthy behaviors, such as healthy eating and good nutrition?				<.001[9]
Very easy	41,6 (84)	45,1 (69)	30,6 (15)	
Easy	47,0 (95)	50,3 (77)	36,7 (18)	
Difficult	9,9 (20)	4,6 (7)	26,5 (13)	
Very Difficult	1,5 (3)	0,0 (0)	6,1 (3)	
What sources of information do you consult about healthy behaviors?				
Generalist television programs	7,9 (16)	6,5 (10)	12,2 (6)	.198[10]
Specific TV programs about health	7,9 (16)	9,8 (15)	2,0 (1)	.080[11]

[9] Chi-square test with Sig < α = 0,05 (p= 0,001)

[10] Chi-square test with Sig < α = 0,05 (p= 0,198)

[11] Chi-square test with Sig < α = 0,05 (p= 0,080)

Variable	Total (n=202)	Do you consider yourself a healthy person?		
		Yes (n=153)	No/I don't know (n=49)	P value
Information leaflets available in pharmacies	11,9 (24)	12,4 (19)	10,2 (5)	.677[12]
Books about health	16,3 (33)	15,7 (24)	18,4 (9)	.659[13]
Family/friends	24,8 (50)	25,5 (39)	22,4 (11)	.668[14]
Articles or news about health	32,7 (66)	32,7 (50)	32,7 (16)	.997[15]
Websites about health promoted by state entities (e.g.: Ministry of Health, Directorate-General of Health)	35,1 (71)	37,3 (57)	28,6 (14)	.268[16]
Health professionals	41,6 (84)	44,4 (68)	32,7 (16)	.145[17]
Generalist websites about health	56,4 (114)	56,2 (86)	57,1 (28)	.909[18]
Internet, through social networks and blogs	58,4 (118)	55,6 (85)	67,3 (33)	.145[19]
How often do you consult the information provided by the digital media of the *Programa Nacional para a Promoção da Alimentação Saudável?*				.315[20]
Every month	2,5 (5)	3,3 (5)	0,0 (0)	
Every six months	5,9 (12)	7,2 (11)	2,0 (1)	
Once a year	10,4 (21)	10,5 (16)	10,2 (5)	
Never	16,3 (33)	14,4 (22)	22,4 (11)	
Don't know the program	64,9 (131)	64,7 (99)	65,3 (32)	

Source: Martinho (2022)

[12] Chi-square test with Sig < α = 0,05 (p= 0,677)

[13] Chi-square test with Sig < α = 0,05 (p= 0,659)

[14] Chi-square test with Sig < α = 0,05 (p= 0,668)

[15] Chi-square test with Sig < α = 0,05 (p= 0,997)

[16] Chi-square test with Sig < α = 0,05 (p= 0,268)

[17] Chi-square test with Sig < α = 0,05 (p= 0,145)

[18] Chi-square test with Sig < α = 0,05 (p= 0,909)

[19] Chi-square test with Sig < α = 0,05 (p= 0,145)

[20] Chi-square test with Sig < α = 0,05 (p= 0,315)

5.2. Nutritional Literacy (NL) on sugars

5.2.1. Classification of sugars in food by young university students

We have seen that NL requires the acquisition of proper nutritional knowledge, which leads consumers to make informed decisions when choosing to purchase and consume food. The survey data shows some concern in this respect, with more than half of the young people stating that fruit juice and honey (when present on a nutrition label) are considered natural sugars. Regarding sucrose, the young people who consider themselves healthy are the ones who most often say it is a natural sugar (52.3% n=80 vs 38.8% n=19).

5.2.2. Identification of sugars present in food by young university students

Young university students showed some difficulty in classifying the sugar present in milk. A small part of the group, 21.3%, said that lactose (present in milk) is an added sugar. Although this is not a significant percentage, these values represent a difficulty in identifying sugars in foods.

Overall, more than half of the respondents recognized the existence of sugar in bread (75.7%; n=153), and in natural yogurts (71.3%; n=144) (Table 3). However, it was possible to identify some inconsistencies in the identification of sugars: (i) 40.1% of the students consider that there are sugars present in green leafy vegetables; (ii) 3.5% think that water contains sugar; (iii) only half of the sample (51.5%) refers that lemon has sugar; and finally, (iv) only 46.5% and 35% refer that spaghetti and rice, respectively, contain sugar. The results show no significant differences between the groups of young people who consider themselves healthy and those who do not consider themselves healthy, which shows that there is the same level of HL.

Table 3 – Percentage and absolute frequency of respondents reporting the existence of sugar in selected foods.

Variable, % (n)	Total (n=202)	Do you consider yourself a healthy person?		
		Yes (n=153)	No/ I don't know (n=49)	P value
Meat	16,8 (34)	15,7 (24)	20,4 (10)	.062[21]
Fish	12,9 (26)	11,8 (18)	16,3 (8)	.062[22]
Eggs	19,8 (40)	19,0 (29)	22,4 (11)	.067[23]
Green Leafy vegetables	40,1 (81)	37,9 (58)	46,9 (23)	.482[24]
Water	3,5 (7)	2,6 (4)	6,1 (3)	.347[25]
Bread	75,7 (153)	79,7 (122)	63,3 (31)	**.012**[26]
Olive oil	20,3 (41)	19,0 (29)	24,5 (12)	**<.001**[27]
Lemon	51,5 (104)	51,6 (79)	51,0 (25)	.030[28]
Coffe	21,3 (43)	22,9 (35)	16,3 (8)	.493[29]
Tea	34,2 (69)	34,0 (52)	34,7 (17)	.196[30]
Natura yogurts	71,3 (144)	71,2 (109)	71,4 (35)	.576[31]
Rice	35,6 (72)	34,0 (52)	40,8 (20)	.132[32]
Spaghetti	46,5 (94)	47,7 (73)	42,9 (21)	.347[33]
⋆ The values correspond to the percentage and absolute frequency of respondents who recognize the existence of sugar in a given food.				

Source: Martinho (2022)

[21] Chi-square test with Sig < α = 0,05 (p= 0,062)
[22] Chi-square test with Sig < α = 0,05 (p= 0,062)
[23] Chi-square test with Sig < α = 0,05 (p= 0,067)
[24] Chi-square test with Sig < α = 0,05 (p= 0,482)
[25] Chi-square test with Sig < α = 0,05 (p= 0,347)
[26] Chi-square test with Sig < α = 0,05 (p= 0,012)
[27] Chi-square test with Sig < α = 0,05 (p<0,001)
[28] Chi-square test with Sig < α = 0,05 (p= 0,030)
[29] Chi-square test with Sig < α = 0,05 (p= 0,493)
[30] Chi-square test with Sig < α = 0,05 (p= 0,196)
[31] Chi-square test with Sig < α = 0,05 (p= 0,576)
[32] Chi-square test with Sig < α = 0,05 (p= 0,132)
[33] Chi-square test with Sig < α = 0,05 (p= 0,347)

These results highlight the illiteracy about sugars, reinforcing the importance of the promotion of NL by Public Policies. Without the basic skills to understand nutritional information, individuals tend to adopt risky behaviors in managing their own health (Blitseins & Evens, 2006); (Neuhauser et al., 2007); (Silk et al., 2008); (Watson et al., 2013); (Zoellner et al., 2009). The promotion of NL involves investing in nutritional knowledge and understanding of food labels (Jay et al., 2009), as the first way of communication between consumers and producers (Morais, Stangarlin-Fiori, Bertin & Medeiros, 2020).

The correct interpretation of nutrition labels can act as a decision-making mechanism when choosing foods (Morais et al., 2020), influencing consumer actions about their own health management (Tierney, Gallagher, Giotis & Pentieva, 2017). However, there is insufficient evidence on the effectiveness of labels in promoting healthy eating habits (Gregori et al., 2013). The reasons lay in the difficulty in understanding the information present on food labels and the existence of multiple designations for the same nutrient (Gregori et al., 2013), especially for sugar (Bernstein et al., 2016).

6. HEALTH MANAGEMENT AND CONSUMPTION OF FOOD AND SUGAR-SWEETENED BEVERAGES

The concern with unhealthy eating habits is recognized worldwide, considering that: i) they affect the quality of population lives (Capacci et al., 2012); ii) they are related to the increased prevalence of NCDs; and iii) they are a threat to sustainable development, due to their magnitude and social cost (Goiana-da-Silva, Cruz-eSilva, Allen et al., 2019).

In 2017, the Global Burden of Diseases (GBD) found that 19% of the portuguese population practiced unhealthy eating habits (GBD, 2017). These habits are reflected in a high prevalence of NCDs in the

portuguese population, such as obesity (GBD, 2017); (Graça et al., 2018), a multifactorial chronic disease stemming from the imbalance between calories consumed and calories expended (DGS, 2017). Evidence supports the relationship between added sugar consumption and the development of NCDs, in particular obesity (WHO, 2015a); (Vos et al., 2017) making it a problem for the balance of health services (Egnell et al., 2019).

In Portugal, the data regarding added sugar consumption are worrying (IANAF, 2017). In 2017, about 24.4% of adults, 48.7% of adolescents and 40.70% of children exceeded the daily intake limit for free sugars (IAN-AF, 2017). The WHO recommends that the daily consumption of this type of free sugars should be less than 10% of the total daily energy intake (50g/day) and 5% for health gains (WHO, 2015a). In Portugal, in 2017, the average intake of simple sugars was 84g/day, which represented 18.5% of the total energy value, and this value was higher in children (24.9%) and adolescents (20.2%) (IAN-AF, 2017). In terms of sugary drinks, the values are even more worrying, due to the growing trend in consumption. According to IAN-AF (2017), 18% of the portuguese population ingests one sugary drink per day, and this percentage is higher among children (22%) and adolescents (42%).

In this way, we can observe that portuguese young people are more inclined to consume sugar, justified by the autonomy of food choices that youth introduces (Danelon et al., 2006). In the study, it was possible to know young adults' perceptions of their own health, the influence of food on managing their individual health, the influence of different determinants on food choices, the attention given to the amount of sugar ingested, and the frequency of consumption of sugary drinks.

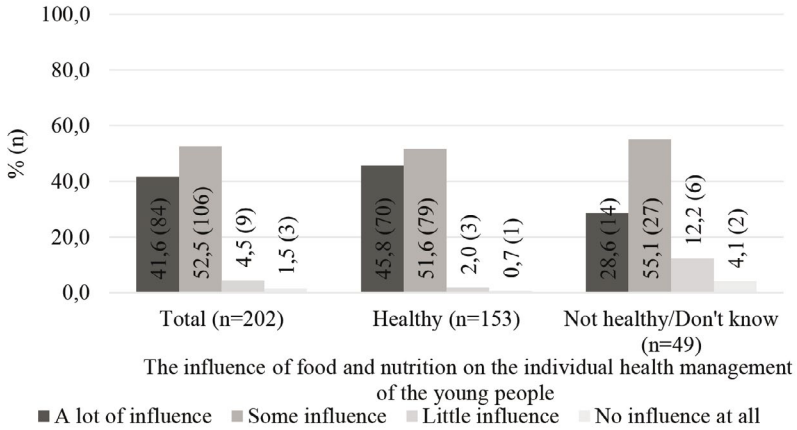
6.1. Young people's perception of the concept of health and their own health

As regards the definition of health, 83.2% (n=168) of the young people considered that health is the "State of complete physical, mental and social well-being", in accordance with the WHO. About the subjective evaluation of health, 37.1% (n=75) of the youth rated their health as "very good", and even 44.9% (n=22) of the youth who do not consider themselves healthy responded that their health is "good". Also regarding health perceptions, young women considered themselves to be healthier than young men (75.2% vs. 24.8% p=.034) and more than half of the group (69.3%; n=140) considered that they practice a healthy diet.

6.2. Influence of food and nutrition on the health management of young people

Decisions related to eating habits are important in the health management process, considering that many of the habits and training that are acquired in this process are portrayed in the future life of individuals (Malta et al., 2014); (Sobal et al., 2006). More than half (52.5%; n=106) of the youth respondents reported that food and nutrition play some influence in managing their individual health and 41.6% (n=84) demonstrated a lot of influence (Figure 4). Young people who consider themselves healthy are the ones who are more aware of the influence of food and nutrition on their individual health management compared to the other group of young people (45.8% vs. 28.6%; p=.002).

Figure 3 – Influence of food and nutrition on individual health management.



Source: Martinho (2022)

In a global view, in the set of determinants that may influence food choices (Poínhos et al., 2009), "taste" (76.7%; n=155) and "quality/fresh" (65.8%; n= 133) are the most influential for the young respondentes. It should be noted that "promotion of healthy eating" (44.4%; n=68) has more influence on young people who consider themselves healthy and that "ease/convenience of preparation" (51%; n= 25), has more influence on those who do not consider themselves healthy. According to WHO (2003), access to quality food (nutritious and healthy) at affordable prices produces a greater difference in eating behaviors than health education, adding that socioeconomic conditions are reflected in eating behavior.

In fact, the health management process involves basic factors such as the characteristics of individuals, their behavior and society, observed as a mechanism linked to dimensions such as culture, social and economic environment (Silva et al., 2015). Globalization and food industrialization increase the consumption of added sugar, by facilitating access to foods that contain excessive amounts of sugar, such as processed foods (Hyseni et al., 2017); (Tryon et al., 2015).

6.3. Young people's sugar consumption

With reference to the amount of sugar that young people consume in their daily lives, only 14.4% reported "always" paying attention to the quantities of this nutrient ingested, and 31.7% (n=64) reporting "sometimes" (Table 4). There were significant differences between the groups. The young people who consider themselves healthy tend to pay more attention to the amount of sugar they eat, than the group of young people who do not consider themselves healthy. However, in the group of youth who consider themselves healthy, only 15.0% (n=23) always pay such attention. It is also observed that the young people who consider themselves unhealthy are the ones who consume the most sugary drinks on a daily basis.

Table 4 - Frequency of attention to the amount of sugar ingested per day and consumption of sugary drinks by young university students.

Variable	Total (n=202)	Do you consider yourself a healthy person?		
		Sim (n=153)	No/I don't know (n=49)	P value
Do you pay attention to the amount of sugar you eat in your daily life?				.012[34]
Always	14,4 (29)	15,0 (23)	12,2 (6)	
Most of the time	28,2 (57)	30,7 (47)	20,4 (10)	
Sometimes	31,7 (64)	33,3 (51)	26,5 (13)	
Rarely	19,3 (39)	17,6 (27)	24,5 (12)	
Never	6,4 (13)	3,3 (5)	16,3 (8)	
How often do you consume sugary drinks?				.026[35]
Everyday	6,9 (14)	3,9 (6)	16,3 (8)	

[34] Chi-square test with Sig < α = 0,05 (p= 0,012)

[35] Chi-square test with Sig < α = 0,05 (p= 0,026)

Variable	Total (n=202)	Do you consider yourself a healthy person?		
		Sim (n=153)	No/I don't know (n=49)	P value
1 to 3 times a week	24,3 (49)	24,8 (38)	22,4 (11)	
1 to 3 times a month	49,0 (99)	51,6 (79)	40,8 (20)	
Never	19,8 (40)	19,6 (30)	20,4 (10)	

Source: Martinho (2022)

The results of our survey are in line with the high consumption of alcoholic beverages by young people identified in the IAN-AF (2017). Almost half of the sample (49.0%; n=99) stated that they consume sugary drinks 1 to 3 times per month, especially those who do not consider themselves healthy (40.8%; n=20), compared to the other group (51.6%; n=79) (p=.026).

Even in lower percentages (compared to the young people who do not consider themselves healthy), the young people who consider themselves healthy, show a high frequency of consumption of sugary drinks. Even though the awareness of food as an SDH stands out, with the majority assigning it influence in the management of individual health, in accordance with the data from the IAN-AF (2017), the young respondents consume sugary foods/drinks frequently, even those who consider themselves healthy, although less frequently than the other group of young people.

Changing this pattern of food choices and increasing levels of HL and NL, is important for public policy, in the way that it could reduce NCDs (Diepeveen et al., 2013). NL assumes a leading role since these diseases, such as obesity, are associated with poor understanding and ability to interpret nutritional recommendations and label reading, (Feliz, Brito & Rodrigues, 2019). Fighting the prevalence of NCDs is only possible through a transversal strengthening at the level of HL (Kickbusch et al., 2013), making the

citizen an agent in the management of their own health (Pedro et al., 2016).

7. FINDINGS

The adoption of a special regime for taxation of sweetened non-alcoholic beverages configures a public policy because it meets the characteristics for its qualification.

Indeed, in this case, the evidence suggests that it is possible to detect the presence of institutional actors as well as the clear intention to solve a social problem, relevant public and of general interest in the agenda of political-administrative entities with the purpose of influencing its evolution or achieving its resolution. We also detect the adoption of concrete decisions, endowed with a certain logical rationality, which implies making choices aimed at a concrete end, where objectives, values, action measures and resources are perceived, with the purpose of responding to the problem concretely posed as well as the purpose of modifying the social behaviours of specific groups.

With regard to the factors related to sugar consumption by young people in Portugal, public policies and NL the data suggest that although most of the young respondents are interested in public policies and consider them to be fundamental in health management, a large part of them seem to be unaware of the PPHE that have been implemented in Portugal.

It also seems possible to conclude that young people do not use the public health information media to obtain more information on healthy eating behaviour. These results allow us to question both the effectiveness of these means of communication of public policies and the causes of this lack of interest.

The data obtained suggests that there is a need for PPHE and ways of encouraging greater knowledge about them, especially among

the younger groups, ensuring that they can be active agents of participation and have greater knowledge to acquire healthier health habits.

With regard to the factors related to sugar consumption by young people in Portugal, public policies and NL the data suggest that although most of the young respondents are interested in public policies and consider them to be fundamental in health management, a large part of them seem to be unaware of the PPHE that have been implemented in Portugal.

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The data obtained suggests that there is a need for PPHE and ways of encouraging greater knowledge about them, especially among the younger groups, ensuring that they can be active agents of participation and have greater knowledge to acquire healthier health habits.

In fact, although it was shown that almost half of the group of young respondents consider nutrition labels to be relevant for the management of their own health, they do not always consult them or do not find them easy to read.

These results may be justified by the nutritional illiteracy of these young people, associated with information which was considered very technical, making it difficult to understand. This is a set of evidence which, in our view, should be taken into account when formulating or changing these public policies, considering that nutritional illiteracy and the difficulty in interpreting the information on labels seem to influence the eating habits and health choices of the young people surveyed.

Indeed, another final consideration lies in the need to invest in public policies for HL, particularly in NL. The adoption of early, appropriate, timely and collective actions at the level of HL and NL could be crucial for the control of NCDs, exhibiting a good cost-benefit ratio (Mikkelsen et al., 2019).

The evidence also suggests that, in the long term, the effects of the acquisition of healthier eating habits may be felt in the health public policy model and in the NHS itself and in the respective funding needs, due to the reduction of resources allocated to NCDs.

Finally, it seems appropriate to point out that the PPHE would benefit from a reflection around the main dimensions associated to risk behaviours since the respondents seem (i) not to recognise that food and nutrition are very relevant in the management of their own health; (ii) do not always pay attention to the amount of sugar they ingest per day; (iii) consume sugary drinks 1 to 3 times a month; (iv) the content of additives, colourings or preservatives in food does not have much influence on their food choices; (v) they do not always make use of nutrition labels; (vi) the amount of sugar expressed on food labels does not have much influence on their food consumption; and finally, (vii) they do not have a significant level of NL about sugar.

This reflection on the PPHE aimed at changing eating behaviours, in particular to reduce the consumption of sugars, allows us to conclude that it is essential that the policy objectives are evaluated. The role of the state in the implementation of PPHE becomes crucial in achieving health gains through the promotion of healthy eating behaviours and NL related to sugar consumption. We also consider it important to encourage the active participation of citizens in all dimensions and stages of the process of formulation and implementation of PPHE, as it is a preponderant factor in the management of individual health, and can contribute to overall gains in the health sector at all levels.

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