LIFESTYLES:
WHAT CAN POLICIES DO AND WHAT CAN PEOPLE DO?

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Unhealthy lifestyles (LSs) (such as smoking, drinking too much alcohol, taking drugs, eating a poor diet, living a sedentary life, having high-risk sex, or sleeping poorly) are all the type of health-related behaviours that we will address in this article. Key determinants of health status —such as medical care, medicine, income, or educational level— are at least partially characterised by being the result of personal choice, and therefore, they are modifiable.

Table 1 shows the evolution of some of these unhealthy habits in Catalonia in the last twenty years based on data from the ESCA (Catalan Health Survey), although this is self-reported data. This shows that the prevalence of tobacco use in both sexes has decreased significantly over the last few years (from 32.1% in 2002 to 25.6% in 2018), although it is higher in younger age groups that have lower education levels. Regarding the prevalence of alcohol risk consumption in the population over the age of 15, there is no clear trend, rather it is irregular and remains stable at around 4%,

although this figure is much higher in men.[1] In terms of physical exercise, the data shows something of a drop between 2010-2014 coinciding with the economic recession, but a significant recovery from and until 2018, reaching 8 out of 10 people aged 15 to 69 who do healthy physical activity. Exceptionally, the highest rates are recorded in men with university level education. Finally, in terms of obesity (BMI$\geq$30 kg / m^2) relative to the population aged 18 to 74, there is a gradual upward trend, which in recent years has been higher among men. According to data from the 2018 ESCA, there is a fairly noticeable social gradient in obesity in Catalonia, in that this condition is higher among those with primary education level (or less) or those who belong to the less favourable social classes.[2] Similar trends can be observed in the case of the Spanish population based on data from the National Health Survey.[3]

The aim of this article is to briefly discuss the main health effects of unhealthy LSs, to outline a few explanations as to why these bad habits are observed in the population and finally, to highlight certain policies aimed at guiding them in the right direction.

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1   High risk consumption in men is considered as an alcohol consumption of $\geq$ 28 units / week, while in the case of women it is 17 units / week; or 5 consecutive alcoholic drinks at least once a month for the past year. One unit (unit of a standard drink) equals 10 grams of pure alcohol.
2   This gradient is the same for related chronic diseases such as diabetes or high blood pressure.
3   Available at: https://www.mscbs.gob.es/estadEstudios/estadisticas/encuestaNacional/encuesta2017.htm.

Table 1. Temporary evolution of unhealthy lifestyles in Catalonia

	2002	2006	2010	2011	2012	2013	2014	2015	2016	2017	2018
Tobacco consumption	32.1%	29.4%	29.4%	29.5%	28.5%	26.5%	25.9%	25.7%	24.7%	24.0%	25.6%
High risk consumption of alcohol	4.5%	4.5%	6.2%	4.7%	3.9%	3.9%	4.5%	3.8%	4.5%	3.4%	4.0%
Healthy physical activity (*)	N/A	N/A	72.2%	71.6%	70.5%	68.6%	67.8%	74.2%	80.9%	80.7%	82.8%
Obesity	N/A	12.7%	11.8%	13.7%	13.8%	14.2%	15.0%	14.7%	14.6%	14.9%	14.9%

Notes: The data refers to the whole population (both sexes). The reported population for tobacco consumption (daily + occasional), alcohol and hours of sleep is over the age of 15; for physical activity, aged 15 to 69, and for obesity, between 18 and 74 years of age. (*) Up until 2015: instrument International Physical Activity Questionnaire short-adapted; from 2016: instrument IPAQ. N/A: data not available.

Source: different surveys from the ESCA (Catalan Health Survey). Department of Health. Generalitat de Catalunya.

Lifestyles and adverse effects

The literature has shown numerous different types of adverse effects of unhealthy LSs on the population. Firstly, bad habits have been proven to be a high risk factor for many chronic diseases —cardiovascular disease (CVD), certain types of cancer, respiratory disease, cirrhosis, type 2 diabetes, high blood pressure, cholesterol, and obesity— which negatively affect people's quality of life and make it essential for those affected and the health authorities to change these habits. The close relationship between very unhealthy yet modifiable LSs and premature death is more than evident (McGinnis and Foege, 1993; McGinnis et al., 2002). Indeed, from a meta-analysis on seventeen countries, Loef and Walach (2012) demonstrate how the combination of several healthy LSs (no smoking, moderate alcohol consumption, regular exercise, eating a healthy diet and within a normal weight range) is associated with a 66% decrease in mortality, compared to individuals who do not follow any of these healthy LSs. Similarly, Li et al. (2018), using three decades of survey data from the United States, prove how adhering to these five healthy habits could prolong life expectancy at age 50 by about 14 years in women, and 12.2 years in men, with respect to those who do not. Secondly, but equally important, are the negative effects of some of these unhealthy LSs on mental health, such as depression, anxiety, schizophrenia, cognitive impairment, irritability, etc. Finally, it is also important to consider the impacts bad health habits, mainly alcoholism and addictive substances, have on issues such as aggressive behaviour, certain criminal activities, sexual abuse, fires, vehicle accidents, in addition to poorer school performance, working conditions or wages (Corman and Mocan, 2015).

Lifestyles: determinants

There are several theories that explain the high presence of unhealthy LSs in the population, although their detrimental effects are widely acknowledged (Cawley and Ruhm, 2011). Firstly, some say that these habits are simply the result of rational and consistent choices, so the consumption of addictive goods (such as alcohol, tobacco, or cocaine), or addiction in general (to food, work, etc.) is the result of fully rational behaviour and maximising stable preferences, while still taking into account that the consumption of these goods will have adverse effects on health and income in the future (Becker and Murphy, 1988). This approach to *rational addiction* has been empirically proven. An example is the work of Becker et al. (1994) on addictive smoking behaviour with aggregated data from the US.[4] In Spain, based on a non-linear "double-hurdle" tobacco consumption model and individual Spanish panel data, Labeaga (1999), takes into account unobserved diversity and the presence of endogenous regressors.

Secondly, other authors believe that the adoption of unhealthy habits is a consequence of an inappropriate "discount" that tends to reward short-term pleasures (Cawley and Ruhm, 2011). In fact, Fuchs (1982) shows the existence of an educational gradient in temporary preference rates, so that the more education, the lower the discount rate or the greater the patience, resulting in more healthy habits and better health. Similarly, Becker and Mulligan (1997) consider schooling to

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4   Specifically, Becker et al. (1994) show that the cross-prices effects are negative and that long-term price elasticity of demand exceeds short-term demand, so lower tobacco prices in the past and future will also tend to cause an increase in current consumption. Therefore past (addictive) consumption tends to reinforce current consumption.

be a resource (such as culture or wealth) to reduce the same rate of temporary preference - an "investment" in greater patience that would make future pleasures less remote. Specifically, in relation to obesity, a positive association has been documented between the temporary preference rate and obesity through a calorie-rich diet and little physical activity (Komlos et al., 2004).[5] However, this approach has been questioned for its insufficient statistical significance or weak correlation, which according to these theories, should be expected, between the differences in discount rates and variations in unhealthy behaviours (smoking, alcohol consumption, and obesity), in prevention (using medication, vaccinations or cancer screenings) or in lifestyle changes over time in each individual (Cutler and Glaeser, 2005; Cutler and Lleras-Muney, 2010).[6]

Thirdly, the adoption of unhealthy LSs can be explained by inherent cognitive limitations in individuals that lead them to be unable to predict all the adverse consequences of associated diseases, and therefore persist in their unhealthy behaviour (Cawley and Ruhm, 2011). Once again, it would appear that cognitive skills are unevenly distributed in the population and an educational gradient is observed. Here, Cutler and Lleras-Muney (2010) estimate that around 30% of the gradients referring to education and unhealthy habits in the United States and the United Kingdom would be explained by variations in cognitive skills influenced by education. Similarly, the *bounded rationality* to which we humans are subjected —challenging the notion of rationality with perfect foresight— could explain certain unhealthy types of behaviour. According to Akerlof (1991), in environments of repeated decision-making over time, limited rationality may mean that the various choices made by individuals end up significantly erroneous. This author cites the phenomenon of procrastination that leads us to postponing tasks until the next day (quitting smoking, exercising, etc.), without anticipating that when it is tomorrow, this decision will be postponed again.

Fourthly, some believe that the acquisition of unhealthy behaviour —which usually begins in adolescence— is due to having been born and raised in an unfavourable social envi-

ronment. According to Marmot (2015), behind this, we necessarily find poverty, social exclusion and disempowerment. The fact that these situations are not evenly distributed in society means that unhealthy LSs are not either. There is a *social gradient* as with health or mortality. In fact, there is much empirical evidence that consistently shows, in different countries and population groups, a higher probability or prevalence in smoking, alcohol, drugs, fast food, sedentary lifestyle, and risky sexual practices in low-income brackets or educational levels (Cutler and Lleras-Muney, 2010). Although in some cases, such as smoking, the socio-economic gradient has tended to grow over time (Costa-Font et al., 2014), and in others, such as obesity, it has tended to diminish (Zhang and Wang, 2004; Ljungvall and Gerdtham, 2010; Costa- Font et al., 2014).

Finally, mention should be made of the explanations focused on social influences, either through social interactions or friendship networks, or through social norms, which are more closely linked to real or perceived cultural traits, and make unhealthy behaviour become more rigid. In fact, the literature on health economics contains several empirical studies that prove the extent of peer effects on starting smoking, alcohol or drug abuse and illiteracy in adolescents (e.g., Gaviria and Raphael, 2001; Lundborg, 2006; Clark and Lohéac, 2007; Harris and González López-Valcárcel, 2008), on harmful eating habits (Fortin and Yazbeck, 2015) or obesity itself in young people (e.g., Trogdon et al., 2008; Mora and Gil, 2013; Gwozdz et al., 2015).[7] Closely connected with these theories are explanations linking unhealthy lifestyles among young people with parental influences or intergenerational transmissions of values and norms.[8] In the case of smoking, Loureiro et al. (2010) find evidence in favour of a same-sex effect, so that fathers who smoke, influence the smoking decisions of their sons, and mothers, of their daughters. Regarding obesity or body mass index (BMI), the literature has also found evidence in favour of this transmission from parents to children (e.g., Classen et al. 2010; Dolton and Xiao, 2017), although the

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5 The authors, however, admit that this alleged association could be skewed by the effect of unobserved confounding variables.
6 Others question this by arguing that if irresponsible growth due to enjoying the present can explain the rise in obesity, how does this explain the decline in smoking? (Marmot, 2015).

7 For evidence of how obesity in the adult population spreads through social relationships (with data from the Framingham Heart Study between 1971-2003), see the seminal work of Christakis and Fowler (2007).
8 Ultimately, many decisions that affect children and young people about how much and what to eat, how much exercise to do, how to spend their free time, etc., are made within the family with the decisive participation of parents.

educational level of the parents and the quality of the upbringing of the children would act as mediating factors. Interestingly, Dolton and Xiao (2017) show that the intergenerational elasticity of BMI is similar between countries with very varied societies and degrees of development, and that it tends to be higher for obese children, while it would be low for the thinnest. These results are important in terms of fostering healthy environments, as bad habits acquired in adolescence tend to go through to adulthood, with the resulting repercussions in terms of health and healthcare costs.

What needs to be done to change unhealthy LSs?

The literature has identified several options for redressing unhealthy LSs. Policies have mostly referred to: (i) taxes on "harmful" products (tobacco, sugar, alcohol, etc.), (ii) incentives (monetary and non-monetary), and (iii) preventive policies (encouraging or dissuasive). All of these have very different consequences and there are always pros and cons when they are applied.

When it comes to taxes, their effectiveness has been more than proven in terms of smoking and alcohol consumption. However, in the case of smoking, once certain figures in smoking rates have been reached, the reductions have not dropped further and appear not to decrease the prevalence in the young population group, nor even rise again, as is currently the case in Catalonia. Here, the impact of preventive policies that prohibit smoking indoors (premises, offices, etc.) had an effect and achieved reductions in consumption. In the case of alcohol, the so-called MUP (minimum unit price) applied in Scotland succeeded in reducing the number of drinks per individual for those who consumed them in excess, but also in the low-income sector. However, the regressive nature of the tax (affecting large consumers in lower income brackets) is a point against the measure. We also find there is an impact on the amount of sugar consumed when sugary drinks are taxed, although reductions in consumption are small in all the different economic sectors where the tax measure has been applied.

Preventive policies also have positive consequences. But the question is whether these are sufficient. Imagine a GP who gives me information about my health and tells me that it would be advisable for me to do some kind of sport. Will this recommendation, even if it is accompanied by blood tests that show signs of future illness, be enough to influence me and make me start running when I get home? Probably not. The health economics literature has shown that monetary incentives to go to the gym

provided by private companies to their staff have been quite effective (Charness and Gneezy, 2009). Some critics claim that some of these impacts diminish in the short term (Frey and Rogers, 2014). So the right question should be: what kind of incentive should be provided, and if monetary, what would the right amount be?

The incentives suggested by the economics literature, according to Gneezy (2019) refer to four types: (1) creating habits, (2) destroying habits, (3) providing first incentives, and (4) removing barriers. For example, in the specific case of eating habits, interventions are more effective when they aim to reduce the consumption of unhealthy products than if they seek to increase healthy ones or simply reduce total intake (Cadario and Chandon, 2019). In any case, the impact of incentives varies depending on the environment in which they are applied (Hummel and Maedche, 2019).

However, besides this classification, it is important to note that incentives can be monetary and non-monetary. People tend to always think of monetary incentives, but there are circumstances in which training / education *per se* is already a measure worth considering. There are whole sections of the population who have never had access to certain training, so providing them with this training could encourage new habits to be formed. A clear example is the labelling of food products on the shelves. There is a diversity of colours and categories. So a large campaign will be needed to provide knowledge before implementing this, as the most favoured classes will probably be the only ones to fully understand the measure.

To conclude, we need to ask ourselves where the solution lies when it comes to modifying unhealthy lifestyles. While much of the responsibility lies with the individuals themselves, we must not forget that many people are deeply attached to their own circumstances, and that bad habits are an inevitable result. Therefore, public policies must act as drivers for the necessary changes. So, the temporary discount (second determinant of unhealthy LSs) and cognitive limitations (third determinant) call for actions to be focused on better educational policies. In our opinion, primary school (secondary school is already too late) is the right place to make future generations aware of the consequences of their actions. An unfavourable socio-economic environment (fourth determinant) calls for measures to fight against poverty and social exclusion while guaranteeing equal educational opportunities for children aged 0-3 from disadvantaged so-

cio-economic backgrounds. Finally, nearby social environments (fifth determinant) call for strengthening the country's fabric or social capital, given its multiplying effects on the proposed interventions. ◼

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