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Individual and Institutional Implications of Building a Smoke-Free Society

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Cigarette smoking is the cause of more premature deaths than traffic accidents, AIDS, other drugs, alcohol, homicide and suicide taken jointly. Eliminating smoking would curb the cost of reduced employee productivity, smokers' treatment and premature mortality. It would seem, therefore, that it is in the interest of the society, employers and addicted individuals to free the world from smoking. At the same time, Poland is among the largest tobacco producers in Europe, and the sale of tobacco products is a source of significant state budget revenues. Health, social and economic losses resulting from the harms of smoking are contrasted with the potential economic and budgetary losses, and the inevitability of the emergence of a shadow economy if tobacco products were to be delegalized. Current social, medical and legal measures aimed at the reduction of tobacco consumption do not have the desired effect and require a radical change in approach. It is not nicotine that kills smokers, but tar created in the process of burning tobacco leaves. Replacing highly harmful tobacco smoking with nicotine delivery products, which are safer by an order of magnitude, is presently the most viable way to improve public health and the quality of life of people addicted to nicotine.

Keywords: smoking, public health, harm reduction, cost of smoking, life expectancy.

Indywidualne oraz instytucjonalne implikacje budowania społeczeństwa wolnego od palenia

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Palenie papierosów jest przyczyną większej liczby przedwczesnych zgonów niż, łącznie licząc, wypadki komunikacyjne, AIDS, pozostałe narkotyki, alkohol, zabójstwa oraz samobójstwa. Wyeliminowanie palenia wiązałoby się z redukcją kosztów zmniejszonej produktywności pracowników, leczeniem palaczy oraz ich przedwczesną umieralnością. Wydawałoby się więc, że w interesie społeczeństwa, pracodawców oraz dotkniętych uzależnieniem jednostek jest całkowite uwolnienie świata od palenia. Równocześnie Polska należy do europejskiej czołówki producentów tytoniu, a sprzedaż wyrobów tytoniowych jest źródłem znaczących dochodów do budżetu państwa. Straty zdrowotne, społeczne i gospodarcze wynikające ze szkodliwości palenia przeciwstawione są potencjalnym stratom gospodarczym, budżetowym i nieuchronności powstania szarej strefy w przypadku delegalizacji produktów tytoniowych. Obecnie stosowane oddziaływania społeczne, medyczne oraz prawne w zakresie redukcji używania tytoniu nie odnoszą

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oczekiwanego skutku i wymagają radykalnej zmiany podejścia. Palaczy nie zabija nikotyna, ale dym powstający w procesie spalania tytoniu. Zastąpienie wysoce szkodliwego palenia tytoniu bezpieczniejszymi o rząd wielkości produktami dostarczającymi nikotynę jest obecnie najbardziej realnym sposobem poprawy zdrowia publicznego i jakości życia osób uzależnionych od nikotyny.

Słowa kluczowe: palenie, zdrowie publiczne, redukcja szkód, koszty palenia, długość życia.

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1. A Smoke-Free World: an Ideal Goal or a Viable Goal?

On May 20, 1984, the US Surgeon General announced a call for a smoke-free society by 2000 (Koop, 2000). In the 1980s, people were already well aware that smoking is the most serious preventable cause of premature mortality in both the US and other countries (U.S. Department of Health and Human Services, 1984). Smoking causes more premature deaths than traffic accidents, HIV/AIDS, other drugs, alcohol, homicide and suicide taken jointly. Therefore, this call attracted a wide range of responses from health care institutions and international public health organisations. In response to the growing interest in smokeless tobacco, such as Scandinavian snus (Lund & Lund, 2014), many countries have banned the production and marketing of such products (currently the ban applies, for example, throughout the European Union with the exception of Sweden), and the aforementioned goal has been reformulated to "a tobacco-free world". The ban is presently contested at the European Court of Justice (Stimson et al., 2018) in the context of restricting consumer access to health and human rights.

It has become clear over the years that the ambitious goal of a "smoke-free world" does not stand a chance of being achieved not only globally, but also in any country. That is why it has been modified, and for over ten years the World Health Organization (World Health Organization [WHO], 2018), the scientific community (Beaglehole, 2015) and politicians (WHO, 2015) have been speaking about the target year 2040 or later – but only as an ideal goal worth pursuing. The only country to have publicly announced a concrete declaration on breaking free from smoking is Finland, which in 2016 declared that it would strive to achieve such a goal by 2030 (Tobacco Act, 2016; Harlay, 2017). The WHO Framework Convention on Tobacco Control (WHO FCTC), adopted in 2003 in Geneva by 168 countries and legally binding in 124 countries (WHO, 2005), became the key achievement. The previous actions effectively helped to reduce the frequency of smoking; however, the reduction of smoking prevalence down to about 15–25% (Figure 1) brought about thanks to the above measures seems to face a difficult barrier that may be impossible to overcome using the current methods of action – the rate of decline in smoking prevalence has significantly slowed

down, even in the countries that, like Poland, are implementing FCTC with great commitment.

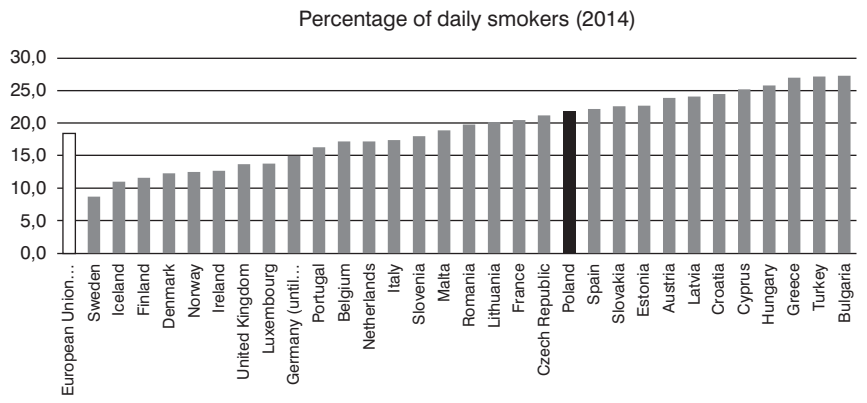

Fig. 1. Percentage of daily smokers in EU countries. Data source: Eurostat, 2016.

The actions taken are aimed at reducing both the supply and demand for tobacco products. Curtailing or prohibiting the advertising of tobacco products or limiting smoking in public places surprise no one, but there are also suggestions that the production and sale of tobacco products should be totally banned (Proctor, 2013; Dyer, 2017), which is quite astonishing given the experience from the alcohol prohibition era and the ongoing "war on drugs" – started for political, not health, reasons – which is ineffective and devastating for the society (Baum, 1997; Baum 2016). Societies and governments have not been able to cope with the arrival of a grey market in trade in prohibited products: illicit production and sale, as well as the related increase in crime and the emergence of organised criminal groups controlling the production and distribution of illegal products. Baum (2016) reports a conversation with Ehrlichman, adviser to President Nixon, in which he explained the previously hidden reasons for commencing the war on drugs, which had nothing to do with public health:

"*The Nixon campaign in 1968, and the Nixon White House after that, had two enemies: the antiwar left and black people. (…) We knew we couldn't make it illegal to be either against the war or black, but by getting the public to associate the hippies with marijuana and blacks with heroin, and then criminalizing both heavily, we could disrupt those communities. We could arrest their leaders, raid their homes, (…)"* – John Ehrlichman for Dan Baum in an interview with Harper's Magazine.

Hence, the picture of a smoke-free world seems to be unrealistic at the moment, but it is an outcome of a narrow perspective that does not take into account technological advances and the increasing availability of

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modern tobacco products with dramatically reduced harmfulness compared to classic cigarettes. In two subsequent editions of its report, Public Health England (McNeill et al., 2015; McNeill et al., 2018) emphasises that a new category of products is available on the market: electronic cigarettes, which are at least 95% safer than burned tobacco. The latest report published in August 2018 by the House of Commons Science and Technology Committee (2018) underlines the usefulness of e-cigarettes as a tool to support smoking cessation and equalise chances in high-risk groups. In the conclusions part of the report (point 7, p. 37), the authors indicate that one of such groups are people with mental disorders, with a percentage of smokers by about 35% higher than in the general population. In response, some British psychiatric hospitals have already consented to an unlimited use of e-cigarettes, and in the report the British MPs suggest that such rules be introduced in all the units of the National Health Service (NHS).

2. Sources and Causes of Smoking

In the literature on smoking addiction, some authors go very far towards depriving addicts of their subjectivity and freedom of decision regarding their tobacco-related behaviours. For example, Joshua (2016, p. 52) quotes McGarity et al. (2006):

"Hence, smoking is not really a matter of free choice. Smoking is a behavioral disease which has been acquired generally at an early age. The belief that smokers are responsible for their own decisions to smoke is still widely held; however, to be responsible for one's own actions, the necessary information has to be available; but tobacco companies (…) manipulate this 'sovereign' consumer decision".

The classical approach to consumer behaviour, assuming that the market functions primarily on the basis of objective consumer decisions, has little predictive power. The last decade has brought about a boom in behavioural economics, which very clearly indicates that few consumer decisions are made with the use of mechanisms of strictly logical thinking and objective information, even if these are freely available to the consumer (Kahneman, 2013).

Addiction to cigarette smoking does not differ significantly from other types of addictions: to alcohol, drugs – they all have one feature in common: a psychoactive substance, which is the main reason for using them.

Some researchers are trying to point to peer pressure and advertising manipulation as the primary causes of nicotine addiction. However, in the second decade of the 21st century, for example computer, Internet and smartphones also grew into addictions. Each time, however, we are dealing with a product that – either through its consumption or through its use – seems to satisfy, or actually satisfies, certain human needs. Bessel van der Kolk (2014), a psychiatrist specialising in the treatment of trauma, indicates

a strong correlation between the occurrence of trauma in childhood and the subsequent addiction to psychoactive substances.

"If you have a comfortable connection with your inner sensations (…) you will feel in charge of your body, your feelings, and your self. However, traumatized people chronically feel unsafe inside their bodies: The past is alive in the form of gnawing interior discomfort. Their bodies are constantly bombarded by visceral warning signs" (Bessel van der Kolk, 2014, p. 96).

"There is a circular relationship between PTSD and substance abuse: While drugs and alcohol may provide temporary relief from trauma symptoms, withdrawing from them increases arousal, thereby intensifying nightmares, flashbacks and irritability" (Bessel van der Kolk, 2014, p. 327).

This holds true also in case of smoking – for example, psychiatric patients are more likely to smoke because nicotine reduces symptoms of a number of disorders, for example schizophrenia.

Addiction should be treated neither as a rational choice nor as a disease, but as an individual's activity aimed at solving existential, emotional and social problems troubling the individual. Addiction is a dramatic and, at the same time, hardly productive attempt of an individual to alleviate suffering, or at least to escape from and forget problems. (Maté, G., 2010).

In the context of the aforementioned report of the Science and Technology Committee (House of Commons Science and Technology Committee, 2018), the question arises as to why e-cigarette use should be allowed in a psychiatric hospital? Due to its "historical" association with a very harmful process of tobacco burning, nicotine has an unjustifiably infamous reputation, supported by inaccurate research and publications in which researchers analysed cigarette smoking and wrote about the effects of tobacco or nicotine. For example, the WHO report "Tobacco and dementia" of 2014 (McKenzie et al., 2014) indicates the effects of cigarette smoking on the aggravation of dementia and Alzheimer's disease, which is substantiated by research findings. At the same time, studies conducted at many scientific centres clearly point to the protective effects of pure nicotine: participants demonstrated improved ability to process information following the administration of nicotine (Newhouse, 2018). It is worth noting that the aforementioned WHO report refers 60 times to the term "tobacco", and only twice (including once in the bibliography) to the term "nicotine".

Pure nicotine, unrelated to about 4,000 substances (mostly poisonous or carcinogenic) found in smoke generated during tobacco combustion, is not a highly toxic substance, as was thought for the last 150 years (Mayer, 2014); what is more – it has a number of positive properties as a neurostimulator (Le Houzec, 2014).

Unfortunately, nicotine – in the form of very harmful cigarettes – is abused by people with symptoms of schizophrenia. One of the hypotheses that explain this phenomenon is the self-healing hypothesis – studies (Jacobsen et al., 2004; Kumari & Postma, 2005) have shown that nicotine is an effective

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means of reducing symptoms of cognitive dysfunctions in schizophrenics. In turn, research on dementia and enhancement of cognitive efficiency shows the effects of nicotine on the improvement of response time, short-term memory and episodic memory (Heishman et al, 2010, Newhouse, 2018).

3. Health Implications

The consequences of smoking for the health of individuals, both smokers and persons exposed to passive smoking, are now well understood and documented. It is known that the eradication of smoking would be equivalent, in terms of the number of lives saved, to the elimination of all types of smoking-unrelated cancers.

In the setting of an exponential rise in the number of smoked cigarettes (Figure 2), publications on this topic began to appear as early as in the 1930s (Goldman, 2002), and in the 1980s, smoking was widely perceived as a medical problem as well as a cause of diseases and increased mortality. Nevertheless, even in 1994, the heads of the largest tobacco companies testified in the US Congress that in their opinion smoking was not dangerous to health (Wigand, 2018). The tactics of lies, though seemingly effective in the short term, soon led to negative consequences for the tobacco industry, which to date have resulted, among other things, in the stigmatisation of scientists who were in any way connected to the industry, and in hampered communication between industry representatives (including scientists employed in research institutes funded by the tobacco industry), based on Article 5.3 of the Tobacco Directive (Hawkins & Holden, 2018).

The health consequences of smoking include mainly cancers, cardiovascular and respiratory diseases, further reducing life expectancy even by more than 10 years (U.S. Department of Health and Human Services, 2014).

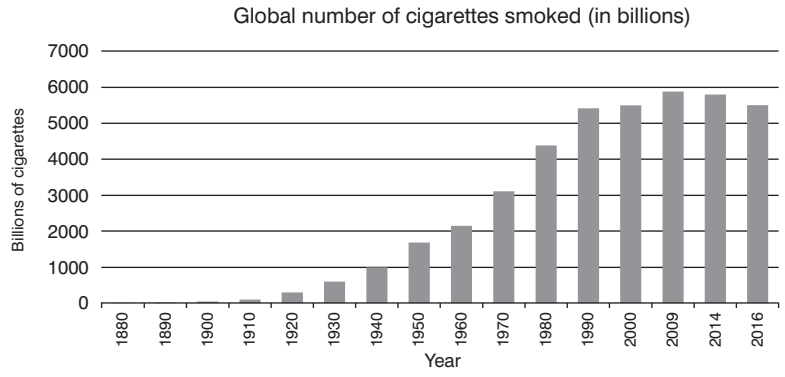

Fig. 2. Annual global cigarette consumption since the invention of a machine for automated production of cigarettes in 1880 till 2016. Data based on The Tobacco Atlas, 2018.

In terms of public health, a cigarette-free society would have the following beneficial consequences: (a) higher average birth weight; (b) lower infant mortality; (c) reduced number of fires caused by smouldering cigarettes (Yau & Marshall, 2014); (d) eliminated illnesses associated with passive inhalation of cigarette smoke; (e) better intellectual development of children; and (f) lower infertility rate (Kovac, Khanna & Lipshultz, 2015).

Warner (1987) also points out that the elimination of smoking would provide, in the longer term, the benefit of redirecting the attention of the health service to other smoking-unrelated diseases – the demand for specialists treating most common diseases caused by smoking would decline significantly.

It is also worth taking into account the potentially negative consequences of a non-smoking society, such as the average increase in weight compared to smokers (Audrain-McGovern & Benowitz, 2011). Another consequence, which seems to ensue directly from the above-described approach to the addiction viewed as a mechanism of escape and solving problems of an individual (Maté, 2010), is a possible substitution of an unavailable psychoactive substance with other stimulants, such as alcohol and other drugs.

The society all over the world is aging. The number of people aged over 60 will have doubled by 2050, and will probably have tripled by 2100 (United Nations, 2017). For an aging society, quitting the lethal smoking habit will intensify the aging trend. The model of the cigarette epidemic developed by Lopez (1994) shows that cigarette smoking brings about a rise in disease incidence and death rates with a long-term delay after the period of smoking (Figure 3).

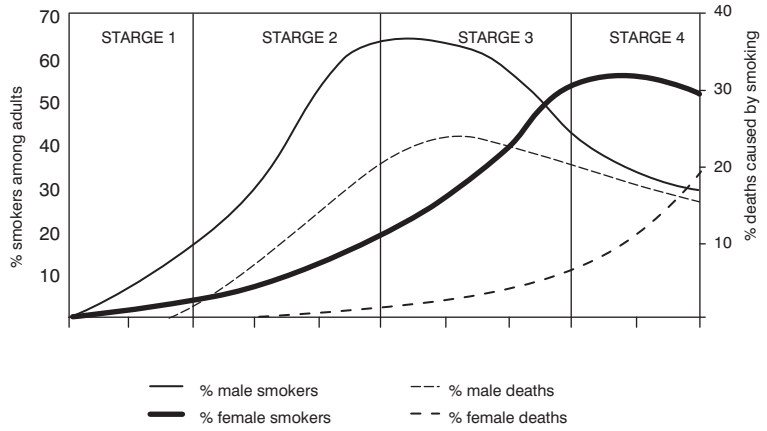

Fig. 3. Delay in male and female deaths due to the cigarette epidemic in the Lopez model. Source: adaptation of the chart from Lopez (1994).

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The intensification of society aging brought about by smoking cessation will, therefore, be spread over a period from a dozen years or so to several decades. In the absence of diseases caused by tar, a change should be expected in the profile of medical visits towards geriatrics and long-term medical care for the eldest (Warner, 1987).

4. Economic Implications

The production, sale and use of tobacco is heavily embedded in the economy and politics of most countries in the world, which is why the discussion on smoking, costs of smoking and costs of smoking cessation must be anchored in economic and geopolitical factors.

The tobacco industry argues that tobacco consumption contributes to higher earnings, employment, and is a source of significant taxes. In Poland, in 2016 the excise duty on tobacco products accounted for 6% of annual state budget revenues, and even for 10% including VAT (Zgliczyński, 2018). Also, it is worth keeping in mind tobacco producers (several thousand farms in Poland), people employed in tobacco harvesting and processing, etc.

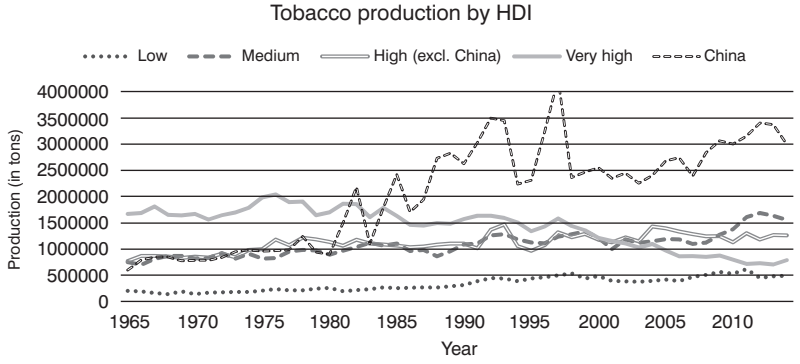

Fig. 4. Volume of tobacco production, in tons, in countries with different HDI levels, in the last 50 years. Data source: The Tobacco Atlas, 2018.

In many countries, especially those with a lower rate of development, tobacco production represents a significant percentage of agricultural production. The world's largest tobacco producer is China. With the exception of countries with the highest human development index (HDI), the volume of tobacco production is constantly growing (Figure 4). However, not everywhere this translates into considerable income for tobacco producers. The problems affecting tobacco growers are similar to the ones encountered in case of other agricultural crops: the main consumer market is a handful of international corporations, which obviously strive to minimise the price

of the purchased product. Data from, for instance, Indonesia indicate that farmers who have ceased to rely on tobacco production generate higher revenues than a comparable group of farmers who continue growing tobacco (Drope & Schluger, 2018).

In 2014, Poland was placed 23rd in the global tobacco production ranking (Figure 5) and currently belongs to the five largest tobacco producers in the European Union, alongside Italy, Greece, Bulgaria and Spain (Krajowy Ośrodek Wsparcia Rolnictwa, 2018).

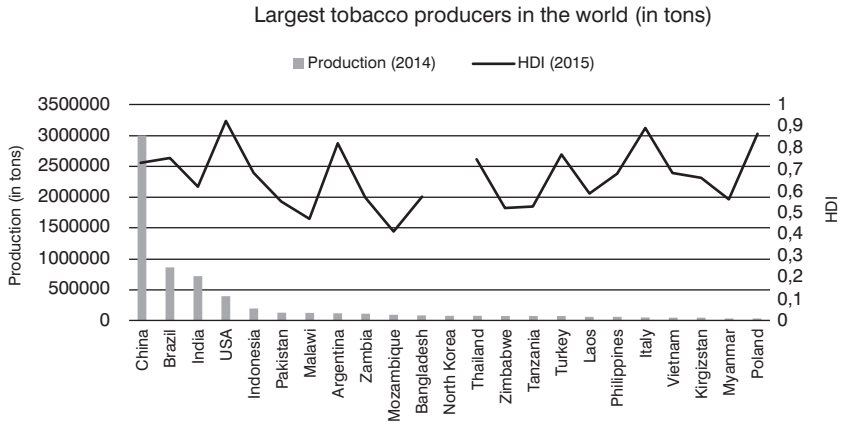

Fig. 5. Largest tobacco producers in the world. Data for 2014. Data source: The Tobacco Atlas, 2018.

Tobacco producers may have concerns about the decline in the prevalence of cigarette smoking and the replacement of cigarettes with products that provide nicotine by heating the liquid with this substance. At present, however, there are no developed methods of producing synthetic nicotine that would be profitable on a large scale. This chemical compound is presently – and most likely will remain in the coming decades – primarily extracted from tobacco.Tobacco consumption in highly developed countries, in particular in Europe, has been declining in the last twenty years (Figure 6).

Experts from international institutions (WHO, American Cancer Society – see Drope & Schluger, 2018) draw attention to the effectiveness of raising taxes on tobacco products as a tool to curb the prevalence of smoking. However, this relationship can only be analysed at the level of covariation, not causality, due to the way data on both phenomena are collected.

Data from Figure 6 illustrate the birth of an advantageous trend in Europe. Although smoking prevalence rates have stalled or have been declining in developed countries for several decades, it is not good news

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at all. As long as the population grows, a constant smoking prevalence rate implies a growth in smokers in absolute numbers.

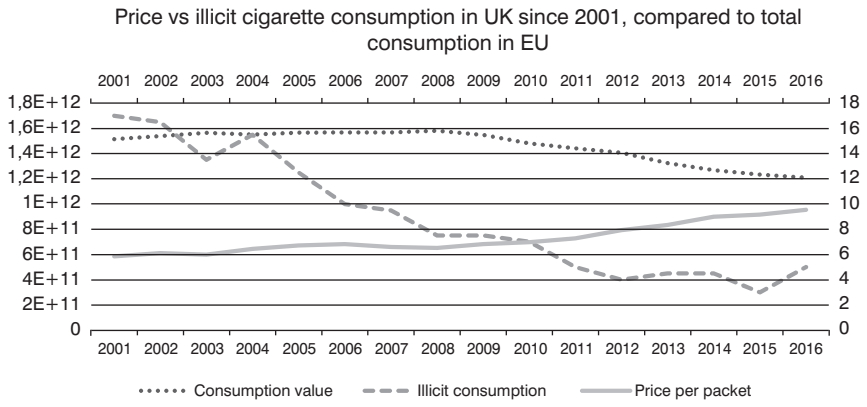

Fig. 6. Volume of illicit cigarette consumption in UK (in billions of pieces) in relation to the price of a packet of cigarettes (in GBP), against the background of decreasing EU consumption of cigarettes. Data source: The Tobacco Atlas, 2018.

Data from Australia (Australian National Drug Strategy Household Survey, 2017) show that people with a low socioeconomic status (SES) on average smoke more than twice as often (23% people) than people with a high status (10% people). At the same time, the effectiveness of higher taxes (and, therefore, a higher cost of cigarettes) is apparent in the group of high-SES people, but higher taxes are not effective among the poorest people (Boland, 2018). In Australia, the tax on tobacco products increased by 25% from 2001 till 2013, which was associated with a decrease in the prevalence of smoking in the high-SES group by 50%, but only by 12.5% in the low-SES group. Research carried out in recent years (Bonevski et al., 2018) systematically confirms that the prevalence of smoking does not change among the poorest people.

The Bureau of Research of the Sejm assessed the economic costs of smoking for Poland in 2017 at 10% of GDP, i.e. about PLN 185.1 billion, taking into account direct costs of public healthcare, costs related to the reduction of employee productivity and economic costs associated with increased mortality.

The World Health Organization estimates that the global cost of smoking-related diseases, associated with medical care and loss of productivity, stands at USD 1 trillion annually (Shapiro, 2018).

On the other hand, forecasts pointing to a long-term rise in public health care expenditures as a result of extending life in a non-smoking society are currently unverifiable because an increase in life expectancy can

also have long-term positive consequences. In 2016, 66 thousand people died in Poland due to smoking. In a non-smoking society, most of these people could be expected to remain in the labour market for many years, contributing to an active GDP growth.

It seems that none of the available analyses allows for making a comprehensive estimate of the balance of financial profits and losses stemming from smoking or from smoking cessation by society. Neither the doomsday scenarios of economic losses painted by the tobacco industry nor the scenarios of profits originating in anti-smoking milieus can serve as a useful tool for decision-makers because they are usually one-dimensional, devoid of historical and experimental basis, and deeply permeated with ideology or ruthless pursuit of profit on both sides of the discourse.

5. The Third Way

Owing to the absence of a common, precise conceptual basis and the historical past, there is no platform for discussion for all stakeholders to participate. Invited to multilateral discussions at public conferences with the participation of scientists, activists and representatives of the tobacco industry, politicians and ministry representatives decline the invitation, using as a pretext Article 5.3 of the Tobacco Products Directive (TPD), which stipulates protection of public interests from industry influences. In turn, some international conferences on smoking and health introduced rules that exclude certain categories of delegates not only by depriving them of the right to vote, but even of the right to passively participate in sessions – again, on the basis of the erroneously interpreted Article 5.3 of the Tobacco Products Directive (World Conference on Tobacco or Health in 2017).

It is difficult to look for compromises and new solutions when there is no full access to study findings, no complete information about the harmfulness of products and no basic dialogue. The aforementioned Article 5.3 not only does not prohibit contacts between public health representatives and the industry, but – in my opinion – it even supports open and transparent contacts between stakeholders, which should replace lobbying and informal pressures exerted by the industry.

There is a desperate need for multilateral activities for a smoke-free world because it seems that the efficiency of current models of action is being pushed to the limit. Although the prospect of a smoke-free world seems remote, recent years have witnessed a number of events that make it considerably more viable, using the methods that differ from those currently promoted by the WHO and tobacco control organisations.

It seems now feasible and realistic to achieve the "smoke-free world" goal, but not necessarily a "tobacco & nicotine-free world". However, given that all the previously presented data clearly indicate that it is not directly nicotine that is a health problem but an extremely harmful way

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in which smokers use tobacco to benefit from nicotine, it is possible to go beyond the previously considered "quit smoking or die" dichotomy towards the tobacco harm reduction "quit or try" approach: replacing highly harmful products with modern ones that are safer by an order of magnitude (90–95%).

In 2003, a Chinese chemist Hon Lik ("Hon Lik", n.d.), himself addicted to smoking, invented and patented an e-cigarette: an electronic device used to evaporate liquid containing nicotine. Since then, the e-cigarette evolved significantly; its operation and impact on humans have also been repeatedly tested, and several reputable institutions have confirmed that it is by about 95% less harmful (McNeill et al., 2018).

At present, without the top-down support of public health institutions, governments and health care, most parts of the world are witnessing a revolution with regards to a wider uptake of attractive, consumer-friendly and safer nicotine delivery devices that are replacing very harmful cigarettes. The availability of e-cigarettes as a cheaper alternative to smoking is a backbone of this revolution, but not the only one. Market and epidemiological data from various parts of the world show that various types of modern reduced-harm nicotine products win consumers' approval. In Japan, following the market launch of "heat-not-burn" products, which are used to heat tobacco in a safer way, below the combustion temperature, within 2 years the prevalence of cigarette smoking dropped by 27% – a level not reported in any other country. In Sweden, where snus – tobacco in small bags, placed between the lip and gum – is popular (and legal), the prevalence of smoking and the mortality caused by smoking are the lowest in Europe. Similar examples can be found in Korea, Iceland or Norway.

6. Conclusion

Irrespective of economic analyses that outline the advantages of complete elimination of tobacco from the market, the ideas that entail blocking the supply of addiction-related products should be considered a dream – prohibition in the early decades of the 20th century in the US and other countries, and the currently unproductive "war on drugs", clearly show how ineffective these solutions are and how many side effects they generate (crime, grey zone), without practically solving anything.

Michael Russell, a British researcher who studied the cigarette addiction, in 1976 stressed that "*people smoke for nicotine, but they die from tar*". The priority should therefore be, first of all, to eliminate harmful tar substances, since it is currently not possible to completely put an end to nicotine addiction in society. For people who cannot quit smoking, modern nicotine products open a path of change that is safer by an order of magnitude. This particular group can only gain from the change, and indirectly their families, employers, and public health services.

As long as people struggle with existential and emotional problems, the world will have to deal with addictions (Maté, 2010). Although the achievement of a nicotine-free society over the coming decades is unlikely, the experience of Scandinavian countries and Japan shows that it is realistic to create a smoke-free society, without negative health and economic implications.

References

Audrain-McGovern, J., & Benowitz, N. L. (2011). Cigarette smoking, nicotine, and body weight. *Clinical Pharmacology & Therapeutics*, *90*(1), 164–168. https://doi.org/10.1038/clpt.2011.105.

Australian Institute of Health and Welfare. (2017). *National drug strategy household survey 2016 detailed findings*. Canberra, ACT: Australian Institute of Health and Welfare. Retrieved from https://www.aihw.gov.au/reports/illicit-use-of-drugs/ndshs-2016-detailed.

Baum, D. (1997). *Smoke and mirrors: The war on drugs and the politics of failure* (1st Back Bay pbk. ed.). Boston, MA: Back Bay Books.

Baum, D. (2016, April). *Legalize it all: How to win the war on drugs*. Retrieved on August 20, 2018, from https://harpers.org/archive/2016/04/legalize-it-all/.

Beaglehole, R., Bonita, R., Yach, D., Mackay, J., & Reddy, K.S. (2015). A tobacco-free world: A call to action to phase out the sale of tobacco products by 2040. *The Lancet*, *385*(9972), 1011–1018. https://doi.org/10.1016/S0140-6736(15)60133-7.

Boland, V. (2018, June). *"I'm not strong enough; I'm not good enough; I can't do this, I'm failing": Barriers to cessation among disadvantaged smokers and their experiences with accessing treatment and the role for technology based quit support*. Presented at the 5th Global Forum on Nicotine, Warszawa, Poland. Retrieved from https://gfn.net.co/downloads/2018/PRESENTATIONS/FRIDAY/Parallel5/VeronicaBoland.pdf.

Bonevski, B., Twyman, L., Paul, C., D'Este, C., West, R., Siahpush, M., … Palazzi, K. (2018). Smoking cessation intervention delivered by social service organisations for a diverse population of Australian disadvantaged smokers: A pragmatic randomised controlled trial. *Preventive Medicine*, *112*, 38–44. https://doi.org/10.1016/j.ypmed.2018.04.005.

Drope, J., Schluger, N., & Cahn, Z. (2018). *The tobacco atlas* (6th ed.). Atlanta, GA: American Cancer Society.

Dyer, O. (2017). Russia plans to ban tobacco sales to all citizens born after 2014. *BMJ*, j252. https://doi.org/10.1136/bmj.j252.

Goldman, I.L. (2002). Smoking and longevity. *Genetics*, *162*(3), 997–1001.

Harlay, J. (2017, January 25). *Finland: A tobacco-free future in 2030*. Retrieved on June 18, 2018, from https://www.vapingpost.com/2017/01/25/finland-a-tobacco-free-future-in-2030/.

Hawkins, B., & Holden, C. (2018). European Union implementation of article 5.3 of the Framework Convention on Tobacco Control. *Globalization and Health*, *14*(1). https://doi.org/10.1186/s12992-018-0386-1.

Heishman, S.J., Kleykamp, B.A., & Singleton, E.G. (2010). Meta-analysis of the acute effects of nicotine and smoking on human performance. *Psychopharmacology*, *210*(4), 453–469. https://doi.org/10.1007/s00213-010-1848-1.

Hon Lik. (n.d.). In *Wikipedia*. Retrieved on May 19, 2018, from https://en.wikipedia.org/w/index.php?title=Hon_Lik&oldid=841955941.

House of Commons Science and Technology Committee. (2018, August 16). *E-cigarettes: Seventh report of session 2017–19*. Retrieved from https://publications.parliament.uk/pa/cm201719/cmselect/cmsctech/505/505.pdf.

 DOI 10.7172/1644-9584.78.5

Jacobsen, L.K., D'Souza, D.C., Mencl, W.E., Pugh, K.R., Skudlarski, P., & Krystal, J.H. (2004). Nicotine effects on brain function and functional connectivity in schizophrenia. *Biological Psychiatry*, *55*(8), 850–858. https://doi.org/10.1016/j.biopsych.2003.12.023.

Joshua, J. (2016). *The economics of addictive behaviours volume I*. New York, NY: Springer Berlin Heidelberg.

Kahneman, D. (2013). *Thinking, fast and slow* (1st pbk. ed.). New York, NY: Farrar, Straus and Giroux.

Koop, C.E. (2000, May). *A smoke-free society by the year 2000*. Presented at Julia M. Jones Lecture at Annual Meeting of American Lung Association, Miami, FL.

Kovac, J.R., Khanna, A., & Lipshultz, L.I. (2015). The effects of cigarette smoking on male fertility. *Postgraduate Medicine*, *127*(3), 338–341. https://doi.org/10.1080/00325481.2015.1015928.

Krajowy Ośrodek Wsparcia Rolnictwa. (2018). Rynek tytoniu w Polsce – Monitorowanie i nadzór. Retrieved from http://www.kowr.gov.pl/uploads/pliki/TYTON/Broszura.pdf.

Kumari, V., & Postma, P. (2005). Nicotine use in schizophrenia: The self medication hypotheses. *Neuroscience & Biobehavioral Reviews*, *29*(6), 1021–1034. https://doi.org/10.1016/j.neubiorev.2005.02.006.

Le Houezec, J. (2014, January 12). Positive effects of nicotine [Blog post]. Retrieved from https://nicotinepolicy.net/blogs/guest-blogs/32-jacques-le-houezec/88-the-positive-effects-of-nicotine.

Lopez, A.D., Collishaw, N.E., & Piha, T. (1994). A descriptive model of the cigarette epidemic in developed countries. *Tobacco Control*, *3*(3), 242–247. https://doi.org/10.1136/tc.3.3.242.

Lund, I., & Lund, K. (2014). How has the availability of snus influenced cigarette smoking in Norway? *International Journal of Environmental Research and Public Health*, *11*(11), 11705–11717. https://doi.org/10.3390/ijerph111111705.

Maté, G. (2010). *In the realm of hungry ghosts: Close encounters with addiction*. Berkeley, CA: North Atlantic Books.

Mayer, B. (2014). How much nicotine kills a human? Tracing back the generally accepted lethal dose to dubious self-experiments in the nineteenth century. *Archives of Toxicology*, *88*(1), 5–7. https://doi.org/10.1007/s00204-013-1127-0.

McGarity, T., Kysar, D., & Sokol, K. (2006). *The truth about torts: Lawyers, guns, and money*. Center for Progressive Reform. Retrieved from http://www.progressivereform.org/articles/Truth_About_Torts_Immunity.pdf.

McKenzie, J., Bhatti, L., & Tursan d'Espaignet, E. (2014). *WHO tobacco knowledge summaries: Tobacco and dementia*. WHO, Geneva.

McNeill, A., Brose, L., Calder, R., & Hitchman, S.C. (2015). *E-cigarettes: An evidence update*. A report commissioned by Public Health England. Public Health England. Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/733022/Ecigarettes_an_evidence_update_A_report_commissioned_by_Public_Health_England_FINAL.pdf.

McNeill, A., Brose, L., Calder, R., Bauld, L., & Robson, D. (2018). *Evidence review of e-cigarettes and heated tobacco products 2018*. A report commissioned by Public Health England. London: Public Health England. Retrieved from https://www.gov.uk/government/publications/e-cigarettes-and-heated-tobacco-products-evidence-review/evidence-review-of-e-cigarettes-and-heated-tobacco-products-2018-executive-summary.

Newhouse, P. (2018, June). *Nicotine therapeutics: Therapeutic aspects of nicotinic stimulation for brain disorders*. Presented at the 5th Global Forum on Nicotine, Warszawa, Poland. Retrieved from https://gfn.net.co/downloads/2018/PRESENTATIONS/SATURDAY/Plenary%202/PaulNewhouse.pdf.

Proctor, R.N. (2013). Why ban the sale of cigarettes? The case for abolition. *Tobacco Control*, *22*(suppl 1), i27. https://doi.org/10.1136/tobaccocontrol-2012-050811.

Shapiro, H. (2018, October). *No fire, no smoke: The global state of tobacco harm reduction 2018*. London: Knowledge-Action-Change.

Sobczak, A., & Wydawnictwo Medyczne Borgis. (2017). *1500 razy mniej: papierosy elektroniczne w świetle badań naukowych*. Warszawa: Wydawnictwo Borgis.

Stimson, G., Jakes, S., Harding, J., Morrison, A., Dorn, D., Costall, P., … Diamon, P. (2018). *Challenging a bad tobacco law: The legal challenge against the EU ban on snus*. Presented at the 5th Global Forum on Nicotine, Warszawa, Poland. Retrieved from https://gfn.net.co/posters-2018/565-challenging-a-bad-tobacco-law-the-legal-challenge-against-the-eu-ban-on-snus.

Tobacco act. (2016). Retrieved from https://savutonsuomi.fi/en/towards-tobacco-free-finland/tobacco-act/.

Tobacco company CEOs testify before Congress. (1994). Retrieved from https://www.youtube.com/watch?v=e_ZDQKq2F08.

United Nations, Department of Economic and Social Affairs, Population Division. (2017). *World population prospects: The 2017 revision, key findings and advance tables* (Working Paper No. ESA/P/WP/248).

U.S. Department of Health and Human Services, Public Health Service, Office of the Surgeon General. (2014). *The health consequences of smoking—50 years of progress: A report of the Surgeon General*. Retrieved from https://www.surgeongeneral.gov/library/reports/50-years-of-progress/full-report.pdf.

U.S. Department of Health and Human Services, Public Health Service, Office on Smoking and Health. (1984). *The health consequences of smoking: Chronic obstructive lung disease. A report of the Surgeon General*. Retrieved from http://profiles.nlm.nih.gov/ps/access/NNBCCS.pdf.

Van der Kolk, B.A. (2014). *The body keeps the score: Brain, mind, and body in the healing of trauma*. New York, NY: Viking.

Warner, K. (1987). Health and economic implications of a tobacco-free society. *Journal of the American Medical Association*, *258*, 2080–2086.

What will it take to create a tobacco-free world? (2015). *The Lancet*, *385*(9972), 915. https://doi.org/10.1016/S0140-6736(15)60512-8.

Wigand, J. (n.d.). *Testimony of the 7 CEOs of Big Tobacco*. Retrieved on August 20, 2018, from http://www.jeffreywigand.com/7ceos.php.

World Health Organization. (2005). *WHO framework convention on tobacco control.* Geneva: World Health Organization.

World Health Organization. (2018). *Cape Town declaration on human rights and a tobacco-free world*. Declaration proposed at the 17th World Conference on Tobacco or Health, Cape Town, South Africa. Retrieved from https://ash.org/declaration/.

Yau, R.K., & Marshall, S.W. (2014). Association between fire-safe cigarette legislation and residential fire deaths in the United States. *Injury Epidemiology*, *1*(1), 10. https://doi.org/10.1186/2197-1714-1-10.

Zgliczyński, W. (2017, November). *Palenie tytoniu w Polsce*. Biuro Analiz Sejmowych.

 DOI 10.7172/1644-9584.78.5