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How big is support for smoking prohibition in public places in Kyrgyzstan among mining employees? ☆

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Summary
Background: In Kyrgyz Republic, some, but not all, workplaces and public places have been designated smoke-free, but the extent of support for this is unknown. The aim of this study was to determine how big if any this support is.
Methods: A cross-sectional sample of employees at the biggest mining company in Kyrgyzstan was interviewed during their annual medical examination. A self-administered questionnaire on attitudes towards a full smoking ban at the workplace along with questions on knowledge and attitudes regarding the current legislation was used on 1881 employees, who lived mostly in Bishek and the Issyk-Kul area. Logistic regression was used to determine the predictive role of smoking, sex, and place of residence.
Results: Participants were mostly men (87.1%), aged 38.6 ± 9.4 years. In general, the employees supported a stricter tobacco control policy in their company (59.2%), and 58.2% supported a full smoking ban at workplaces and 61.5% in dwelling rooms at the mining site. The current tobacco control Law was familiar to 63% of employees (49% women). Of 668 participants, 85% indicated full support for the smoking ban in public places, and 77% supported full prohibition of smoking in places

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where smoking was currently partially banned. Smokers were less likely to support a full smoking ban in places with a current partial ban (OR 0.52; 0.35—0.75).
Conclusions: The level of awareness of the tobacco control legislation was very low among Kyrgyzstan mining employees. They supported the full smoking ban in places where smoking was already prohibited and a full smoking ban in places where smoking was currently only restricted.

Introduction

Tobacco use is widespread around the world, ravaging in particular those countries and regions which can least afford its toll of disability, disease, lost productivity and death [1]. Currently, there are an estimated 1.3 billion smokers in the world, and the number of deaths from tobacco consumption is 5 million a year [1]. If present consumption patterns continue, the number of deaths will nearly double, reaching 10 million by the year 2020 [1]. Approximately one half of continuing cigarette smokers will eventually die prematurely from tobacco use.

The higher burden of death and disease has gradually shifted to developing countries [1]. In response to the globalization of the tobacco epidemic, the WHO Framework Convention on Tobacco Control (WHO FCTC) was developed. This evidence-based treaty reaffirms the right of all people to the highest standard of health. The WHO FCTC represents a paradigm shift in developing a regulatory strategy to address addictive substances. In contrast to previous drug control treaties, the WHO FCTC asserts the importance of demand reduction strategies at the same time addressing supply issues [2].

Kyrgyz Republic is a developing country in phase II of the tobacco epidemic, with a very high and growing prevalence of smoking in males and less in females, combined with a still relatively small incidence of lung cancer. The main local legislative achievements are the law ''on ratification of WHO FCTC" and subsequently law #175 ''on the protection of citizens of Kyrgyz Republic against harmful effects of tobacco", adopted by Parliament in 2006. Along with other activities, the latter in particular implies creating smoke-free workplaces, as environmental tobacco smoke exposure has been proven to be linked with cancer, heart disease, and respiratory illnesses [3,4] and is the leading source of indoor air pollution [5]. Smoke-free workplaces not only protect non-smokers, they also create an environment that encourages smokers to cut back [6] or quit. Since as early as the 1980s, the tobacco industry has recognized that smoke-free workplaces have a major effect on cigarette consumption [7]. In 1992, Phillip Morris privately estimated that if all workplaces were smoke-free, total consumption would drop by about 10%, through a combination of quitting and cutting down [8]. Law #175 introduced a ''full" and a ''partial ban", which requires specially designated areas for smoking". Unlike a ''partial ban", in which 50% of space should be designated for a non-smoking area with separate ventilation, smoking in places with a ''full ban" is fully prohibited.

But application of the Laws is incomplete for many reasons. One of the causes is likely resistance to their requirements by the general public. No comparative studies have been undertaken in Kyrgyz Republic to assess the effect of the new Legislation. No studies were implemented before to verify that the population was ready to meet a full smoking ban in workplaces. Decision-makers at the local level require relevant data to support a smoking ban and to fight the tobacco industry.

The aim of the study was to measure the awareness of a sample of the population and its readiness to support the new control Law in Kyrgyz Republic.

Materials and methods

Subjects and study design

One of the leading companies in the mining industry (Kumtor Operating Company) with an advanced monitoring system was chosen as a pilot setting for the current study. Some 2500 persons work in the company on a rotation-shift basis at high altitude. Following a 2 week shift of rest at home there are 2 weeks of work at the high altitude mine in the Issyk-Kul area with residence in a camp at 3800 m above sea level. In general, the staff of the company is employed for intense physical work, and around 90% of the personnel are middle-aged men. Less than 5% of employees are residents of Bishkek, and the rest live in Issyk-Kul area.

Local personnel have to undergo annual medical screening in Bishkek (capital of the country) with

advanced equipment to decide if they are fit to work at high altitude. This screening comprises clinical investigations and laboratory tests along with consultations by specialists. The smoking history of each subject is routinely collected annually. In 2007, 28.1% were never-smokers, and 50.6% were daily smokers. The current study was designed as a cross-sectional study with self-administered questionnaires for all local employees undergoing their annual screening between January 2007 and January 2008 at the medical clinic in Bishkek. In this study we also included those individuals who had never worked for the company, but were about to start work and had undergone their medical screening (''new staff").

Questionnaire

The self-administered questionnaire was created in Russian and translated into the Kyrgyz language; the translation was validated. It consisted of the following sections:

(1) General respondent information, data on the current work schedule, work duration, etc.
(2) Smoking status.
(3) Questions on awareness and attitudes to the local tobacco control policies of the Company and of the State.

The last part was integral to the study objective, and the questions are listed in Table 1.

Statistical analysis

Data were analyzed using Statistica 6.0 (Statsoft) and NCSS 2002. We compared groups with each other using non-parametric techniques, and statistical significance was calculated using 2×2 test (for categorical data) and Mann-Whitney test. A *p -value* less than 0.05 was considered as statistically significant. We used logistic regression to compute the predictive values of independent variables (sex, smoking, being a veteran staff). We also stratified by smoking status when comparing men with women, and veteran staff with new staff.

Results

Participant profile

Overall, there were 1881 employees who underwent screening examinations and took part in this study. The group consisted of 243 women (12.9%) and 1638 men (87.1%). The mean age of the subjects was 38.6 ± 9.4 years, the majority in the age group 30—50 years. The study group comprised local people working in all the departments of the

Table 1 Questionnaire for subjects.

Tobacco control at company level
Do you think tobacco restriction or the prohibition policy in your company should be stricter?
Do you think that the company you work for should offer aid to those willing to quit smoking, for example, counseling or medications?
Do you believe smoking should be totally banned in workplaces of your company?
Do you believe smoking should be totally banned in the camp of your company?
Do you feel that smoking in the room should be allowed only upon a partner's consent?
State tobacco control policy
Are you aware that on 16 June, 2006, Parliament adopted the Law ''On protection of citizens of Kyrgyz Republic against harmful effects of tobacco"?
Are you aware that article 7 of the current Law implies a full smoking ban in all educational organizations at all levels, recreational facilities for children; in medical facilities; in fire prone places, including gas stations; in cinemas, theatres, sports premises and arenas, circuses, concert halls and other closed cultural and enlightenment and sports institutions; in museums, libraries, exhibition halls and lecture halls; in passenger compartments of urban, inter-urban, shuttle taxi and urban electric transport; in crafts of water and air transport; in elevators; in any workroom where services are delivered to the population?
Do you support a full smoking ban in these places?
Are you aware that smoking is prohibited in buildings and premises of governmental institutions and bodies of local self-government; in buildings and halls of intercity bus stations, railway stations and airports; in trains; in places of public catering (restaurants, cafe, pubs, bars and etc.); and no more than 50% of space shall be allocated for smoking?
Do you support the partial smoking ban in the places listed in the previous question?
Do you support a full smoking ban in the above listed places in the future?

Table 2 Residence and educational level of 1881 participants.

Participants	Living in			Educational level		
	Issyk-Kul	Chuy	Other or no reply	Secondary or high school	College	Higher education or academic degree
High altitude employees (*N* = 1480)	992	461	27	417	466	597
Bishkek staff (*N* = 96)	96	0	0	50	26	20
New staff (*N* = 305)	194	92	19	62	95	148

company both at the high altitude mining site and in the Bishkek office. The place of residence, and educational level of responders are listed in Table 2.

Attitudes to tobacco control policy in the company

Overall, 1113 (59.2%) of all people surveyed felt that the tobacco control policy in the company must be more strict; 1642 (87.3%) employees felt that the company should offer aid to those willing to stop smoking. Presently, smoking is allowed at the workplace, but 1095 (58.2%) thought smoking must be banned in all workplaces; 1157 (61.5%) supported a full smoking ban in the camp. Of 688 employees who objected to a smoking ban in the camp, 566 (82.3%) supported the initiative to allow smoking only upon the partner's consent (a person living in the same room).

As shown in Table 3, non-smokers were generally more committed to a stricter policy banning smoking (odds ratio (OR) 1.98 (95% CI 1.64—2.39), to a full smoking ban in workplaces (OR 2.36 1.96—2.86)), and to a full smoking ban in camp (OR 4.62 (3.76—5.67)). We also found that veteran staff vs. new staff was more reluctant to a stricter smoking policy and was more likely to allow smoking in workplaces and in camp. Finally, women were more likely to support a full smoking ban in workplaces (OR 1.25 (0.95—1.66)) and in camp (OR 1.70 (1.26—2.31)). The majority of new non-smokers supported a smoking ban in workplaces (*N* = 126 (80.8%) and in camp (*N* = 131 [84.0%]).

Attitudes to state tobacco control

Answers on these questions were obtained from 668 of the 1881 employees. This happened not because of any exclusion of responders, which would have led to a bias, but because questions in this section were added later. In this group, 424 (63%) said they were aware of the tobacco control law; 509 (76%) said they knew smoking was completely prohibited in the places listed according to article 7 of that law; and 567 (85%) supported this full smoking ban. When asked where smoking was restricted to 50%, 521 respondents (78%) knew the

Table 3 Attitudes towards tobacco control within a company, segregated across various worker subpopulations (*N* = 1881).

Questions	Average	Smoking		Staff		Sex	
		Smokers (*N* = 936)	Non-smokers (*N* = 945)	Veteran (*N* = 1591)	New (*N* = 290)	Male (*N* = 1638)	Female (*N* = 243)
Smoking ban policy must be stricter	1113 (59.2%)	480 (51.3%)	633 (67.1%)*	899 (56.5%)	214 (73.8%)*	967 (59.1%)	146 (60.1%)
Company should offer help	1642 (87.3%)	839 (89.6%)	803 (85.1%)	1399 (88.0%)	243 (83.8%)	1448 (88.5%)	193 (79.4%)*
Smoking must be banned in workplaces	1095 (58.2%)	450 (48.1%)	645 (68.3%)*	873 (54.9%)	222 (76.6%)*	941 (57.5%)	153 (63.0%)*
Smoking must be banned in camp	1157 (61.5%)	421 (45.0%)	736 (78.0%)*	913 (57.4%)	244 (84.1%)*	985 (60.2%)	172 (70.8%)*

* Significant differences compared to previous column.

Table 4 Attitudes and knowledge about state tobacco control policy ($N = 668$).

Questions	Average	Smoking		Staff		Sex	
		Smokers ($N = 329$)	Non-smokers ($N = 339$)	Veteran ($N = 589$)	New ($N = 79$)	Male ($N = 571$)	Female ($N = 97$)
Aware about the Law	424 (63%)	217 (66%)	207 (61%)	376 (64%)	48 (61%)	376 (66%)	48 (49%)*
Knows the list of places where smoking is completely prohibited according to article 7	509 (76%)	267 (81%)	242 (71%)*	442 (75%)	67 (85%)*	448 (78%)	61 (63%)*
Supports the full smoking ban in places listed in article 7	567 (85%)	277 (84%)	290 (86%)	496 (84%)	71 (90%)	489 (86%)	78 (80%)
Knows the list of places where smoking is partially prohibited to 50%	521 (78%)	269 (82%)	252 (74%)*	455 (77%)	66 (84%)	455 (80%)	66 (68%)*
Supports the partial smoking ban in places listed in previous question	587 (88%)	299 (91%)	288 (85%)*	517 (88%)	70 (89%)	508 (89%)	78 (81%)*
Supports a full smoking ban in areas where smoking is currently partially prohibited	517 (77%)	236 (72%)	281 (83%)*	453 (77%)	64 (81%)	446 (78%)	71 (73%)

* Significant differences compared to previous column.

locations and 587 (88%) supported at least this partial ban (restriction), while 517 (77%) supported a full smoking ban in these places in the future.

As seen in Table 4, smokers were more likely to know the requirements of Law 175 in terms of the list of places where smoking was either banned (OR 1.7; 1.18—2.45) or restricted (OR 1.55; 1.03—2.35), and they were less likely to support a full smoking ban in the future in those places where presently it was only restricted (OR 0.52; 0.35—0.75).

Men were more likely to know about the Law (OR 1.96; 1.27—3.03); while among women, only half were aware of the Law. Men were more likely to know that smoking was banned in public places as listed in article 7 (OR 2.06; 1.3—3.29); and restricted in certain places (OR 1.86; 1.11—3.13). Finally, men showed greater support for at least a partial ban in places identified in article 7 under the partial smoking ban places list (OR 1.99; 1.1—3.6).

Discussion

This was the first study of public opinion on the attitudes to tobacco control legislation in Kyrgyz Republic since the new legislation was proposed and came into power. We found that only 63% of a sample of employees in Kyrgyz Republic was aware of the current legislation, which aimed at protecting their health from the harmful effects of tobacco. This can be due to both a low effectiveness of the law and a lack of public interest, possibly resulting from a low awareness of the dangers of environmental tobacco smoke. The lack of understanding has significant implications both for individuals and for public health. Individuals simply may not know why they need to protect themselves, their employees, or their families from tobacco smoke [9]. This clearly indicates the need for more active educational and promotional policies from the State and Government in preparing the population for smoking bans in public places.

Building a smoke-free environment in the workplace is an important step in promoting healthy living. A generally low level of awareness may explain some 58% of the support for smoke-free workplaces. There is a clear necessity for aggressive educational programmes for employees explaining how smoke-free workplaces can improve their lives and help them quit smoking.

We also found that in general, employees supported a smoking ban in those places where it was already prohibited and even more so, they supported a full smoking ban in places with a current partial restriction. This can serve as compelling evidence and support for the Government in discussions on whether a ban should be implemented in all places. These data show that the ban must be strictly followed, and that there is no support for simply more discussions raised by interested parties. Places with a current partial ban must be

made 100% smoke-free as soon as possible, because the population is ready for this and research clearly shows that there is no safe level of exposure to second-hand smoke [10]. The Conference of the Parties to the Framework Convention [11], the WHO International Agency for Research on Cancer [12], the US Surgeon General [13] and the United Kingdom Scientific Committee on Tobacco and Health [14] all concur that exposure to second-hand smoke increases the risk of coronary heart disease by 25—30% and the risk of lung cancer in non-smokers by 20—30% [13].

In spite of the novelty of actions on smoking bans (the Law was adopted in August 2006), our sample showed a high commitment for a smoking ban in public places. Surveys in other countries also show that smoke-free legislation is extremely popular wherever it is enacted. For example, in China 90% of people living in large cities — smokers and non-smokers alike — support a ban on smoking in public transport and in schools and hospitals. More than 80% support a smoking ban in workplaces, and about half support banning smoking in restaurants and bars [15]. In 2006, Uruguay became the first country in the Americas to go 100% smoke-free by enacting a ban on smoking in all public spaces and workplaces, including bars, restaurants and casinos. The ban won support from eight out of ten Uruguayans, including nearly two thirds of the country's smokers [16]. After New Zealand passed smoke-free laws in 2004, 89% of its citizens said they supported the right of people to work in a smoke-free environment [17]. In California, 75% of the population approve smoke-free workplace laws that included restaurants and bars, enacted by that US state in 1998 [18].

This study shows that a significant opposition to smoking prohibition may come from smokers themselves, for they were less likely to support any full smoking ban. Non-smokers demonstrated a greater readiness to endorse smoke-free laws. This clearly highlights the need for more efforts to compel smokers to respect the rights of non-smokers to a healthy environment. These data coincide with data from other public opinion studies [19—21]. We also found sex-specific attitudes to banning smoking at the workplace and in camp — women were more committed to bans, possibly because the prevalence of smoking in women in the study sample was relatively low.

The results of this study show that awareness about the Law was generally lower than knowledge about areas of both complete and partial smoking bans. Perhaps people were more aware of areas of complete or partial prohibition because they encountered signs, or they may have been informed by the personnel of such places. However, they might not know that all these regulations are listed in a specific law that also regulates other aspects of tobacco control, not only public places.

This study has significant limitations. Firstly, there were too few women surveyed, and that was explained by the professional distribution in the company. Participation of more women could alter the final data; however, although surveyed women were less likely to know about the Law, they responded with almost the same support for a full smoking ban. Other studies have shown women are as likely to support smoke-free environments as men [22—24].

Secondly, our data were biased by the sample. Possibly the people working at this mining company were not representative of the general Kyrgyzstan population. However, we covered most of the actively working people of Issyk-Kul and Chuy areas of the country. This study is the first sign of strong support of a population for smoke-free environments, and a representative sample should be surveyed in the future to obtain reliable data about public support in this country.

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