Economic cost of cigarette smoking in Bosnia and Herzegovina

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ABSTRACT

Background Cigarette use is one of the major risk factors for non-communicable diseases in Bosnia and Herzegovina, with 41.1% of adults being current smokers in 2019 and almost half of current smokers using more than 20 cigarettes per day.

Methods This study applies the prevalence-based, cost-of-illness approach to estimate the annual economic cost of smoking in Bosnia and Herzegovina in 2019.

Results The study estimates that cigarette use by adults in Bosnia and Herzegovina caused between 24.4% and 42.8% of all deaths in 2019 and a total economic cost of between €367.5 and €635.1 million (2.0%–3.5% of gross domestic product). The direct costs represent the largest share of the total cost (between 1.0% and 1.7% of gross domestic product).

Conclusion Cigarette use imposes a significant health and economic burden in the society of Bosnia and Herzegovina. Various tobacco control measures can be implemented to prevent and reduce tobacco consumption and the negative health consequences of tobacco use. Numerous studies have shown taxes on tobacco products are very effective in reducing tobacco use, especially among certain demographic groups, such as youth and low-income individuals. Smoke-free laws have also shown benefits. Other policy measures that can be implemented include restrictions to advertising, limitations on who can purchase tobacco products, how and where they can be purchased, etc. In addition, governments could also implement various education programmes on the negative health consequences of smoking. The results of this study provide information that calls for prompt and strengthened implementation of tobacco control measures to reduce cigarette consumption in the country and improve the health outcomes and productivity of its inhabitants.

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Tobacco use is one of the major risk factors for non-communicable diseases.
⇒ Various tobacco control measures, including significant increase in prices through higher taxes, smoke-free laws, restrictions to advertising and access to tobacco products, cessation support programmes, etc, can reduce consumption and the negative impact on one's health and on the economy.

WHAT THIS STUDY ADDS

⇒ This is the first study to estimate the economic cost of tobacco use in Bosnia and Herzegovina.
⇒ The results of this study confirm that the economic costs of tobacco use can be substantial and represent a huge burden on the economy.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ The results of this study provide strong support for an effective tobacco control policy in Bosnia and Herzegovina to reduce tobacco use and improve the health and living standards of its inhabitants.

INTRODUCTION

Tobacco use is one of the leading risk factors for non-communicable diseases and premature deaths. Despite a global decline in smoking prevalence (from 32.7% in 2000 to 22.3% in 2020), it is expected that the number of attributed premature deaths will keep increasing since tobacco-related diseases slowly kill both tobacco users and those exposed to secondhand smoke.[1]

Upper-middle-income countries, including Bosnia and Herzegovina (BiH), experienced the lowest decrease in smoking prevalence in the last two decades compared with other country-income groups. These trends are not encouraging and indicate that tobacco use will continue to be one of the leading causes of deaths in this group of countries. Additionally, tobacco use places a heavy economic burden on societies throughout the world. The amount of healthcare expenditure due to smoking-attributable diseases was estimated at 5.7% of the global health expenditure in 2012, while the total economic cost of tobacco use (direct healthcare, indirect morbidity and mortality costs) was around 1.8% of the world's annual gross domestic product (GDP). Almost 40% of this cost occurred in low-income and middle-income countries.[2]

Health insurance in BiH is funded by state budget and struggles with insufficient financing to cover the relatively high amount of liabilities. A survey of adults conducted in BiH in 2019 showed that 41.1% of adults were current smokers, with almost half smoking more than 20 cigarettes per day.[3] Among the six countries of the Southeastern European region, smoking prevalence is lowest in Albania (24.7%) and highest in North Macedonia (48.9%). At the same time, smoking intensity is between 14.5 (BiH) and 20.8 cigarettes per day (Kosovo).[4] Although smoking intensity in BiH is very high, it is the lowest among the six Southeastern European countries; however, its smoking prevalence is the second largest in the region. With such high smoking prevalence and intensity, smoking-attributable healthcare costs represent a

substantial burden on the government and their reduction would reduce the stress of financing the health system.

To the best of our knowledge, this is the first comprehensive study estimating the economic smoking-attributable costs in BiH. A recent study in BiH has shown that increasing tobacco tax would reduce tobacco consumption.[5] This would, in turn, reduce the related economic costs of tobacco use. This study does not estimate the economic cost of tobacco use in BiH just for the sake of measuring the current economic burden, but also to emphasise that stronger tobacco control measures should be implemented by the government to reduce these costs.

EMPIRICAL APPROACH
As all current tobacco users in BiH are cigarette smokers and are only occasionally using other tobacco products,[3] this study focuses on the economic cost of cigarette smoking. We apply the prevalence-based, cost-of-illness approach,[6] which consists of estimating the annual economic cost of illnesses and deaths attributed to smoking, regardless of when the illness first occurred. We follow the top-down approach, also known as the epidemiological approach, which measures the proportion of burden of disease or death due to an exposure to risk factors—in this case cigarette smoking.

The cost estimate includes the direct costs (ie, costs of treating tobacco-related illnesses) and the indirect costs (ie, loss of productivity and earnings due to morbidity and premature mortality). The direct costs consist of direct medical costs and direct non-medical costs, with direct medical costs including three main components, namely the costs of the health treatment of illnesses, the costs of dispensing and shaking drugs (CDSD) and the out-of-pocket (OOP) costs. The health treatment of illnesses and the CDSD are financed by the Health Insurance Fund (HIF). Direct non-medical costs include caregivers and transportation costs (CTC). We estimate the smoking-attributed costs both for all illnesses and for selected smoking-related illnesses only.

The first step of this approach requires calculation of the smoking-attributable fraction (SAF), which is the fraction of the burden of diseases and deaths attributed to smoking. SAF is calculated using the formula for all causes of death by gender and age group, and for each smoking-attributable disease i by gender and age group[6]:

$$SAF_i = SAF_{ic} + SAF_{if}$$

$$SAF_{ic} = \frac{P_c \times (RR_{ic} - 1)}{P_c \times (RR_{ic} - 1) + P_f \times (RR_{if} - 1) + 1} \times 100\%$$

$$SAF_{if} = \frac{P_f \times (RR_{if} - 1)}{P_c \times (RR_{ic} - 1) + P_f \times (RR_{if} - 1) + 1} \times 100\%$$

where SAF_i is the smoking-attributable fraction for current and former smokers, SAF_{ic} is the smoking-attributable fraction for current smokers and SAF_{if} is the smoking-attributable fraction for former smokers. P_c and P_f represent the prevalence of current smokers and former smokers, respectively, while P_n is the percentage of never smokers $(1 - P_e - P_f)$. RR_{ic} and RR_{if} are the relative risk estimates of developing a particular tobacco-related disease i (such as lung cancer) or occurrence of an event i (such as incurring disability days) for current smokers compared with never smokers and for former smokers compared with never smokers, respectively.

So the two fundamental elements of SAF are the smoking prevalence in the target population and the estimate of the relative risk (RR), where RR represents the probability of morbidity or mortality among ever smokers to the probability of the same outcome among never smokers. Ideally, the morbidity RR would be used to estimate the economic cost.[6] However, since the estimates of the morbidity RR are very limited and not available for countries similar to BiH, we apply the mortality RR, which may underestimate the total cost.[7] The total cost attributed to smoking is the product of the particular SAF and the total direct/indirect cost by specific disease, age and gender. To calculate the economic costs of smoking by disease, the costs are divided into the following diseases: (1) lung cancer, (2) other cancers, (3) coronary heart disease, (4) other heart disease, (5) cerebrovascular disease, (6) other vascular disease, (7) diabetes mellitus, (8) influenza, pneumonia and tuberculosis, and (9) chronic obstructive pulmonary disease (COPD) (online supplemental table 1).

DATA
Smoking prevalence and RR
Data on smoking prevalence by age and gender are adopted from a survey of smokers conducted in BiH in 2019.[3] While some studies[8] use lagged prevalence data to account for about a decade-long delay between smoking initiation and the incidence of tobacco-attributed disease, the most recent reliable estimate of smoking prevalence among adults by age and gender in BiH is available for 2019. Considering that the estimated smoking prevalence in BiH in 2010[9] was 40.3% (49.3% among men and 31.2% among women), which is very similar to the 2019 estimate of 41.1% (48.2% for men and 34.0% for women), we have confidence in using the 2019 data in this study.

As neither the morbidity nor the mortality RR estimate for BiH is available, we adopt the RR estimate from other countries. Our review of literature on the economic cost of tobacco use has identified that in cases when a local RR estimate is not available, studies commonly use the US RR estimate, which is available for both current and former smokers, for all causes of death combined and by selected smoking-attributable diseases and by age group and gender.[10] In the absence of country-related RR estimates, some studies use the US RR, like Germany,[11] South Africa[12] and Italy.[13] However, we believe that the US RR may not be the best option for BiH due to differences in the level of income, lifestyle and health awareness, quality of healthcare, etc.

Table 1 Smoking prevalence by entity, smoking status, gender and age group, 2019

	Current smokers (%)					Former smokers* (%)
	35+	35–54	55–64	65–74	75+	35+
BiH	43.3	52.3	39.0	35.2	10.4	11.5
Male	53.3	61.0	48.3	53.1	14.5	13.1
Female	33.3	43.9	31.0	13.9	4.4	9.8
Entity: RS						
Male	60.1	69.8	53.9	59.8	25.3	8.0
Female	27.2	37.7	33.0	24.8*†	19.7	18.1
Entity: FBiH and BD						
Male	49.1	56.5	45.2	47.3	5.5	16.2
Female	36.2	46.9	30.2	24.8	5.5†‡	5.8

Source: Mićić et al (2020).[32]
*Sample size for former smokers was too small to estimate prevalence by age group.
†Sample size too small so the same estimate assumed as in FBiH.
‡Sample size too small so the same estimate assumed as for male adults aged 75+.
BD, Brcko District; BiH, Bosnia and Herzegovina; FBiH, Federation of BiH; RS, Republic of Srpska.

Table 2 Estimated SAF for all diseases, by entity and based on assumed RR

	Entity: RS					Entity: FBiH and BD				
	35+	35–54	55–64	65–74	75+	35+	35–54	55–64	65–74	75+
Male										
Belarus RR	0.302	0.364	0.306	0.329	0.176	0.248	0.317	0.270	0.279	0.053
US RR	0.487	0.526	0.524	0.556	0.279	0.431	0.482	0.491	0.512	0.125
Female										
Belarus RR	0.159	0.208	0.175	0.137	0.112	0.154	0.235	0.162	0.137	0.034
US RR	0.316	0.252	0.375	0.359	0.269	0.273	0.277	0.339	0.331	0.095

Source: Authors' calculations.

BD, Brcko District; FBiH, Federation of Bosnia and Herzegovina; RR, relative risk; RS, Republic of Srpska; SAF, smoking-attributable fraction.

It is rather preferable to choose an estimate from a country which is the most similar. We consider several factors in choosing the RR from the most comparable country and study, such as year of cost estimation, geographical distance from BiH, methodology used for cost estimation, similarity in income and lifestyle, quality of institutions, and quality of healthcare. Following these criteria, we adopted the RR estimates from Belarus,[14] which are provided for current smokers for all causes of death by gender. The same study also provides the RR estimates for the Russian Federation and Hungary, but we chose Belarus as we believed it is the most similar to BiH based on the criteria above. Since the US RR is higher than the estimate for Belarus, we conduct the analysis using both RR estimates and present the results as an interval within which we expect the actual economic cost for BiH falls.

As the Belarus RR is estimated only for current smokers, to be able to also include former smokers in the analysis we approximated the Belarus RR for former smokers based on the ratio between the US RR for current and former smokers (online supplemental table 2). In cases where the resulting RR is less than 1, we rounded it up to 1.

Health expenditure data

In BiH, the costs of healthcare services are almost completely funded by the state health insurance. The country consists of two entities (Federation of BiH, FBiH; and the Republic of Srpska, RS) and one special district (Brcko District, BD). In addition, FBiH consists of 10 cantons. Each territorial unit has its own HIF; the HIFs are not consolidated, resulting in a total of 13 HIFs. In addition, the different levels of digitisation of the HIF systems added to the complexity and to the challenge of obtaining the data needed for the analysis. As a result, we were only able to obtain the health insurance claims by type of illness, gender and age group for RS (whose HIF is digitised), while for FBiH and BD data were only available at the aggregate level from the FBiH Ministry of Health and the government of BD. Since the entities have similar demographic structure, socioeconomic characteristics and almost identical smoking habits and lifestyle, to overcome this problem we applied the population shares by age and gender in FBiH and BD on the costs in RS to disaggregate the total medical costs in FBiH and BD.

As the data on the OOP costs are not available, we assumed that the OOP costs represent 29.3% of the total health spending,[7] so the OOP cost is estimated as (0.293/(1–0.293)×HIF-covered cost). This cost does not include non-medical costs (eg, CTC), which are assumed to be 11.3% of the direct smoking-attributable medical costs, based on estimates from similar studies.[15–19]

Other data

To measure lost productivity due to morbidity, we used the work-loss days, which is the number of workdays that an employee is away from work due to illness. As only the RS HIF provided detailed data on disability days and inpatient hospitalisation days by type of illness, age and gender, we estimated the total work-loss days in FBiH and BD based on disability days in RS by age and gender corrected by the relative ratio of employed persons in these territorial units. Due to lack of data, the work-loss days for workers who were absent from work but not hospitalised were not included in the analysis.

The data on formal employment by entity, age group and gender were obtained from the Statistics Agency of BiH. To account for informal employment, we adjusted the formal employment rate by 30.5%, which is the estimated share of informal employment in 2019 by the International Labour Organization.[20]

Daily gross earnings were estimated based on the average monthly net salary from the Tax Administration Office and divided by the number of days and 0.67 to account for employment benefits. Based on the Tax Administration Office data, the average monthly net salary in BiH in 2019 was €486 for men and €446.4 for women.

To estimate lost productivity due to premature deaths caused by smoking, we estimated the present value of lifetime earnings (PVLE) following Max et al.[19] PVLE is a discounted value of assumed earnings in the future and considers the average annual earnings, labour force participation rate, life expectancy and labour productivity growth rate, by gender and 5-year age group. The labour force participation rate is the ratio between the total number of employed and the total number of living people in each stratification group. We assumed 3.11% (GDP per capita growth rate for the period 2011–2019) for the labour productivity growth rate and 3% for the annual discount rate, which were used in similar research.[2 21–24] The number of deaths by gender and age group and the cause of death according to the International Classification of Diseases-10 were obtained from official statistics.

Study population

According to a survey of smokers conducted in 2019, 59.7% of ever daily smokers started smoking daily between the ages of 18 and 24, and 17.6% between 16 and 17.[3] Because the negative health effects of tobacco use manifest after several years, our study population includes adults 35 years and older.

Table 3 Economic cost of tobacco use in BiH for all diseases, 2019 (millions of euros)

	Belarus RR				US RR			
	Total	Direct	Indirect morbidity	Indirect mortality	Total	Direct	Indirect morbidity	Indirect mortality
Male	235.9	172.5	17.3	46.1	398.2	290.9	27.6	79.7
Female	131.6	112.5	8.5	10.6	236.9	208.5	12.5	16.0
Total	367.5	284.9	25.9	56.7	635.1	499.4	40.1	95.7
% of health spending	25.6				44.8			
% of GDP	2.0				3.5			

Source: Authors' calculations.
BiH, Bosnia and Herzegovina; GDP, gross domestic product; RR, relative risk.

RESULTS

Smoking-attributable fraction

Based on the 2019 survey in BiH,[3] 43.3% of adults 35 years and older were current smokers and 11.5% were former smokers, with current smoking prevalence of 53.3% among men and 33.3% among women. In both entities, current smoking prevalence was relatively higher among male adults in all age groups (table 1).

According to the estimated SAF by entity (table 2), between 30.3% and 48.7% of the burden of diseases and deaths were attributed to smoking among male adults in RS in 2019, while the fraction for women was between 15.9% and 31.6%. The corresponding estimated shares in FBiH and BD were slightly smaller.

Total costs

The total estimated economic cost for all diseases was between €367.5 million and €635.1 million (table 3), or between 2.0% and 3.5% of GDP. The direct costs represented the largest part of the total cost (77.5%–78.6%), which is slightly higher than in other studies. Smokers 35–54 years of age contributed up to 42.7% of the smoking-attributable costs of treatment of all diseases (online supplemental table 3), while for selected diseases the corresponding share was almost 70% (73.9% for men and 58.2% for women) (online supplemental table 4). Coronary heart disease (19.8%) and lung cancer (18.3%) contributed the most to the total cost attributed to smoking (online supplemental table 4).

Direct costs

The direct costs of smoking represent a value of goods and services consumed by a smoker as part of healthcare treatment. The direct medical costs (without OOP and CDSD) of €179 million (table 4) contributed to around 62.8% of the total direct cost attributed to smoking and represented between 1.0% and 1.7% of GDP. Smoking-attributable medical costs among men accounted for around 60% of the total direct medical costs, which is in line with the estimated smoking prevalence among adults in BiH in 2019, where 57.5% of current daily smokers were male.[3] Up to 63.1% of the total direct costs were attributed to treatment of smokers of productive age (online supplemental table 3).

For selected tobacco-related diseases, the estimated total cost was €69.9 million (0.4% of GDP), with around two-thirds of the cost being contributed to by male smokers (table 5). Treatment of pulmonary diseases, including lung cancer, COPD and pneumonia, contributed to around 30% of the total medical cost, both among male and female adults. The tobacco-attributed costs of treatment of heart diseases were the second highest among men and diabetes for women.

Indirect morbidity costs

The morbidity costs are the indirect costs of lost productivity due to disability caused by smoking-related diseases. The estimated morbidity costs were between €25.9 and €40.1 million, with two-thirds of the costs being attributed to male smokers (table 3). For selected tobacco-attributable diseases (table 5), the contribution of male smokers was almost 78%, primarily from health treatments of coronary and other heart diseases (36.8%), as well as lung and other cancers (27.2%).

Indirect mortality costs

The mortality costs of smoking are the indirect costs also known as the smoking-attributable indirect mortality costs and represent a value of lives lost due to premature death caused by smoking. We estimate that cigarette use caused between 24.4% and 42.8% of all deaths in 2019 (table 6) and the indirect mortality costs (table 3) were between €56.7 and €95.7 million, with 81.3% of the costs being contributed to by men. This large share is a result of a few factors, including 60%–80% higher number of smoking-attributed deaths among male smokers (table 6), 19.7% higher employment and 8.9% higher average salary among men.[25] For selected tobacco-related diseases only (table 5), the estimated cost for male smokers was almost five times higher than for women, which is not surprising given a significant difference in the number of smoking-attributable deaths by illness between men and women (table 6).

DISCUSSION AND CONCLUSION

This study estimated the annual economic cost attributed to cigarette smoking in BiH. The major contribution of this study is that it is the first of its kind in BiH. The estimated total cost in 2019 was between €367.5 and €635.1 million, or between 2.0% and 3.5% of GDP. The direct costs represent the largest share of the total cost (between 1% and 1.7% of GDP). There

Table 4 Direct costs in BiH for all diseases, 2019 (millions of euros)

	Belarus RR			US RR		
	Total	Male	Female	Total	Male	Female
Direct medical costs*	179.0	108.3	70.7	313.6	182.7	131.0
CDSD	2.0	1.2	0.8	3.5	2.0	1.5
OOP	75.1	45.5	29.7	131.7	76.7	55.0
CTC	28.8	17.4	11.4	50.6	29.5	21.1
Total direct costs	284.9	172.5	112.5	499.4	290.9	208.5

Source: Authors' calculations.
*Without OOP and CDSD.
BiH, Bosnia and Herzegovina; CDSD, costs of dispensing and shaking drugs; CTC, caregiver and transportation costs; OOP, out-of-pocket; RR, relative risk.

Table 5 Direct medical and indirect costs attributed to smoking in BiH for selected tobacco-related diseases, 2019 (millions of euros)

	Direct medical			Indirect morbidity			Indirect mortality		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Lung cancer	7.3	5.3	1.9	0.9	0.6	0.3	17.4	14.4	3.1
Other cancers	9.5	6.8	2.7	1.3	1.0	0.4	6.5	5.2	1.3
Coronary heart disease	9.9	7.0	3.0	1.6	1.3	0.2	16.2	13.9	2.3
Other heart diseases	8.5	5.7	2.9	1.0	0.8	0.2	8.5	7.0	1.5
Cerebrovascular disease	3.2	2.0	1.2	0.8	0.6	0.2	5.6	4.4	1.2
Other vascular diseases	4.3	3.2	1.1	0.3	0.3	0.1	1.1	0.9	0.2
Diabetes mellitus	13.0	6.2	6.9	0.5	0.4	0.1	2.0	1.6	0.4
Influenza, pneumonia and tuberculosis	3.7	2.2	1.5	0.8	0.5	0.2	3.4	2.8	0.6
Chronic obstructive pulmonary disease	10.5	6.4	4.1	0.4	0.3	0.1	1.6	1.2	0.4
Total tobacco-attributable diseases	69.9	44.7	25.2	7.5	5.8	1.6	62.4	51.5	10.9

Source: Authors' calculations.
BiH, Bosnia and Herzegovina.

is lack of tobacco-related cost estimates in the region of South-eastern Europe. Goodchild et al[2] estimated the economic cost of smoking in BiH in 2012 at 3.4% of GDP, which is close to our estimate of 3.5% based on the US RR, despite the difference in approach. It should be noted that if we compare our results with other upper-middle-income countries (eg, 4.2% of GDP in Armenia and 0.75% of GDP in Argentina),[26 27] we can confirm that our estimation is within this range. The total tax revenue collected from the tobacco sector in 2019 was €531.1 million, or around 2.9% of GDP. However, due to possible underestimation of the costs, it is possible that the costs may exceed the tobacco tax revenues in BiH.

One source of potential underestimation is the use of wage data from the Tax Administration Office, which include only declared wages. Undeclared wages, which mainly take the form of the so-called 'envelope wages', are prevalent in BiH. In such setup, the employer officially pays the minimum wage to their employees (ie, declared wage), while an extra wage is paid in cash (ie, not declared). As there is no reliable estimate on the size of informal wages, we were not able to account for this. Some studies with similar approach to modelling of economic costs of smoking also did not include envelope wages.[2 17 21] Moreover, the level of productivity and wages in BiH is very low. In 2019,

the productivity, measured by the GDP per capita in international dollars, and wages were 2.9 and 2.4 times lower than in the European Union, respectively.[28–30]

This study has a few limitations. First, due to lack of RR estimates for BiH and the inability to estimate them, we had to rely on RR estimates from other countries. In addition, we used the mortality RR for all three cost estimates, which may be underestimating the total costs, as the evidence, even though limited, shows that the morbidity RR may be higher than the mortality RR.[31] Second, smoking prevalence used in the SAF calculation was based on self-reported data. These rates could be underestimated, especially for women, so the cost of smoking may be even higher. Third, as we were not able to obtain a detailed database for health costs for the whole country, the estimation for FBiH and BD was done based on the results for RS. Fourth, the indirect costs may be underestimated due to several reasons. In addition, due to lack of data, we were not able to account for the lost productivity of those who were on sick leave for fewer than 30 days and were not hospitalised. Also, our estimated cost of smoking does not account for the emotional and mental costs of becoming ill from smoking, as well as the family and caretaker costs and time of having a family member who is ill from smoking.

Table 6 Total number and number of smoking-attributed deaths in BiH, 2019

	All deaths			Smoking-attributable deaths			%		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
All diseases									
Belarus RR	38 183	19 379	18 804	7472	5056	2415	**19.6**	26.1	12.8
US RR				13 575	8588	4987	**35.6**	44.3	26.5
Selected smoking-related diseases									
Total	24 564	12 570	11 994	9108	5460	3648	**37.1**	43.4	30.4
Lung cancer	1887	1388	499	1667	1251	416	88.4	90.2	83.3
Other cancers	3055	1814	1241	841	610	231	27.5	33.6	18.7
Coronary heart disease	4677	2548	2129	1784	1151	633	38.1	45.2	29.7
Other heart diseases	6593	2913	3680	1454	917	536	22.0	31.5	14.6
Cerebrovascular disease	4605	2075	2530	979	604	375	21.3	29.1	14.8
Other vascular diseases	558	283	275	273	157	116	49.0	55.6	42.1
Diabetes mellitus	1849	777	1072	655	245	410	35.4	31.5	38.3
Influenza, pneumonia and tuberculosis	671	375	296	271	190	81	40.4	50.8	27.4
Chronic obstructive pulmonary disease	669	397	272	541	334	207	80.8	84.2	75.9

Source: Authors' calculations.
BiH, Bosnia and Herzegovina; RR, relative risk.

Despite these limitations, the significance of the findings of this study is not impacted and the findings demonstrate that cigarette smoking imposes a significant economic burden in BiH and represents a major drain on the nation's limited financial resources. Strong implementation of comprehensive price and non-price tobacco control measures is required to reduce the negative health and economic impacts of cigarette use in the society, which would contribute to achieving the Sustainable Development Goals in BiH.

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