What Are the Effects of Tobacco Policies on Vulnerable Populations?
A Better Practices Review

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ABSTRACT

Background: While comprehensive tobacco policies have reduced the prevalence of smoking in Canada, some groups remain vulnerable to tobacco use and display high rates of smoking. This article reviews three types of tobacco policies – tax and price, smoking location restrictions and sales restrictions – and examines the consequences for Aboriginal people, youth and low-income people.

Methods: A better practices review model was used to assess the strength of studies published between 1990 and 2004 that examined the effects of these tobacco policies on the three vulnerable populations of interest. A total of 72 studies were assessed and 42 judged medium or high strength. A gender-based and diversity analysis was applied to assess the differential impacts on females and males and/or diverse characteristics within these populations. Intended and unintended consequences were examined.

Findings: Few studies assessed the potential or differential effects of tobacco policies on the three selected populations. In these, it was difficult to disentangle the effects of each policy in a comprehensive tobacco control environment, and there is need for improved indicators and greater attention to sex and gender analysis.

Conclusions: Research is required to measure the intended and unintended impacts of tobacco policies on populations vulnerable to tobacco use. There are problems in assessing these studies that could be resolved with more precise indicator development. An equity-based framework for assessing the effects of tobacco policies is needed that is conceptually linked to health determinants and inequities. The article concludes with a set of recommendations for research, evaluation, policy and ethics arising from this review.

MeSH Terms: Tobacco; policy; gender; low-income population; adolescent; Indigenous population

La traduction du résumé se trouve à la fin de l'article.

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Comprehensive tobacco control policies have been successful in reducing tobacco use in many developed countries, including Canada. These policies usually involve population-level implementation and analysis, and include policies that limit advertising, increase price and tax, establish smoking restrictions, and ‘denormalize’ tobacco use. The success of this approach has been measured in population-based statistics, reflecting overall encouraging trends in initiation, maintenance and cessation. From 1965 to 2004, the percentage of Canadians who smoke has declined from about 50% to 20%, reflecting the impact of increased tobacco control and the comprehensive approach.1,2

However, in Canada and many developed countries, smoking is now clearly associated with disadvantage and inequity.3-5 Although 20% of the Canadian population smokes,6 certain subpopulations have higher prevalence, including Aboriginals (70%),6 low-income people (23%),7 and homeless people (69-75%).8,10 These patterns are also gendered, with females and males exhibiting differences in tobacco use. In addition, tobacco advertising received via US media sources increasingly targets vulnerable groups (youth, women, ethnocultural groups, gays and lesbians, etc.).

Comprehensive tobacco control policies clearly improve overall population health, including that of vulnerable groups. However, the design and implementation of broad-based policies do not accommodate inequities or adjust according to disadvantage. Further, given the limited research into the differential impacts of tobacco interventions among disadvantaged people,11 there is little evidence on which to base future development of tobacco control policies.

Populations vulnerable to tobacco use

While the conceptual frameworks underlying health inequalities research remain underdeveloped,12 “vulnerable” is a term reflecting a range of elements of social and economic life that contribute to or indicate risk of poor health. It reflects concepts such as disadvantage, inequity and social exclusion and is exacerbated by aspects of social position and the social determinants of health. ‘Social position’ refers to the
multiple locations that an individual may occupy, reflecting the interlocking structures of inequality. In this article, vulnerable groups are those whose life circumstances or group membership reflect inequities or norms that make them more likely to use tobacco and less likely to successfully quit.

These concerns are forefront in global tobacco control. In the preamble to the Framework Convention on Tobacco Control (FCTC), the authors were “deeply concerned” about indigenous peoples’ use of tobacco, and “alarmed” about the increases in girls’ and women’s use, gender-specific risks, and the escalation in smoking among children and youth. These concerns permeate Article 4 of the FCTC, which states that the participation of indigenous peoples, the recognition of gender-specific risks, and the engagement of civil society are key principles in developing appropriate tobacco control policies.

For these reasons, it is important to consider the impact of tobacco use programs and policies on vulnerable and disadvantaged groups. In this article, derived from a larger report by Greaves et al., we assess the effectiveness of three aspects of tobacco control policy (sales restrictions, taxation and pricing, restrictions on location of smoking) and the extent to which these policies have differential impacts on three vulnerable populations: female and male smokers (youth, Aboriginal peoples and people living on low income). In so doing, we acknowledge multiple social locations that individuals may occupy.

**METHODS**

A comprehensive review of the literature was undertaken to identify studies on the effectiveness of three tobacco control policies: taxation of tobacco products, restrictions on sales, and restrictions on locations where smoking is permitted. A number of databases (PubMed, PsychInfo, Women’s Studies International, LexusNexis, Ingenta, ProQuest, Health Canada) were used to identify empirical literature published (or conducted, if unpublished) between 1990 to July 2004. It was not possible to determine with certainty whether funding had been received from the tobacco industry to carry out any of the research included in this review. Although many experimental articles explicitly stated that they had not received support from these sources, it is not known whether other published research could have been industry-funded. Inclusion criteria were: i) exploration of the impact of at least one of the three aspects of tobacco control policy of interest; ii) a test of one of the outcome measures of interest: tobacco initiation or cessation, prevalence of smoking, number of tobacco sales, number of quit attempts, intent to quit, stage of change; and iii) the study population included either the general population, or one of the vulnerable populations of interest: youth, Aboriginal peoples, people living on low income. The review focussed primarily on evidence from Canada, United States, Australia and United Kingdom.

A Better Practices model was applied to systematically assess evidence of the effectiveness of each policy. Each study was independently evaluated by two of the researchers, using criteria such as suitable control group(s), appropriate measures, outcomes, statistical analyses, attrition rates, and sources of bias to assign a study score. Each study was classified by study design, with each design representing a different strength as a source of evidence (see Appendix). Once classified, each study was further rated as high, medium, or low level strength. To determine the level of strength, each study score was divided by the highest possible score for that design and multiplied by 100 to calculate a percentage (i.e., Study Score/Maximum Score x 100). Level of strength was classified as follows: High >85%; Medium 70-84%; Low <69%. These ratings were then discussed and agreed upon within the larger team.

Gender-based analysis (GBA) was carried out in order to gain broader understanding of the impact of tobacco control policies. GBA is a process whereby the differential impacts of policies, programs, legislation, and research are assessed for women and men, girls and boys. By doing GBA, social processes are considered, which facilitates policy responses that are both informed and equitable. Diversity analysis is a component of GBA that goes beyond gender to examine differences in socio-economic status, ethnicity, education, physical ability, sexual orientation, culture, age, and geographical location.

This articles focusses on areas where there is a dearth of research or conflicting results, and explores variations between studies. Where there were multiple studies that presented similar findings or well-established results, the article does not go into detail.

**KEY FINDINGS**

A total of 72 articles were reviewed and 42 were assessed as medium to high strength (see Appendix).

**Sales restrictions**

Twenty-four studies of the effects of sales restrictions were reviewed, of which thirteen were rated as medium or high. Sales restrictions stipulated by Canada’s Tobacco Act, pertain to minimum age of requirement, point-of-sale advertising and health warnings, and are generally aimed at youth. Some provinces have additional restrictions, addressing issues such as fines for selling to minors, industry signage and promotions, and licencing of tobacco retailers. The Federal Tobacco Control Strategy aims to have 80% merchant compliance rate and Health Canada conducts annual evaluations. Sales restrictions were found to be an effective tobacco control measure in reducing the number of successful purchase attempts by minors when minimum age requirements were enforced. In addition, these restrictions appear to slow the progression from being an occasional to an established smoker among those youth who do use cigarettes. However, there is also evidence to suggest that these restrictions do not affect the general availability (i.e., non-commercial sources) of cigarettes for adolescents who smoke, and thus are not likely to affect the overall prevalence of teen tobacco use. Continuous enforcement is required to ensure high rates of retailer compliance.

It was difficult to determine any differential impacts of sales restrictions on diverse groups of adolescents due to study design and paucity of data. One exception is a study by Klonoff and colleagues who found that Latino children were more likely to be sold cigarettes than White children, but older Black children of both sexes were sold cigarettes most often. In a study by Castrucci et al., girls were 58% more likely to be able to acquire cigarettes...
by non-commercial sources than boys.28 How such restrictions may differentially affect Aboriginal youth is unknown.

Location restrictions
Thirty studies of location restrictions (in workplaces, homes, schools) were reviewed, of which 19 were rated as medium or high. Notably, there is minimal literature concerning the impact of location restrictions on the three vulnerable populations of interest. However, studies suggest that complete workplace smoking bans have a moderate effect on smoking prevalence and partial bans have a smaller effect.29-31 There is promising evidence that workplace bans may be associated with decreased smoking initiation among teens.32 Self-imposed smoking bans in the home for adult smokers may have a protective effect on smoking initiation and maintenance among adolescents,30,32,33 particularly girls.34 Adults also benefit from home bans by smoking fewer cigarettes per day and showing a greater interest in quitting.35 Any differential impacts on low-income earners and Aboriginal peoples remain largely unexamined.

Five articles on school smoking bans met our inclusion criteria and two were rated as medium (the rest rated as low). Results were inconsistent. Wakefield et al.35 reported that bans lead to lower smoking prevalence among high-school students, yet Lewit et al.36 found no significant impact. Many unintended consequences of these policies have been identified, such as increased social stigma and increased visibility of smoking.37-40 Policy researchers have not considered gender and diversity, although these factors influence use of public and private space. For example, low-income women living in high-density areas may have limited access to safe outdoor space for smoking. Unintended consequences have been ignored, including increased social division between smokers and non-smokers31-45 and the phenomenon of “compensatory” smoking after leaving a restricted area.46

Pricing and taxation
Eighteen studies on pricing and taxation were reviewed, in which ten were rated as medium or high. There is clear evidence that higher price, via increased taxes, leads to substantial reductions in smoking.47 In Canada, tobacco taxation was decreased in 1994 in response to increased cigarette smuggling, but the prevalence of smoking continued to decline in spite of the decreased tax, those provinces with higher provincial tax on cigarettes saw a higher rate of decline.48 However, studies suggest that increases in tobacco taxes have differing levels of effectiveness depending on the subpopulation under consideration. Among adolescents, tax increases reduce smoking initiation and cigarette consumption, but do not necessarily increase rate of cessation.49,50,51-57 There is inconclusive evidence as to whether women or men are more sensitive to cigarette tax increases. Some studies suggest that women are more responsive to increased price and taxation,58,59 while a Canadian study found that women and men are equally responsive.60

There is little evidence about how smoking behaviour among Aboriginal peoples might be affected by tax increases. Tobacco is sold tax-free on-reserve; however, Aboriginal peoples living off-reserve do pay tobacco taxes.

There are several problems in assessing the effects of tobacco policy (see Table I). First, it is difficult to draw out the precise effects of each policy as they are often concurrently (and variably) implemented at various levels of government according to social and legal environments across jurisdictions. Second, there is a lack of a “gold standard” for evaluating the effectiveness of policy and appropriate study design varies with the type of policy. Third, in several studies, we questioned whether appropriate indicators were used to assess the policy’s effectiveness. Fourth, many researchers failed to report sex-disaggregated data or perform GBA, thus making it impossible to determine how the outcome(s) may differ for women and men. Finally, the majority of the studies fail to consider the unintended consequences of tobacco con-
CONTROL POLICY. FOR EXAMPLE, SALES RESTRICTIONS DETER YOUTH ACCESS TO CIGARETTES VIA COMMERCIAL BUT NOT SOCIAL VENUES. LOCATION RESTRICTIONS MAY CONTRIBUTE TO HIGHER VISIBILITY OR DELAYED COMPENSATORY SMOKING. SIMILARLY, TOBACCO TAX AND PRICE INCREASES MAY AFFECT HOUSEHOLD EXPENDITURES IN LOW-INCOME FAMILIES. WHILE THESE ISSUES DO NOT DIMINISH THE BROAD-BASED POPULATION EFFECTS OF TOBACCO POLICIES, THEY ARE IMPORTANT FOR DIRECTING FURTHER RESEARCH AND POLICY THAT WILL ADDRESS THE IMPACT ON VULNERABLE POPULATIONS.

CONCLUSION

Addressing the impact of tobacco policy on vulnerable populations in Canada is urgently required and should be a factor in designing future research, evaluation, policy and interventions. Future tobacco control policies would be enhanced by an understanding of the structural variables and pressures and how tobacco use is related to overriding health inequities and determinants. These approaches would benefit from engagement with smokers and vulnerable communities and should be informed by a social justice and/or ethical framework. This shift must include a gender and diversity framework to fully investigate and understand the structural and psychosocial issues connected to ongoing tobacco use.

Table II contains recommendations from this review of tobacco policy and vulnerable populations, addressing the difficulties of accurately assessing separate policies in a comprehensive tobacco policy environment, as well as suggesting better practices in measuring and evaluating policy with respect to vulnerable populations. While information and research from other countries is vital to our understanding of the trends and effects regarding tobacco use on vulnerable populations, evolving better practices in Canada must rest on assessing national research and analysis. Devising and evaluating specific better practices in tobacco programs and policies will require ongoing adaptation of these data.

REFERENCES


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TABLE II

Recommendations

Research

1. Develop better measures of the real price of cigarettes, taking into account inflation adjustments and more precise assessments of discretionary and disposable income.

2. Develop more accurate link between measuring sales and amount/numbers of tobacco units and estimating prevalence in youth.

3. Develop measures to differentiate traditional and non-traditional tobacco use among Aboriginal peoples.

4. Develop Requests for Applications (RFAs) from funding agencies to elicit more research on the full spectrum of effects of tobacco policies on vulnerable populations.

5. Develop an Aboriginal-specific policy research agenda on tobacco use.

6. Increase the inclusion of gender and diversity variables in all research on tobacco policy.

7. Expand existing surveillance data regarding tobacco use among ethnocultural groups in Canada.

8. Enhance quantitative analyses with qualitative investigations in all tobacco policy areas.

9. Develop standards for assessing research designs used to investigate the effects of policies in tobacco control.

Evaluation

1. Develop an evaluation framework for tobacco policies that includes measures of equity and places tobacco policy in a social justice framework.

2. Develop new and additional evaluation measures to reflect the concepts of latent and unintended consequences of tobacco policy (such as social access, social stigma, compensatory smoking, etc.).

3. Develop new measures of the impact of tobacco policies on the broad determinants of health (such as income, housing, etc.).

Policy

1. Assess the impact of the current tailored price and tax policy affecting Aboriginal people on reserve communities and Aboriginal people and non-Aboriginal people off reserve.

2. Assess the impact of the current policies regarding sales to minors with respect to social access.

3. Assess the feasibility of developing tailored tax and price policies for groups such as low-income smokers that might include offsetting high prices with vouchers for food and nicotine replacement therapies.

4. Investigate the issues related to earmarking tax revenue for health promotion efforts geared to vulnerable populations.

Policy Development

1. Engage with specific communities (Aboriginal, poverty advocacy, women, youth advocacy, etc.) regarding the appropriateness and efficacy of current tobacco control policies and the further refinement of same.

2. Develop community collaboration models that include smokers in assessing and developing tobacco policies and their implementation.

Ethics

1. Develop an ethical framework for the Canadian tobacco control program that recognizes both smokers and non-smokers as beneficiaries of tobacco policy.

2. Institute an ongoing requirement for comprehensive gender-based analysis and a diversity analysis of all future tobacco control program and policy development.
RÉSUMÉ

Contexte : Les politiques antitabac intégrées ont réduit la prévalence du tabagisme au Canada, mais certains groupes demeurent vulnérables et affichent des taux de tabagisme élevés. Notre article examine trois types de politiques antitabac (les politiques fiscales et de prix, la restriction des lieux où il est permis de fumer, et les politiques de restriction des ventes de tabac) et leurs conséquences pour les Autochtones, les jeunes et les personnes à faible revenu.


Constatations : Peu d’études évaluent les effets possibles ou différents des politiques antitabac sur les trois populations sélectionnées. Dans ces études, il a été difficile de démêler les effets de chaque politique dans le cadre général de la lutte contre le tabagisme : de plus, il faudrait trouver de meilleurs indicateurs et accorder plus d’attention à l’analyse selon le sexe et à celle des rapports entre les sexes.

Conclusions : Il faudrait pousser la recherche pour mesurer les répercussions prévues et imprévues des politiques antitabac sur les populations vulnérables au tabagisme. Les problèmes d’évaluation des études publiées pourraient être résolus avec des indicateurs plus précis. Il faudrait un cadre d’évaluation des effets des politiques antitabac qui soit fondé sur l’égalité et qui soit conceptuellement lié aux déterminants de la santé et aux inégalités sur le plan de la santé. À la fin de l’article, nous formulons un ensemble de recommandations pour la recherche, l’évaluation, les politiques et les questions éthiques découlant de notre examen.


Implementation Research: A Synthesis of the Literature

http://nirn.fmhi.usf.edu/resources/publications/ Monograph/

Despite significant advances in evidence-based practice, researchers, policy-makers and clinicians alike remain bedeviled by the problems of turning the evidence into sustainable programs. It is all very well to say that the evidence has been gathered in, but how can it be implemented? The synthesis of the implementation literature by Fixsen and colleagues (available at the web address above) is a timely contribution to help address this important and neglected question.

The review is methodologically sound and commendably inclusive. Its scope and multidisciplinary nature are distinct strengths. The authors reviewed almost 2,000 citations from nine health and non-health databases. From this initial pool, over 700 articles representing an eclectic mix of disciplines (as far ranging as agriculture and engineering) were included in a comprehensive content analysis and synthesis. The authors recognize, correctly in our view, the significant commonalities across disciplines in turning research into practice, and the potential for integrated and cross-cutting service delivery (e.g., change in adolescent mental health would necessarily involve public health, education, juvenile justice and child welfare).

They propose a transactional model of implementation, from early adoption to sustainability that acts to enhance coincidence of interests, mutual support and integration. They also usefully differentiate between intervention and implementation processes, and distinguish degrees of implementation from paper to process to performance.

Of course, articulating a model does not always make things simpler. But it serves us well by revealing the complexities of implementation, including different terminologies of ‘implementation’ to overcome. The report also identifies four principal characteristics of successful implementation (p.vi) related to:

• The selection, training and coaching of clinicians;
• Organizational infrastructure, including process and outcome measures;
• Full participation of communities and consumers; and
• Supportive political and regulatory environments.

Sustainable implementation requires the reflexive interplay of all these elements. Without any one of these components, programs would struggle to survive. All are necessary, but individually insufficient.

The authors offer a number of recommendations for policy-makers, researchers, and ‘purveyors of well-defined practices and programs’ that may take implementation research out of its infancy and assist with ‘real world application’. They speak of developing ‘communities of practice and science’, but perhaps an integration of these into a community of ‘practice science’ or ‘implementation science’ is also a constructive way forward.

The synthesis is relevant to a wide readership, from policy decision-makers to researchers to on-the-ground clinicians. It would be a valuable resource to senior undergraduate or graduate students. The review presents the material logically. It does not over-simplify, nor complicate essential elements, and gives a framework for answering the trickiest question of them all: how is it done?

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