Title: Attitudes of smokers towards tobacco control policies: Findings from the Studying Tobacco users Of Pakistan (STOP) survey

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Abstract

Background

Public attitude is a political driver in successful implementation of tobacco control policies. We assessed support for a range of tobacco control policies among smokers in Pakistan.

Methods

We conducted a household survey among adult smokers in 10 cities of Pakistan, using a two-stage random sampling strategy to select households and Kish Grid method to select one smoker per household. Attitudes were measured using a five-point ordinal scale on four policy statements: a complete ban on tobacco sale within 10 years; raising the legal age to buy tobacco from 18 to 21; increasing tobacco taxes to fund healthcare; and a ban on smoking in cars with minors.

Results

6,014 participants were interviewed between September 2019 and March 2020. Most participants demonstrated strong support for all policy statements: a ban on smoking in cars with minors (86.5%); a complete ban on tobacco sale within 10 years (82.1%); raising the legal age to buy tobacco (77.9%) and increasing tobacco taxes (68.1%). Smokers' support for tobacco control policies increased with age but decreased with higher educational attainment and heaviness of smoking.

Conclusions

There is strong support among smokers in Pakistan to strengthen tobacco control. Given this, policy makers should strongly consider strengthening existing national policies on tobacco control.

Background

For governments, public acceptability of measures to change health-related behaviours is important.[1] Without evidence of public support, governments hesitate to impose such measures, fearing consumer backlash, accusations of being a nanny state and the cost of enforcement and subsequently losing authority.[2] Such fears are frequently amplified by the industry e.g. in case of tobacco control.[3,4] Therefore, independent evidence of public support becomes even more important for policy change, as politicians often tend to underestimate the level of public support for public health measures.[5]

There is now strong evidence, albeit mostly from high-income countries (HICs), that the public supports policy measures to reduce consumption of tobacco.[1] Emerging evidence from LMICs also suggests high level of public support for smoke-free workplaces, hospitality venues, schools and hospitals[6–8] and for increasing tobacco taxes.[9] For tobacco control policies, support from non-smokers as well as smokers has catalysed successful policy implementation in many HICs.[10–13] A possible explanation for support among smokers particularly, comes from the theory of self control. That is, smokers willing to stop smoking may support smoking restrictions because they think they can help them to quit.[14] For example, support for smoke-free laws among smokers is associated with their previous quit attempts and predicts future quitting.[14] Similarly, tobacco tax increase is likely to have support among smokers, if the additional revenue is spent on providing cessation services.[15,16] In contrast, evidence for smokers' attitudes towards measures that protect young people from tobacco exposure[17] and some of the proposed end-game strategies such as future tobacco ban[18,19] is lacking. Only a few studies have measured support for a range of policies in the same cohort of smokers.[20,21] Pakistan is a low resource, high-tobacco burden country. According to the 2014 Global Adult Tobacco Survey, 19.1% (23.9 million) adults (31.8% males, 5.8% females) were current tobacco users; of these, 12.4% smoked tobacco (22.2% males and 2.1% females).[22] Tobacco use was unequally distributed across

socioeconomic status; the smoking prevalence was more than twice in those with education upto primary school or below than those upto high school and above.[23] In addition to 160,000 tobacco-related deaths every year, Pakistan suffers an annual/yearly economic loss of 198 billion rupees (1.3 billion USD) due to tobacco-related mortality and morbidity.[24] In recent years, Pakistan has taken some positive steps towards tobacco control e.g. introducing bans on tobacco advertisement, promotion and sponsorship (TAPS) as well as bans on display of products at points-of-sale, yet many other evidence-based tobacco control policies such as tobacco taxes have not been implemented in a comprehensive manner.[22] We investigated the level of support among smokers for a range of policy measures, with an aim to inform and strengthen tobacco control policies in Pakistan.

Methods

A cross-sectional household survey (STOP) was conducted in the 10 most populous cities of Pakistan representing 20% of the total population and 16% of all smokers in Pakistan. Participants were regular smokers aged 15 years or above.

Using an average of 20 households per primary sampling unit (PSU), a sample size of 6,313 households and 316 PSUs was estimated. This was based on assuming a smoking prevalence of 10% in urban areas and a design effect equal to 2.[22] Furthermore, the population at risk and the average household size were assumed to be 64% and 6.2, respectively.[25] The response rate and a margin of error were set to 95% and 0.055, respectively.

Households were identified using a two-stage random sampling. At the first stage, we used stratified random sampling to select Union Councils (PSUs) from the ten cities proportional to their population size. We identified eligible households (having at least one regular smoker aged 15+) by screening every household (range 200-400) within each PSUs and from these, randomly selected 20 households in the second stage. One participant per household was

identified using Kish Grid method.[26] All eligible households were offered written study information and selected participants consented prior to their recruitment.

Our field investigators (11 females and 36 males; age range from 20-40) received three-day training to conduct the survey including in-field supervision. The training also included how to ask smoking-related questions from women in a culturally sensitive manner. The survey methods were also piloted in two cities. Data were collected by field investigators in real time using handheld digital tablets. Attitudes towards tobacco control policies were gauged by responses to four statements adapted from the German National household survey on smoking behaviour and cessation (DEBRA):[20] (1) The sale of cigarettes and tobacco in Pakistan should be banned completely within the next 10 years; (2) The legal age of sale of cigarettes and tobacco in Pakistan should be raised from 18 to 21; (3) Tobacco industry sales should be taxed in order to use the money to address problems caused by tobacco (e.g., health issues.); and (4) When minor children are in a private car, smoking inside the car should be banned and subjected to punishment. For each statement, participants indicated their level of support by choosing one of the following five options: "Strongly support", "Tend to support", "No opinion either way", "Tend to oppose" and "Strongly oppose". Demographic variables included participants' age, sex and highest level of education attained. Smoking related variables included the heaviness of smoking index (HSI) [27] and the strengths of urges to smoke (SUTS).[27]

The level of support for each of the four policy statements was assessed by calculating the proportion of participants in each response category (strongly support, tend to support, no opinion, tend to oppose, strongly oppose). We further assessed whether participants' responses (support/no opinion/oppose) were associated with their age, educational status or heaviness of smoking. All responses were weighted to account for the survey design. We used the Chi-square test to test for associations, or the fisher's exact test where expected cell values were

less than 5. p-values <0.05 were considered statistically significant. All statistical analyses were conducted on STATA version 16.[28]

Results

The STOP survey was conducted between September 2019 and March 2020. We approached 97,345 households and 12,127 were found eligible. We randomly selected 7,225 smokers (1 per eligible household) and out of these 6,014 (83.3%) participated in the survey; rest were either unavailable (8.2%) or refused (8.6%). The respondents were predominantly male (98.5%). Response rates to the four policy statements were high, ranging between 98.7% (complete ban on tobacco in 10 years) and 97.5% (Increase taxes to pay for healthcare). The proportion of participants who strongly support all four policy statements was high: a ban on smoking in cars with minors (86.5%); a complete ban on tobacco in the next 10 years (82.1%); increasing legal age of cigarette sales to 21 (77.9%) and increasing tobacco taxes (68.1%) (Figure 1). For all but one policy statement (i.e. increasing tobacco taxes) support was higher among participants aged >35 years. An inverse association between participants' support and their educational status was observed across all policy statements- the inverse association was also observed with participants' heaviness of smoking across three of the four policy statements (raise legal age of cigarettes, increase tobacco taxes, ban on smoking in cars with minors) (Table 1).

Discussion

Our study suggests that most smokers in Pakistan are in strong support of more stringent tobacco control policies. Tested across a range of statements, this support was fairly consistent; being stronger for a ban on smoking in cars with minors and a complete ban on tobacco sales in the next 10 years, compared to increasing the legal age of cigarette sales to 21 and increasing tobacco taxes.

A limited number of studies from other LMICs have also reported support for strict tobacco control measures mainly smoking bans in workplaces, hospitality venues, shopping centers and transport terminals.[7,21,29,30]. This support has come from the general public as well as smokers, and is consistent with observations in HICs[13][31]. In our survey, the support was strongest for a ban on smoking in cars with minors, similar to that observed among smokers in New Zealand, Australia, the UK, Canada, Germany and the US.[10,13,20] We also observed overwhelming support for banning tobacco sales in the next 10 years -a tobacco endgame policy that has received support in Hong Kong[18] and in the UK.[19] The majority of smokers supported raising the legal age of tobacco sale to 21 years. Such policies have also received support among smokers in other high-income countries.[17,20] The level of support for taxing tobacco industry and utilise the revenues to support healthcare and anti-tobacco control measures in our survey was also comparable to the findings in similar surveys in Germany,[20] New Zealand,[15], England,[16] and Nigeria.[32]

Our study has several strengths. Firstly, it investigated smokers' opinions across a range of tobacco control policies in a South Asian country; it was also by far the largest study to be conducted on active smokers in Pakistan – for comparison, GATS surveyed 7,831 individuals which included only 177 active smokers. Our study sample draws similarities with smokers surveyed in GATS (Supplementary table 1) which suggests representativeness. We were also able to achieve a good response rate (83.3%) and a limited amount of missing data. The study does, however, have some weaknesses. We recruited fewer women than men even after allowing for their low prevalence of smoking (1.5%) in the urban population. We did not have non-smokers or ex-smokers to compare smokers' responses. Moreover, since smokers were interviewed, some of their responses may be subject to social desirability bias. This might explain a slightly higher level of support among less educated smokers than the ones more

educated. Lastly, for the statement on a complete tobacco ban, participants were not specified any underlying legal mechanism.

It is encouraging to see a high level of support among smokers for a range of tobacco control policies in Pakistan. The findings provide additional support for improving implementation of measures such as tobacco taxes, which can bring the country's tobacco control policy in line with international standards. It also highlights support for expanding smoking bans to private vehicles with minors, increasing the minimum age for cigarette sales to 21 years and considering tobacco endgame strategies for the future. Our findings would be valuable to the strong anti-tobacco advocacy network in Pakistan supported by the Bloomberg Initiative in lobbying for political support and countering the industry's pro-tobacco narrative. While the industry continues policy interference by amplifying public reaction [33], our findings should encourage legislators in Pakistan to introduce bold tobacco control policies without a fear of any widespread dissent among smokers or a lack of compliance.

What is already known: Smokers in high income countries tend to support tobacco control policies such as smoke-free laws

What important gaps in knowledge exist on this topic: The evidence indicating level of support for a range of tobacco control policies among tobacco users in low and middle income countries is limited.

What this study adds: Smokers in a low-middle income setting such as Pakistan strongly support strengthening and expanding the scope of tobacco control.

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Table 1. Association between STOP survey participants' responses to policy statements and their socio-demographic and smoking related characteristics

		Support/ Strongly support	Neither support nor oppose	Oppose/ strongly oppose	p-value		Support/ Strongly support	Neither support nor oppose	Oppose/ strongly oppose	p-value
Number of respondents		5551 (93.9%)	218 (3.4%)	172 (2.7%)			4939 (85.9%)	383 (6.1%)	544 (8.0%)	
Age										
≤35 years		1639 (90.7%)	88 (4.5%)	88 (4.8%)	<0.001		1477 (85.0%)	125 (6.5%)	183 (8.5%)	0.12
>35 years		3912 (95.2%)	130 (2.9%)	84 (1.9%)			3462 (86.4%)	258 (5.9%)	361 (7.8%)	
Level of education[Δ]										
No formal education	Complete tobacco bans in 10 years (n=5,941)	1905 (95.1%)	58 (2.8%)	41 (2.1%)	<0.001	Increase tobacco taxes to pay for healthcare (n=5,866)	1706 (86.8%)	114 (5.5%)	157 (7.7%)	0.06
Primary or equivalent (up to 5 years)		1272 (94.1%)	63 (4.4%)	23 (1.5%)			1116 (86.4%)	97 (6.0%)	117 (7.6%)	
		1434 (95.1%)	41 (2.3%)	49 (2.6%)			1257 (85.2%)	94 (6.1%)	161 (8.7%)	
Secondary or equivalent (6-10 years)		461 (87.8%)	27 (5.2%)	25 (6.9%)			422 (84.1%)	35 (7.8%)	52 (8.1%)	
		474 (91.0%)	29 (4.4%)	34 (4.6%)			436 (85.8%)	42 (6.3%)	55 (7.8%)	
		0 (-)	0 (-)	0 (-)			2 (39.2%)	1 (30.2%)	2 (30.6)	

	Raise legal age of				Ban on smoking in cars				
High school or equivalent (11-12 years)									
Graduation or above (>12 years)									
Missing									
Heaviness of smoking$^{\Delta}$									
Low		1496 (95.6%)	44 (2.7%)	33 (1.7%)	0.10		1378 (90.1%)	86 (5.0%)	91 (4.9%)	<0.001
Moderate or high		3725 (93.9%)	143 (3.3%)	111 (2.8)			3267 (84.8%)	251 (6.0%)	413 (9.2%)	
Missing		330 (86.2%)	31 (7.8%)	28 (6.0%)			294 (79.2%)	46 (12.1%)	40 (8.7%)	
Number of respondents		5539 (94.3%)	47 (3.6%)	149 (2.1%)			5699 (96.8%)	100 (1.6%)	102 (1.6%)	
Age										
≤35 years		1654 (91.3%)	95 (5.2%)	63 (3.5%)	<0.001		1711 (95.4%)	36 (2.1%)	53 (2.5%)	<0.001
>35 years		3885 (94.2%)	152 (3.7%)	86 (2.1%)			3988 (97.3%)	64 (1.4%)	49 (1.2%)	
Level of education$^{\Delta}$										
No formal education		1892 (95.1%)	76 (3.3%)	35 (1.6%)	<0.001		1921 (96.8%)	34 (1.7%)	27 (1.5%)	0.004

Primary or equivalent (up to 5 years)		1280 (95.6%)	53 (3.1%)	19 (1.3%)			1312 (97.5%)	24 (1.6%)	10 (0.9%)	
		1408 (93.5%)	66 (3.9%)	47 (2.6%)			1462 (97.0%)	26 (13.5%)	32 (1.6%)
Secondary or equivalent (6-10 years)		465 (91.5%)	23 (4.7%)	26 (3.8%)			487 (94.8%)	7 (2.07%)	17 (3.1%)
		489 (92.5%)	29 (4.5%)	22 (3.0%)			513 (96.0%)	9 (1.8%)	15 (2.2%)
High school or equivalent (11-12 years)		5 (100%)	0 (-)	0 (-)			4 (69.8%)	0 (-)	1 (30.2%)
Graduation or above (>12 years)									
Missing									
Heaviness of smoking[Δ]									
Low		1494 (95.9%)	49 (2.5%)	23 (1.6%)	0.005		1523 (98.2%)	22 (1.3%)	9 (0.5%)	0.003
Moderate or high		3707 (94.2%)	168 (3.6%)	105 (2.1%)			3824 (96.6%)	67 (1.6%)	70 (1.8%)
Missing		344 (94.7%)	30 (3.3%)	21 (2.0%)			352 (92.8%)	11 (2.7%)	23 (4.5%)

* all relative frequencies (%) are weighted to account for survey design

[Δ] p-values based on non-missing data only