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Research Article

Impact of Comprehensive Smoke-Free Policy on Some Respiratory Diseases in Georgia

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Abstract

Introduction: Second-hand smoking (SHS) among adults is also linked with increased risks of several health problems including respiratory systems (asthma, chronic respiratory symptoms, decreased pulmonary function, chronic obstructive pulmonary diseases). More than 1.2 million death are the result of non-smokers being exposed to second-hand smoke. Tobacco use in Georgia causes 11,400 deaths annually, among them - at least 2,100 are among nonsmokers.

Georgia made step forward in 2017 and adopted new amendments on tobacco control legislation, which mostly corresponds to the FCTC requirements. Among other changes in the regulations is ban of smoking in public buildings and public transport with a few exemptions.

The aim of the study is to analyze data before and after comprehensive smoke-free policy and observe proper changes regarding respiratory health impacts.

Methods: We used logical model for data collection and analyze. The model evaluates different data sources logically. We collected data from different sources before (baseline) and after one year and half of entering into force new tobacco control regulations. Assessment of outcome is based on the combination of secondary analysis of routine health and epidemiological data as well as researches commissioned to address respiratory diseases.

Results: The incidence of chronic obstructive pulmonary diseases decreased in 2017 by 21% to compare with 2016 and then after smoke-free policy, COPD incidence decreased in 2019 by 12% to compare with 2017. The incidence of asthma and asthma status in general population decreased in 2019 by 15% to compare with 2017 and by 29% to compare with 2018. Serious decline in asthma status we have among children during 2018-2019 to compare with 2017. In 2018 the incidence declined by 46% to compare with 2017 and in 2019 it declined by 48% to compare with 2017.

Conclusion: Comprehensive smoke-free policy with high level of compliance (95%+) had positive impact on the decline of SHS exposure and tremendous improvement of indoor air quality in public places and promotes decreases of illnesses related to acute pulmonary (COPD, Asthma) in Georgia.

Keywords: *Impact of Comprehensive; Some Respiratory; Diseases in Georgia*

Introduction

Several decades of research and studies, shows that there is a multitude of health risks posed by passive (second-hand) smoking on different organs and systems of human body. More than 1.2 million death are the result of non-smokers being exposed to second-hand smoke [1].

Second-hand smoking (SHS) among adults is also linked with increased risks of several health problems including respiratory systems (asthma, chronic respiratory symptoms, decreased pulmonary function, chronic obstructive pulmonary diseases) [2,3].

Reviews of the literature demonstrate that smoke-free policy improves health conditions of the population[4]. For example, Ellen Hahn reviewed the literature published between 2000 and 2010 on health outcomes following introduction of comprehensive smoke-free policy. The review covered several states of the US, European countries, Australia and New Zealand which have comprehensive smoke-free legislation. She found that smoke-free regulations lead to improved indoor air quality, exacerbation of asthma, acute myocardial infarctions (AMIs) and an overall improvement in the health of hospitality workers and general public [5]. Goodman and colleagues reviewed studies published between 2004 and 2009 concluded that significant and consistent evidence from around the world shows that comprehensive smoke-free laws are associated with improved respiratory health and reduced cardiovascular disease (CVD) [6]. 2016 review of 77 studies from 21 countries concluded that smoke-free bans supports subsequent reductions in smoking-related morbidity and mortality and it improves cardiovascular, respiratory and perinatal health outcomes for both smokers and nonsmokers are persuasive [7].

43% of population is exposed to secondhand smoke at home and 15.8% of employees are exposed to secondhand smoke at their workplaces [8]. Tobacco use in Georgia causes 11,400 deaths annually, among them - at least 2,100 are among nonsmokers [9].

To address above-mentioned problem, Georgia made step forward in 2017 and adopted new amendments on tobacco control legislation, which mostly corresponds to the FCTC requirements. Among other changes in the regulations is ban of smoking in public buildings and public transport with a few exemptions (casinos, big slot clubs, performances in theatres, taxi). The regulation entered into force in 1st May 2018 [10]. The compliance level of new regulations is very high around 96%, [11] from which we can assume that Georgian new smoke-free policy may have some positive impact on SHS exposure and some respiratory diseases of Georgian population.

It was opportunity for us to collect appropriate data before and after comprehensive smoke-free policy and observe proper changes regarding concrete health impacts.

Methods

The aim of the study is to learn respiratory health outcomes of comprehensive smoke-free legislation in Georgia. We used logical model for data collection and analyze. The model evaluates different data sources logically.

We collected data from different sources before (baseline) and after one year and half of entering into force new tobacco control regulations. Health Statistical data were taken from the Healthcare Statistical Yearbooks (2013-2019), of the Ministry of Internally Displaced Persons from the Occupied Territories, Labour, Health and Social Affairs of Georgia (Ministry of Health - MoF). Diseases on the Yearbook are presented through the International Classification of Diseases (ICD) – 10. We used incidence data regarding *Chronic Obstructive Respiratory Diseases (COPD), Asthma and Asthma status (including for children).*

Assessment of outcome is based on the combination of secondary analysis of routine health and epidemiological data as well as researches commissioned to address specific questions. The research will focus on intermediate impacts up to one year and half after implementation of the legislation.

Results

The incidence of chronic obstructive pulmonary diseases decreased in 2017 by 21% to compare with 2016 and then after smoke-free policy, COPD incidence decreased in 2019 by 12% to compare with 2017 (Appendix: Table 1, Figure 1). High level of incidence in 2015-16 maybe was related to improvements of healthcare professionals practice to differentiate COPD from other pulmonary diseases.

Year	2013	2014	2015	2016	2017	2018	2019
COPD, incidence	75.9	64	90	97.5	77.4	74.3	68.3

Table 1: *COPD incidence during 2013-2019.*

Source: *Ministry of Health of Georgia 2020.*

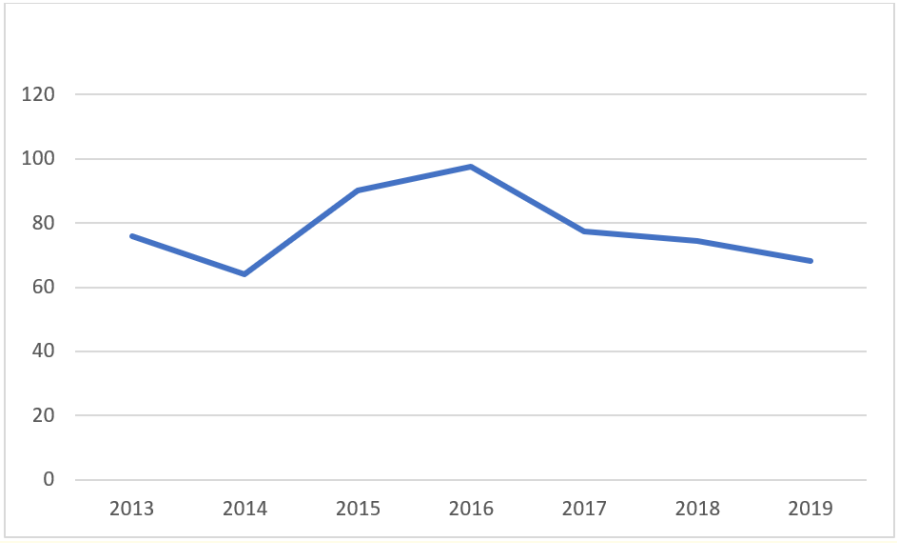

Figure 1: *COPD, incidence during 2013-2019.*

Source: Ministry of Health of Georgia 2020.

The incidence of asthma and asthma status in general population decreased in 2019 by 15% to compare with 2017 and by 29% to compare with 2018 (Appendix: Table 2, Figure 2). Serious decline in asthma status we have among children during 2018-2019 to compare with 2017. In 2018 the incidence declined by 46% to compare with 2017 and in 2019 it declined by 48% to compare with 2017 (Appendix: Table 3, Figure 3).

Year	2013	2014	2015	2016	2017	2018	2019
Asthma and Asthma status, Incidence	77.7	95.4	87.7	80.2	69.5	83.1	59

Table 2: *Asthma and Asthma status incidence in general population during 2013-2019.*

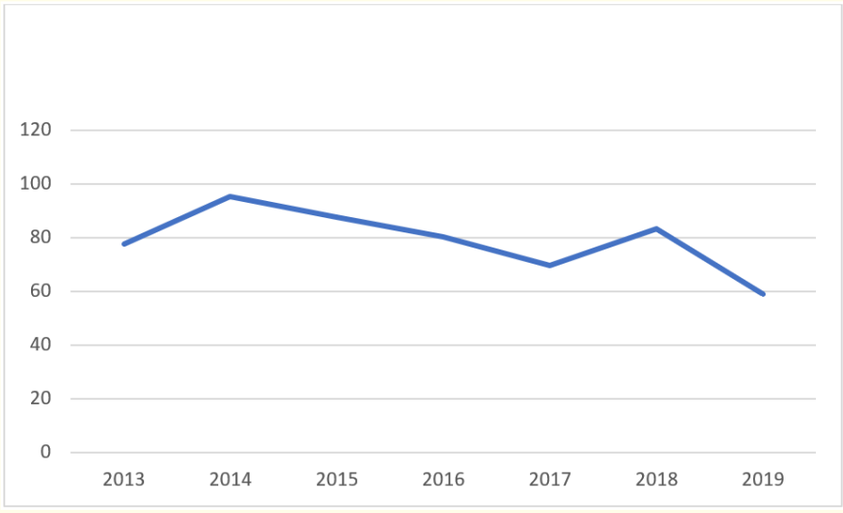

Figure 2: *Asthma and Asthma status, Incidence during 2013-2019.*

Source: Ministry of Health of Georgia 2020.

Year	2013	2014	2015	2016	2017	2018	2019
Asthma and Asthma status, Incidence	70.5	70.3	79.6	52.3	48.8	26.3	28.3

Table 3: *Asthma and Asthma status incidence among children (0-15) during 2013-2019.*

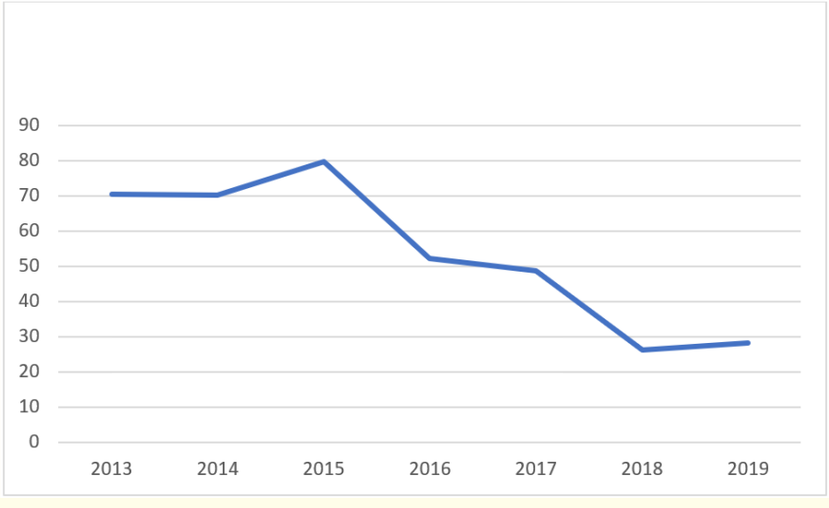

Figure 3: *Asthma and Asthma status, Incidence among children (0-15) during 2013-2019.*

Source: Ministry of Health of Georgia 2020.

Discussion

Findings from the study have the linkage and correlations to the relevant studies conducted globally during of last decades. More than 95% of compliance of comprehensive smoke-free legislation really created smoke free environment in indoor public places in Georgia. The air quality improved 11 times in hospitality sector, 5 times in public settings and twice in healthcare facilities.[11] Several meta analyzes show that indoor air quality improvement has direct impact and benefits to the pulmonary and cardio health of population in different countries with smoke free legislation implemented.

Most of the studies about the impact of smoke-free legislation on population health have examined the short-term effect of legislation on acute respiratory diseases. Majority of the studies analyzes data 12 or 18 months before smoking prohibition in public places and after 12 or 18 months of the prohibition. The studies with the largest reductions in hospital admissions (along the order of 30%) were conducted on relatively small populations and included only a small number of admission events. Larger population studies, which covered large geographical areas and included thousands of cases, but did not include control areas, found smaller reduction, between 8% and 17% [12-14].

We in Georgia used the same time period for the first stage and observed appropriate health and other related statistics during one and half year after a new tobacco control regulations has entered into force. In our study, we covered all Georgian population's data and are able to conclude that, incidence of COPD decreased at the end of 2019 by 12% to compare with 2017; the incidence of Asthma and Asthma status in general population decreased by 15% and among children by 48% the same time period.

Limitations

One-year and half time to observe the positive changes on respiratory health is low time frame, but it gave us positive trend of impact of comprehensive smoking ban in public places and transport. There is need to continue data collection and analyses during long-term period to learn more impact of such measures to the same and other health conditions of Georgian population.

Conclusions

Comprehensive smoke-free policy with high level of compliance (95%+) had positive impact on the decline of SHS exposure and tremendous improvement of indoor air quality in public places and promotes decreases of illnesses related to acute pulmonary (COPD, Asthma) in Georgia.

Bibliography

1. WHO. Fact sheets on tobacco harm. Published in (2019).
2. WHO. Second-hand smoke and children (2019).
3. American Cancer Society. The Facts About Secondhand Smoke (2019).
4. International Agency for Research on Cancer. Evaluating the effectiveness of smoke-free policies. Handbooks of cancer prevention, tobacco control, Lyon, France: IARC 13 (2009).
5. Hahn E. "Smokefree Legislation, a Review of Health and Economic Outcomes Research". *American Journal of Preventive Medicine* 39.6S1 (2010): S66-S76.

6. Goodman PG., *et al.* "Are there health benefits associated with comprehensive smoke-free laws". *The International Journal of Public Health* 54.6 (2009): 367-378.

7. Frazer K., *et al.* "Legislative smoking bans for reducing harms from secondhand smoke exposure, smoking prevalence and tobacco consumption". *Cochrane Database of Systematic Reviews* 2 (2016): CD005992.

8. WHO, STEPS Survey – Georgia (2016).

9. UNDP, WHO FCTC Secretariat, RTI International. Investment Case for Tobacco Control in Georgia. The case for investing in WHO FCTC implementation in Georgia (2018).

10. Georgian Law on Tobacco Control. Tbilisi (2017).

11. Bakhturidze G. "Evaluating health and economic impact of tobacco control law in Georgia". *FCTC Implementation and Monitoring Center in Georgia* (2019).

12. Tan C and Glantz S. "Association Between Smoke-Free Legislation and Hospitalizations for Cardiac, Cerebrovascular, and Respiratory Diseases". *Circulation* 126 (2012): 2177-2183.

13. Fraze K., *et al.* "Legislative smoking bans for reducing harms from secondhand smoke exposure, smoking prevalence and tobacco consumption". *Cochrane Systematic Review* (2016): CD005992.

14. Rando-Matos Y., *et al.* "Smokefree legislation effects on respiratory and sensory disorders: A systematic review and meta-analysis". *PLOS one* (2017).

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