COVID-19 and a temporary ban on tobacco sales in South Africa: impact on smoking cessation

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ABSTRACT

Objective To evaluate the impact of COVID-19 plus a temporary ban on the sale of tobacco and vaping products, on smoking cessation in South Africa, by reviewing research surveys conducted while the prohibition was in place.

Method An internet search was conducted on 20 August 2020, using the key words: 'South Africa', 'survey', 'poll', 'smoking', 'cigarettes', 'tobacco", 'vaping', and 'COVID-19'. There were no language restrictions. Additional studies were identified through press reports. Only studies conducted between March and August 2020 were included.

Results Four surveys which reported on smokers quitting behaviour were included. None had been published in a peer reviewed journal. The heterogeneity of the data did not allow pooling. Support for the ban on tobacco sales amongst smokers varied from 6% to 36%. Similarly, there were inconsistent findings about quitting behaviour. Nationally, between 16% to 49% of smokers reported not smoking during the ban.

Conclusions Cigarette smoking in SA dropped during the 2020 COVID-19 lockdown, but the estimates were inconsistent, probably because of survey design. There was evidence that the lockdown achieved the fastest rate of decline in smoking prevalence in the country's history. The true extent of the fall though is uncertain. Prevalence studies post lockdown, using probability sampling, may more accurately show how many people quit smoking.

INTRODUCTION

South Africa's response to the COVID-19 was unique. A ban on the sale of tobacco and vaping products was included in the country's initial lockdown regulations.[1] The aim was to decrease both disease severity, among infected smokers, and the demands on the health system.[2 3]

For 5 months, from March 27 to August 16 2020, tobacco and vaping products could not be legally sold within the country. The ban was unexpected—creating challenges and opportunities for smokers and vapers. Smokers could maintain or change consumption levels—buying cigarettes illegally, if necessary—or stop smoking.

Public perceptions of the ban and the behaviour of smokers were monitored by several surveys but these produced inconsistent data. Despite this, the findings of some surveys were prominently reported in the media,[4] and some also featured in litigation between the tobacco industry and the government.[3 5]

This report assesses surveys conducted in South Africa during the sales ban to evaluate the impact of the prohibition and COVID-19, on public perceptions of the ban and on smoking cessation behaviour.

METHODS

A search was conducted on 20 August 2020, using two internet search engines (Duck-a-Go-Go and Google), with the search terms: 'South Africa' AND 'survey' OR 'poll' AND 'smoking' OR 'cigarettes' OR 'tobacco" OR 'vaping' AND 'COVID-19' OR 'COVID-19 19'. There were no language restrictions. On the same day, Google News was also searched selecting "English (South Africa)" as the region and the search terms 'survey', 'smoking', and 'COVID-19' to identify press reports of surveys. The websites of any surveys so identified were then traced through the internet.

RESULTS

Identified surveys

A total of seven surveys were retrieved through the searches and of these four, which reported on quitting among smokers, were included in this study. Two surveys were from the Research Unit on the Economics of Excisable Products at the University of Cape Town (REEP),[6 7] another from technology company, M4Jam,[8] and one from market research company, Ask Afrika.[9] The participants in all of the studies were adults aged 18 or over (table 1).

The two REEP studies were funded by the African Capacity Building Foundation, Ask Afrika was independently funded, and the M4Jam study did not state its funding sources.

Sampling

All the surveys used non-probability sampling. Two used convenience sampling (REEP1, and REEP2) and two used quota samples (Ask Africa and M4Jam). The REEP1 survey weighted data to achieve representativeness, while REEP 2 reported unweighted data.

The M4Jam and AskAfrika surveys stated that the samples were demographically representative of the general population. The claim from M4Jam could not be verified as insufficient data were provided. The AskAfrica sample approximated the proportions of the general population in terms of race and gender.

The REEP studies acknowledged that its samples were not representative of South Africa's smoking population. Females and white people were over-represented while males and black Africans were under-represented. There were also substantially more wealthier people in the sample than in the general population.

Questionnaires

The AskAfrika survey was general, including questions on other topics in addition to cigarette

Table 1 Characteristics of surveys conducted during the sales ban in South Africa, and percentages who had stopped smoking

Survey title	Organisation	Survey date	Sample size N	Language of the survey	Type of survey	Recruitment method	Respondents	Question	Response
Lighting up the illicit market	Research Unit on Economics of Excisable Products. (REEP1)	29 April–11 May	12 204	English Afrikaans	Online	Social media, petition site, earned media	Smokers	*Have you successfully quit smoking during the lockdown?* (Yes/No)	16% Yes (7%* Yes)
M4Jam	M4Jam	Not stated Report on 4 June.	2013	Not stated	Panel	Online registration to community	Smokers	*Had stopped smoking during lockdown.* (Exact question not stated.)	49% Yes
Smoking and quitting behaviour in lockdown South Africa.	Research Unit on Economics of Excisable Products. (REEP2)	4–19 June	23 631	English	Online	Social media, petition site.	Smokers	*Have you successfully quit smoking during the lockdown?* (Yes/No)	9%* Yes
The Ask Afrika COVID-19 Tracker Week 12 Results	Ask Afrika	16–21 June	590†	English	Quota sample, recruited online	Computer-assisted telephonic interviews (40% of sample) and online (60%).	Smokers and non-smokers.	*Do you smoke tobacco products?* (Before lockdown/During lockdown/No).	18% Before lockdown 10% During lockdown

*Unweighted data.
†The same question was sometimes repeated in different weeks so the number of respondents answering a question could be higher than that stated.

smoking, while the REEP and M4Jam studies focused solely on cigarette consumption and the market for cigarettes. As none of the included surveys reported on pipes, cigars or non-combustible products, this report only assesses cigarette usage. Smoking status was self-categorised and no study defined the terms "quitting" or "stopping smoking".

Full questionnaires were available in the REEP reports but not for the other surveys, which were less transparent in providing information on methodology, data documentation, or reporting problems associated with questionnaire design. The non-REEP studies were not publicly available except in summary form or as a press release and requests for additional information were unsuccessful.

Perceptions of the ban on tobacco sales

In the general population, there was overall support for the ban on tobacco sales. The AskAfrika survey found that 63% of respondents agreed that "Not being allowed to buy tobacco products make sense", and 60% also agreed that the "ban on the sale of tobacco is important". The reasons for considering the ban as important were: "it helps limit the spread of COVID-19" (51%); "it is good for our health" (29%); "it helps people to stop smoking" (14%); and "I am able to sell tobacco products at a premium" (3%).

Among smokers, both the REEP studies found strong opposition to the ban, with 85% and 94% against it in REEP1 and REEP2 respectively. A petition to lift the ban was signed by over 500 000 people.[10] In contrast, the M4Jam study reported that 36% of smokers agreed with the banning of cigarettes.

There were large differences in support for the ban by race. In REEP1 49% of black Africans were supportive of the ban compared with 7% of white people.

Quitting behaviour

Ask Afrika found that 44%, and M4Jam that 49%, of smokers reported they had quit. In REEP1 about 16% of the weighted sample had quit. If unweighted data are used, then 7.4% of smokers quit in the first survey and 9.0% in the second REEP survey. Of those who quit 88% and 71% in the first and second REEP studies, respectively, indicated that they would remain quit.

There were large racial and gender differences in stopping smoking, with black Africans having the highest quit success (36% for males and 48% for females) and whites having the lowest quit rates (3.7% for males and 1.8% for females).[7]

DISCUSSION

The surveys reported a threefold difference in estimates of cessation (16% to 49% quit) and a sixfold variance in support for the ban among smokers (6% to 36%). If surveys targeting the same population, at similar times, produce estimates that vary greatly from one another this indicates potential defects in design, especially if the samples do not adequately represent important groups in the population.

The AskAfrika and M4Jam surveys stated that their samples were nationally representative but the latter did not provide sufficient data for the claim to be verified. The REEP studies, on the other hand, acknowledged that the surveys were not representative. REEP1 tried to correct the problem by weighting the data but this technique will not necessarily correct the bias.[11]

In both the REEP studies black African males were grossly underrepresented (13% in REEP1 instead of 64% nationally), while white females were over-represented (27.5% in REEP1

instead of 4.9%) . Given that the REEP studies found that black men were more likely to quit on average, and that white women were least likely to quit[7] the risk of bias was substantial in the REEP studies.

Additionally, the REEP studies were particularly susceptible to self-selection bias, as some respondents were recruited from a website that opposed the ban.[11] Such individuals may have been more motivated to participate in a survey than those who felt less strongly about the ban.

A study design producing skewed samples leads to misleading findings, if applied nationally. It is likely that the REEP studies greatly underestimated national support for the ban and the extent of quitting. Further, despite the recognised limitations of the REEP surveys, this did not prevent the studies from concluding that the ban was a failure and to call for it to be lifted.[6 7]

Concurrent validity

An alternate method of predicting changes in behaviour is to use economic modelling. Economic theory suggests that quitting smoking is a function of income and price. A 10% price increase reduces long-term prevalence by at least 2%.[12] During the ban, poverty as well as cigarette prices increased in South Africa. The Ask Africa survey found that a third of respondents did not have sufficient food daily. REEP 2 reported that the average price of illegally bought cigarettes during the ban was 250% higher than the price prelockdown. This suggests that the 2.5-fold increase in price should, in itself, have produced a 50% decrease in prevalence. The M4Jam and Ask Afrika estimates were consistent with this prediction but the REEP estimates were very substantially lower.

There may also have been a substantial decline in smoking among the young as they are particularly price sensitive[12] but this was not studied.

Implications

The health threat from COVID-19 and the prohibition on tobacco sales produced a historically unparalleled rate of decline in smoking in the country. In mid-2020, the South African adult population was 42.57 million,[13] and assuming that 19.26% of adults smoked[14] this represents about 8.2 million smokers. The lowest estimate of quitting smoking during the lockdown was recorded by REEP 1 which found that 16% (weighted) of smokers quit. This translates into about 1.3 million smokers.

Previously, the fastest fall in smoking in South Africa occurred between 1994 and 2012, when strong tobacco control measures were enacted, and adult prevalence fell from 32% to 16%.[15] In an 18-year period, about 2.4 million people stopped smoking, representing an annual fall of 0.9% in prevalence, compared with a reported minimum of 16% in 5 months during the lockdown.

Encouragingly, REEP 2 reported that 71% of those who quit claimed they would not resume smoking post lockdown. However, smoking is a chronic relapsing condition and inevitably many will return to tobacco usage in the foreseeable future. Most relapse occurs during the early stages of a quit attempt[16] and the long duration of the ban may make it more likely that people will stay quit. A continuing economic downturn will also reduce smoking rates.

Compliance with the ban could have been improved if the government had better communicated the reasons for the ban, and if enforcement was stricter. The tension between health measures which are coercive and civil liberties could have been reduced if government had better explained its decisions and the science supporting the ban.

Muddled policies and poor enforcement also contributed to an increase in illicit trade. South Africa is not a party to the WHO Protocol to Eliminate Illicit Trade in Tobacco Products, and the illicit trade in cigarettes has been rife for over a decade. Moreover, the government regards the industry as a part of the solution. In a 2018 media statement, the South African Revenue Service stated it had met with tobacco industry associations 'to discuss and agree on collaboration among them to combat illicit trade in cigarette and all tobacco products'.[17]

Data limitations

Apart from the REEP studies, all the other surveys provided scant details, and in the case of M4Jam almost no particulars, of the survey methods. The lack of transparency made it difficult to compare data, or assess its robustness and accuracy. The findings of the surveys must therefore be regarded with caution.

CONCLUSION

The 2020 lockdown provided a unique opportunity to study smokers' responses to the market disruption created by a sudden prohibition on cigarette sales. The data showed that the prevalence of cigarette smoking declined and there was evidence that this was the fastest fall in smoking prevalence in the country's history. The extent of the fall in smoking is uncertain, because of methodological limitations and reliance cannot be placed on any single study. Better communications from government on the rationale for a ban on sales, and a clamp down on illicit sales may have increased compliance. Prevalence studies post lockdown, using probability sampling, may show more accurately how many quit, how many relapsed and the size of the illicit market.

What this paper adds

► The impact of a ban on tobacco sales on cigarette smoking behaviour is unclear.
► Four unpublished surveys from South Africa estimated that between 16% to 49% of smokers quit during a 5-month ban on tobacco sales. The threefold variance in outcomes is likely due to the characteristics of the respondents studied.
► Using the lowest estimate of quitting, the ban resulted in the fastest fall in smoking prevalence in the country's history.

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