

The Effect of Smoking on
Peer Evaluation
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1991-1992

Running Head: Smoking Evaluation

Abstract

The effect of smoking on peer perceptions was investigated. Subjects were 80 students from two Algoma district high schools and twelve students from Algoma University. The subjects ranged from age 14 to 25. Subjects evaluated ten picture slides of peer models on three scales: attractiveness, trustworthiness and likability. Contrary to what was expected, analysis of covariance showed that the youngest subjects rated peer models who smoke more negatively than the older subjects. The results indicated that smoking models were rated on the three scales as less positive than the non-smoking models for the two younger age groups. Subjects, aged 25, rated smokers as more positive compared to non-smokers on the trustworthiness scale. The low number of subjects who smoke prohibited comparisons between subjects who smoke and subjects who do not smoke. Results indicated that in general most students, in the Algoma region, interpreted smoking as a less positive behavior.

Introduction

The use of tobacco products has become a major health problem in Canada and the United States of America. According to Health and Welfare Canada, a regular smoker is anyone who smokes at least one cigarette a day (Statistics Canada, 1991). Cigarette smoking is a health-damaging behavior. Agencies such as The Canadian Lung Association have developed strategies to educate the public in regards to the dangers of tobacco products use. According to the Addiction Research Foundation and the Canadian Lung Association, there are many life threatening consequences associated with the use of tobacco (M. Robb; personal communication, Nov. 19, 1991). With the development of new medical technologies, doctors are better able to diagnose and treat illnesses that have been found to be associated with smoking. Illnesses that have been linked with smoking are cancer, emphysema, asthma, heart disease and acute bronchitis. These types of diseases are usually incurable. There

has, therefore, been a push towards education and help programs that assist those who wish to quit smoking.

There are many special issues pertaining to women who smoke and medical problems they are susceptible to. It has been determined there are dangers associated with smoking and pregnancy that are often irreversible. Some examples of the special problems that women encounter would be the increased risk of heart attack if taking birth control pills, earlier onset of menopause, increased risk of osteoporosis and cervical cancer (Statistics Canada, 1991). Special issues pertaining to reproductive processes include: spontaneous abortion, lower birth weight babies, placental insufficiency (increased levels of carbon monoxide) and behavioral problems in offspring such as hyperactivity, short attention span and low scores on reading and spelling tests (Canadian Cancer Statistics, 1991). Thus women are particularly at risk.

It has been found that making the people aware of the hazards associated with smoking has succeeded in lowering the numbers of people who smoke for those over age 21 (Norman, Tedeschi, 1989). Bud (1980) found that smokers in general do not believe that the health

hazards of smoking are relevant to their decision to smoke. There has been little decline in adolescent smoking compared to that of other age groups. Adolescents continue to assign low health risk to smoking (Miller & Slap, 1989). The sex difference found in years past (ie., males being more likely to smoke than females) is no longer apparent in recent studies (Canadian Council on Smoking and Health, 1989). It has been found that there are more women smokers than males for those below the age of 25 (see Figure 1) (Health and Welfare Canada, 1991).

Insert Figure 1 about here

As well in the last six years, it has been found that the total number of women who smoke has increased more than the number of men who smoke (see Table 1) (ibid).

Insert Table 1 about here

It has also been found that the number of men who intend to quit is greater than the number of women who are quitting (see Table 2) (ibid).

Insert Table 2 about here

Studies have shown that the rate of smoking in women has not declined as rapidly as the rates for men (Warner, 1986). Adolescent women at this point are smoking or continuing to smoke more than are men.

In a studies about image attributions and smoking intervention it was determined that young persons show a positive attitude towards cigarette smoking as they increase in age (Botvin, Botvin, & Baker, 1983). By 1986, there was a 50% increase in the number of adolescent smokers as compared to 1980, and since then there has been slow decline that at present has levelled off (Norman & Tedeschi, 1989). Adolescents, therefore, see smoking as an asset. Smoking is a sign of maturity, independence, sophistication and glamour (Burton et al, 1989). Tedeschi and Norman (1989) contended that a particular identity will be valued if it is instrumental in achieving certain rewards or avoiding punishment.

Studies have been conducted to determine the role of social attitudes with regard to cigarette

advertising and attitude surveys. Tobacco advertisements have been criticized and even banned because they are targeting women and youth through the appealing images they portray and the idea that smoking is glamorous (Burton, Sussman, Hansen, Johnson & Flay, 1989). There are still large numbers of people still smoking even though there are health warning labels on tobacco products and bans on advertising (Shopland & Brown, 1987). Loken and Howard-Pitney (1989) found that adult women (smokers and nonsmokers) rated advertisements most attractive and persuasive if they contained average looking models and a general warning label. Least attractive were those advertisements that had a model and a specific warning label. So why do adolescents blame peers for their smoking behavior? Either a peer is attractive or less attractive, and adolescents often fail to see the health hazards associated with smoking. The specific warnings by parents, teachers, and the media may lead to a less effective anti-smoking campaign if adolescents see it the same way women see advertisements. The hazard issue tends to be more salient for the non-smoker and the pleasure issue of smoking more salient for the

smoker (Bud, 1986). Smoking behavior isn't being stopped by bans or warning labels. One must look at the causes of smoking behavior.

There are basically three models that can be used when studying cigarette use. The three models involve attitudes of the individual in the decision to smoke and smoking behavior. There is the Theory of Reasoned Action which explains that the pleasures associated with smoking contribute to a decision to smoke (Ajzen & Fishbein, 1970). There is the Theory of Images which explains that the decision to smoke is determined by the number of positive images the individual ascribes to smoking (Burton et al., 1989). There is the Developmental-Stage Model which shows that the individual tries smoking, and receives positive feedback resulting in the development of positive attitudes about smoking (Hirschman & Leventhal, 1989).

These theories are somewhat opposite to Johnson, Bachman and O'Mally's survey. The survey was contrary to most of the theories that have been tested to date. It was found that since 1981, those who smoke are rated more negatively than those who do not smoke by their adult peers. Adults, therefore, evaluate smoking more

negatively than do adolescents. Adults see smoking as a stigma compared to adolescents who see it as an asset. If one were to isolate subjects by age, the results may show a positive evaluation of smoking by younger subjects as compared to a less positive evaluation by older subjects. As well, theories tested have shown that attitudes about smoking are more positive than negative for those who smoke compared to those who do not. Research has shown that people begin to smoke because of an elevated positive image of a smoker or to attain peer acceptance. According to the Canadian Council on Smoking and Health, one of the strongest predictors of smoking among young people is the prevalence of smoking in their peer group (1989).

According to previous research, campaigns need to be orchestrated that take into account the origins of the elevated image of the smoker (Burton, Sussman, Hansen, Johnson & Flay, 1989). As well, past research in the area of attitudes suggests that the focus of research should be to isolate attitudes and personal beliefs about smoking. Obviously then achieving a better understanding of cigarette smoking is necessary. It is unclear whether appearance of peers influences

attitudes about smoking and whether those who smoke are rated more positively by adolescents. This is the age of concern since most adolescents who experiment with cigarette smoking become full-time smokers by the age 18 (Canadian Council on Smoking and Health, 1989).

There has been little focus in the past on peer models as opposed to advertisement models when comparing adolescent attitudes to adult attitudes about smoking. Attitudes about peers are the basis to an elevated image. It is important whether the differences found in the number of adolescent smokers versus adult and male versus female are due to specific attitudes about their peers. The attitudes that were considered were attractiveness, likability, and trustworthiness.

The author of the present study attempted to show that adolescent smokers compared to older age groups would rate peer smokers more positively in regards to attractiveness, likability, and trustworthiness. This would directly support previous research by Burton and his colleagues who found that smoking behaviour stems from an elevated image associated with smoking. It is known that adolescents have a need for peer approval and this need's role on smoking initiation has been

proven. Therefore, peers would be rated more positively. Females compared to males would rate peers who smoke more positively on the three dimensions previously noted. This would test research that found that women and adolescents are targeted more often by advertising containing a perceived attractiveness about the subject matter, and to determine if women in general rated more positively on the attitude dimensions. The age groups would also show a difference between rating smoking models versus non smoking models. The youngest adolescents would rate the smoking models more positive than the other two groups following the research that found that this age group fails to see the health hazards associated with smoking. The evaluation was expected to decrease in positiveness as a direct function of age.

Method

Subjects

The Subjects consisted of 92 students from the Algoma District, in Northern Ontario. Students in this district came from small towns and rural areas east of Sault Ste. Marie. Forty subjects were from grade 9 and were approximately 14 years of age. The other forty

were from grade 12 and were approximately 17-18 years of age. The third set of subjects consisted of students from Algoma University College in Sault Ste. Marie, Ontario who were approximately 25 years of age and older.

Materials

Subjects were shown 10 picture slides of peer models and asked to rate them. A 7 point scale of attractiveness, likability and trustworthiness was used to evaluate each model. Negative 3 meant least, 0 meant neutral, and 3 meant very attractive, likable, or trustworthy (see Appendix A). In half of the picture slides the model was smoking.

Procedure

Subjects were required to meet for one session. Subjects were told that the study was to measure their attitudes about peers. They were asked to sign a consent form to participate (see Appendix B). Two packages of the 10 picture slides were made up ahead and systematically administered to subjects to ensure that the same peer model was not seen smoking and not smoking in the same package. There were 2 sittings for each of the three age levels of subjects. For each of

sittings, the 10 slides were delivered and subjects were asked to circle the best number on each of the three scales that applied to each model. The difference between the smoking model versus nonsmoking model slides was measured. As well, at the end of the session subjects were asked to indicate whether they smoked, their age and their sex. Following the slide presentation, subjects were debriefed, and the purpose of the study was explained. Subjects were given a list of facts that all should know about smoking (see Appendix C).

Results

Analysis of Covariance was used to compare the 3 groups of students. The results showed that on the attractiveness scale, adolescents rated smokers more negatively than did adult students (see Figure 2).

Insert Figure 2 about here

The mean score for adolescents was less than the mean score for adult subjects. The analysis of covariance showed a significant age effect, $F(1, 89) = 13.61$, $p < .05$. The older the subject the closer the rating

between the two models became. Compared with adults, adolescents rated smokers as less positive on the likability scale (see Figure 3).

Insert Figure 3 about here

There was a significant age effect, $F(1,89)=8.31$, $p<.05$. The older the subjects, the closer the rating between the two models. Adolescents also rated smoking subjects as less positive compared to adults on the trustworthiness scale (see Figure 4).

Insert Figure 4 about here

There was a significant model effect, $F(2,89)=5.04$, $p<.05$ and a less significant age effect, $F(1,89)=1.89$, $p<.05$. Overall age had a significant effect on perceptions of peers; however, it was opposite to the hypothesis that was tested. The younger the subjects the more negative the perception of smoking models was. Sex of subjects showed no significant effect on the perceptions of the smoker. Both males and females rated smokers similarly and the younger subjects (both

sexes) rated smokers equally as less positive. The small number of admitted smokers, 7 out of 92, prohibited further analysis of the data and it was impossible to test the third hypothesis. The third hypothesis was that smokers would rate smokers more positive compared to non-smokers.

Discussion

It is important that all aspects associated with smoking are determined. This study attempted to prove there are male/female differences in attitudes towards smoking behavior as well as distinct age differences. These attitudes then account for the differences in occurrence of smoking in adolescents versus adults and male versus female. With a better understanding of the differences, one is better able to develop anti-smoking programs that are tailored for age and sex differences.

Although the results failed to confirm the hypothesis that adolescents would rate smokers more positively compared to adults, there was a more positive result that could be considered. The adolescents rated the smokers significantly lower than did adult subjects. This may mean that the media campaigns targeted at adolescents, are working or that

adolescents are taking the health warnings more seriously in the Algoma District. The hypothesis that women would rate more positive compared to males could not be confirmed.

The adult subjects may have rated the models more positively because the anti-smoking campaigns target the youth population. Since many adults grew up in a social environment that did not discriminate against smoking as much, more lenient attitudes about smoking may have developed for them. The low numbers of admitted smokers may have stemmed from the rigidity of the definition of a "smoker" used. The definition may have eliminated those who do smoke but only during certain social functions, e.g., the weekend smoker.

Future research should try to determine if there is a universal trend toward negative views about smoking. It would also be beneficial to design an experiment to tease out the differences that exist between age groups who smoke versus age groups who do not.

References

Ajzen, I. & Fishbein M. (1970). The prediction of behavior from attitudinal and normative variables. Journal of Experimental Social Psychology, 6, 466-487.

The study was to determine when attitudes would change or guide behavior. It was found that intentions to smoke as well as smoking initiation are predictable from attitudes toward smoking.

Bachman, J. D, O'Mally, P. & Johnson, S.(1981). Smoking, drinking and drug use among American high school students:correlates and trends, 1975-1979. American journal of Public Health, 71, 59-69. Annual survey testing the premise that cigarette smoking reduces attractiveness. Relevance is that it is contrary to most of the experimental studies and theories that have been tested to date.

Burton, D., Sussman, S., Hansen, W.B., Johnson, C.A., & Flay, B.R. (1989). Image attribution and smoking intentions among seventh grade students. Journal

of Applied Psychology, 19, 656-664. Defined correlations between smokers image and self image with intentions to smoke. Relevance is that it strengthens the fact that attitudes are a critical factor involved in intention to smoke.

Botvin, E.M., Botvin, G.J., & Baker, E. (1983).

Developmental changes in attitudes toward cigarette smokers during early adolescents.

Psychological Reports, 53, 547-553. Administered a questionnaire about smoking behaviour that determined there is an increase in smoking behavior that is correlated positively with increase in age for adolescents. Relevance is that it shows that the older one becomes the more likely they will evaluate smoking in a more positive manner.

Budd, R. J. (1986). Predicting cigarette use: the

need to incorporate measures of salience in the Theory of Reasoned Action. Journal of Applied Social Psychology, 16, 663-685.

The study incorporated a measure of belief salience in the Theory of Reasoned Action. It improved predictive and explanatory

power of the theory. The study showed that perceived utilities of smoking are differentially salient for smokers and nonsmokers. Rejection, centrality, and certainty are useful as measures of the degree of definition of a person's attitudes and subjective norms.

Hirschman, R. S. & Leventhal H. (1989). Preventing smoking behavior in school children: an initial test of a cognitive development program. Journal of Applied Social Psychology, 19, 559-583.

It was a three session smoking prevention program based on cognitive-developmental stage model. A media component focusing on experiences associated with smoking was followed by a discussion that linked cognition about symptoms with skills to resist influences to smoke. Students exposed to the experimental program, showed increased gains of accurate interpretations of symptoms. Fewer students exposed to the experimental program made the transition to a regular smoker after an 18 month follow-up.

Loken, B. & Howard-Pitney, B. (1988). Effectiveness

of cigarette advertisements on women: an experimental study. Journal of Applied Psychology, 7, 378-382.

The study investigated 3 factors that could influence subjects' reactions to print advertisements. 115 women were shown ads that varied model vs general or specific warning label. Specific warnings on ads can act as a counter influence to an ads appeal. These ads were rated as less attractive, persuasive and credible. This effect was especially true for subjects who smoke.

Miller, S.K., & Slap, G.B. (1989). Adolescent smoking: a review of prevalence and prevention. Journal of Health Care, 10, 129-135. Determined the effectiveness of smoking intervention for adolescents. Relevance in that it explains that to date there has been little progress in deterring adolescent smoking behavior. It also calls for a more precise definition of smoking and a better control of confounds in experiments pertaining to intervention programs.

Norman, N.M., & Tedeschi, J.T. (1989). Self presentation , reasoned action, and adolescents decision to smoke cigarettes. Journal of Applied Social Psychology, 19, 543-558.

The effectiveness of a one shot intervention program was evaluated and found to have little effect on adolescent smoking. Relevance is that it found that smoking behavior is determined by images that are developed by attitudes one has about smoking.

Shopland, D., & Brown, C. (1987). Toward the 1990 objectives for smoking: measuring the progress with 1985 NHIS Data. Public Health Reports, 102, 68-73. Reviewed the numbers of people still smoking even though there are health warning labels on tobacco products and bans on advertising. Relevance is that smoking behavior can't be stopped by these processes and one must look at the causes of the behavior.

Warner, K. (1986). Selling smoke, cigarette advertising and public health. Washington DC American Public Health Association.

Statistics Canada (1991). Canadians and smoking: an

update, 1991. Health and Welfare Canada.
Gave statistics pertaining to the rate,
age, and sex differences in regards to
smoking. Dealt also with special diseases
associated with smoking. Relevance is that
it gives a current perspective on smoking in
Canada.

Appendix A

Parental and Student Consent Form

Dear Parent(s)/Student

At present, I am an Algoma university student working on my Honors B. A. thesis in psychology. I am requesting your permission for your child's/your participation in my research project dealing with students perceptions of peers. The total time required will be approximately one half hour. The student will be required to rate 10 picture slides of peers on 3 seven point scales (attractiveness, likability, and trustworthiness) ranging from positive 3 to negative 3. It is my expectation that the age of the student will have a direct bearing on the evaluation of the slides. Following the students rating of the slides, social and health issues will be discussed. The results for each individual will be held with strictest confidentiality, and each student will only be required to indicate their age and sex on the evaluation form. Thankyou for your consideration.

Terri-Sue Quinn

I the parent, _____
(please print full name), voluntarily give my consent
for my child's participation in the study titled: Peer
Perception.

I the student, _____
(please print full name), voluntarily give my consent
to serve as a participant in the study titled: Peer
Perception.

I, as a participant, may terminate my participation in
this study at any time, and am of the understanding
that all results obtained will be confidential.

Signature of Parent: _____ Date: _____

Signature of Student: _____ Researcher: _____

Appendix B

Scales Used to Measure Student's Attitudes

1. Attractiveness:

-3 -2 -1 0 1 2 3

Likability:

-3 -2 -1 0 1 2 3

Trustworthiness:

-3 -2 -1 0 1 2 3

2. Attractiveness:

-3 -2 -1 0 1 2 3

Likability:

-3 -2 -1 0 1 2 3

Trustworthiness:

-3 -2 -1 0 1 2 3

3. Attractiveness:

-3 -2 -1 0 1 2 3

Likeability:

-3 -2 -1 0 1 2 3

Trustworthiness:

-3 -2 -1 0 1 2 3

4. Attractiveness:

-3 -2 -1 0 1 2 3

Likability:

-3 -2 -1 0 1 2 3

Trustworthiness:

-3 -2 -1 0 1 2 3

5. Attractiveness:

-3 -2 -1 0 1 2 3

Likability:

-3 -2 -1 0 1 2 3

Trustworthiness:

-3 -2 -1 0 1 2 3

6. Attractiveness:

-3 -2 -1 0 1 2 3

Likability:

-3 -2 -1 0 1 2 3

Trustworthiness:

-3 -2 -1 0 1 2 3

7. Attractiveness:

-3 -2 -1 0 1 2 3

Likability:

-3 -2 -1 0 1 2 3

Trustworthiness:

-3 -2 -1 0 1 2 3

8. Attractiveness:

-3 -2 -1 0 1 2 3

Likability:

-3 -2 -1 0 1 2 3

Trustworthiness:

-3 -2 -1 0 1 2 3

9. Attractiveness:

-3 -2 -1 0 1 2 3

Likability:

-3 -2 -1 0 1 2 3

Trustworthiness:

-3 -2 -1 0 1 2 3

10. Attractiveness:

-3 -2 -1 0 1 2 3

Likability:

-3 -2 -1 0 1 2 3

Trustworthiness:

-3 -2 -1 0 1 2 3

-----Part B-----

- 1.
- 2.
- 3.

Appendix C

Facts Everyone Should Know about Smoking

-Facts Everyone Should Know-

A smoker is anyone who smokes at least one cigarette a day.

Smoking tobacco has been directly linked with the occurrence of cancer. Cancer cases have increased 8% for males and 13% for females (age 0-44) since 1989.

Attitudes about smoking have been directly linked to smoking behaviour. Peer pressure is one of the most important factors initially, while psychosocial factors predominate at later stages. Examples of psychosocial factors would be: a desire to assert independence, a desire to appear adult-like, a desire to mimic role models, and a belief that smoking will contribute to weight control.

It has been found that one who currently smokes a couple of cigarettes per day may be smoking a couple of packs per day a few years from now. Young people who smoke increase their cigarette consumption very quickly.

It has been estimated that between 1/3 and 2/3 of adolescents who even try two cigarettes go on to become regular smokers.

In 1991, over 120,000 Canadian adolescents started to smoke, with over 70% of them starting before age 14. Among 12-17 year old daily smokers, the average per capita consumption reported is approximately 14 cigarettes per day.

Among 100,000 male smokers now aged fifteen, 25,959 or 50% of premature deaths will be attributable to smoking. Among 100,000 female smokers now aged fifteen, 38% of premature deaths will be attributable to smoking.

The number of women smoking is greater than the number of males smoking for those ages 15-24. There are also greater number of males quitting than females for this age group.

Women can encounter greater medical difficulties if they are regular tobacco smokers. They stand greater chances of heart attack if taking birth control, osteoporosis and cervical cancer.

Smoking Evaluation

"PAGE 28"

Cigarette smoking during pregnancy increases the risk of spontaneous abortion and low birth rate babies that have an increased risk of neonatal death.

(National Clearinghouse on Tobacco and Health, 1989-1991)
(Statistics Canada: Health and Welfare Canada, "Canadians and Smoking: An Update", 1991)

PERCENTAGES OF MEN AND WOMEN WHO WERE
REGULAR SMOKERS, BY AGE, 1985 AND 1989

| AGE GROUP MEN | 1985 | 1989 |
|-----------------|-------|-------|
| 15-19 | 19.6% | 21.0% |
| 20-24 | 32.2% | 36.0% |
| 25-44 | 38.0% | 37.0% |
| 45-64 | 35.6% | 34.0% |
| 65 AND OVER | 22.7% | 21.0% |
| TOTAL | 33.1% | 33.0% |
| AGE GROUP WOMEN | 1985 | 1989 |
| 15-19 | 20.8% | 22.0% |
| 20-24 | 37.9% | 38.0% |
| 25-44 | 30.7% | 34.0% |
| 45-64 | 28.6% | 30.0% |
| 65 AND OVER | 14.8% | 16.0% |
| TOTAL | 27.8% | 29.0% |

HEALTH AND WELFARE CANADA, "CANADIANS AND SMOKING: AN
UPDATE", 1991

SMOKING HABITS OF MEN AND WOMEN AGES 15 AND OVER, 1989

| TYPE OF CIGARETTE SMOKER | MEN | WOMEN | TOTAL |
|--------------------------|------|-------|-------|
| REGULAR CIGARETTE SMOKER | 33% | 29% | 31% |
| OCCASSIONAL SMOKER | 1% | 1% | 1% |
| FORMER SMOKER | 30% | 22% | 26% |
| NEVER SMOKED REGULARLY | 37% | 48% | 42% |
| TOTAL | 101% | 100% | 100% |

HEALTH AND WELFARE CANADA, "CANADIANS AND SMOKING: AN UPDATE",
1991.

Figure Captions

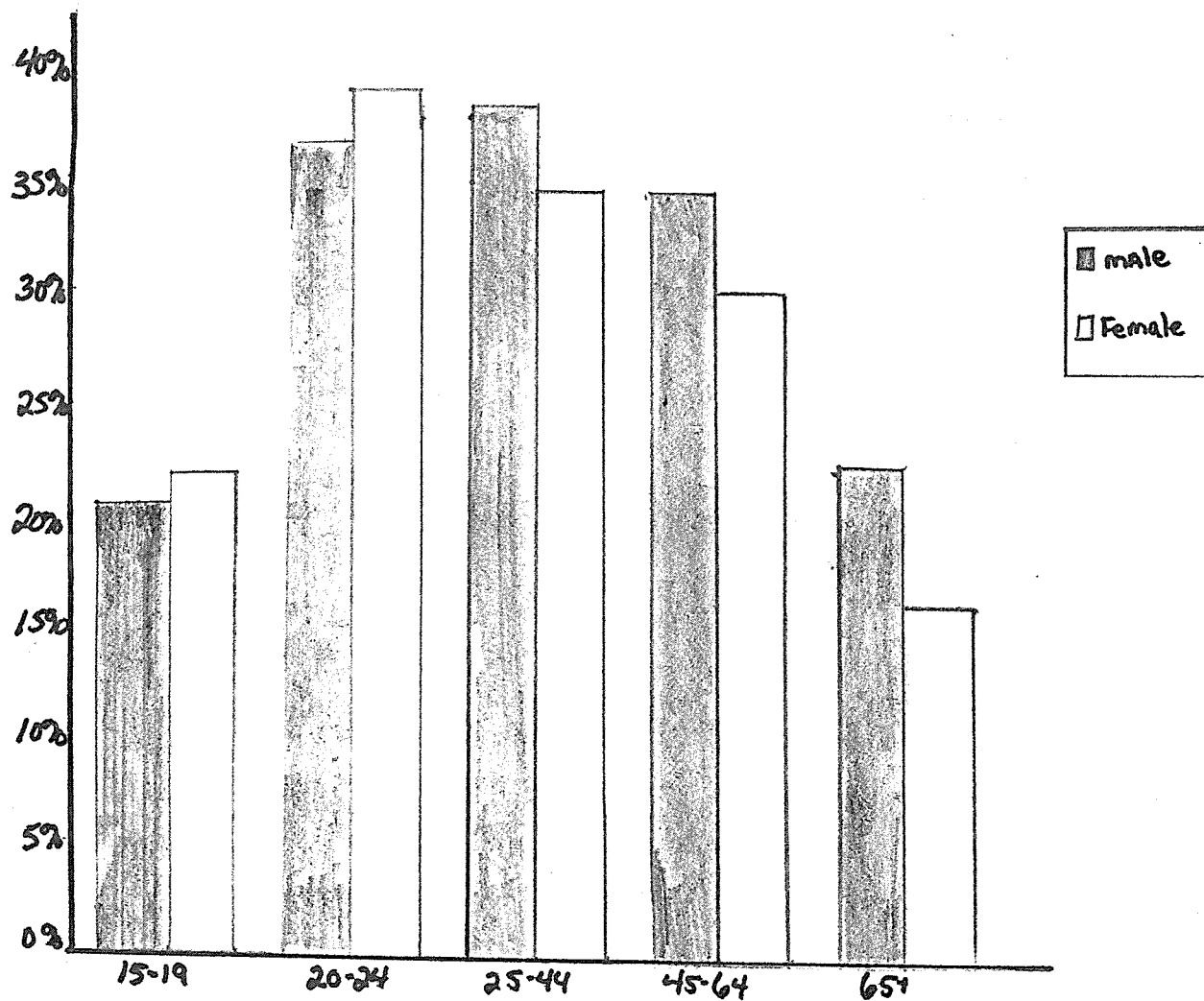
Figure 1. The percentage of male and female smokers, by age, 1989.

Figure 2. Students perceptions of peer models on the attractiveness scale for ages 14, 18, and 25+.

Figure 3. Students perceptions of peer models on the likability scale for ages 14, 18, and 25+.

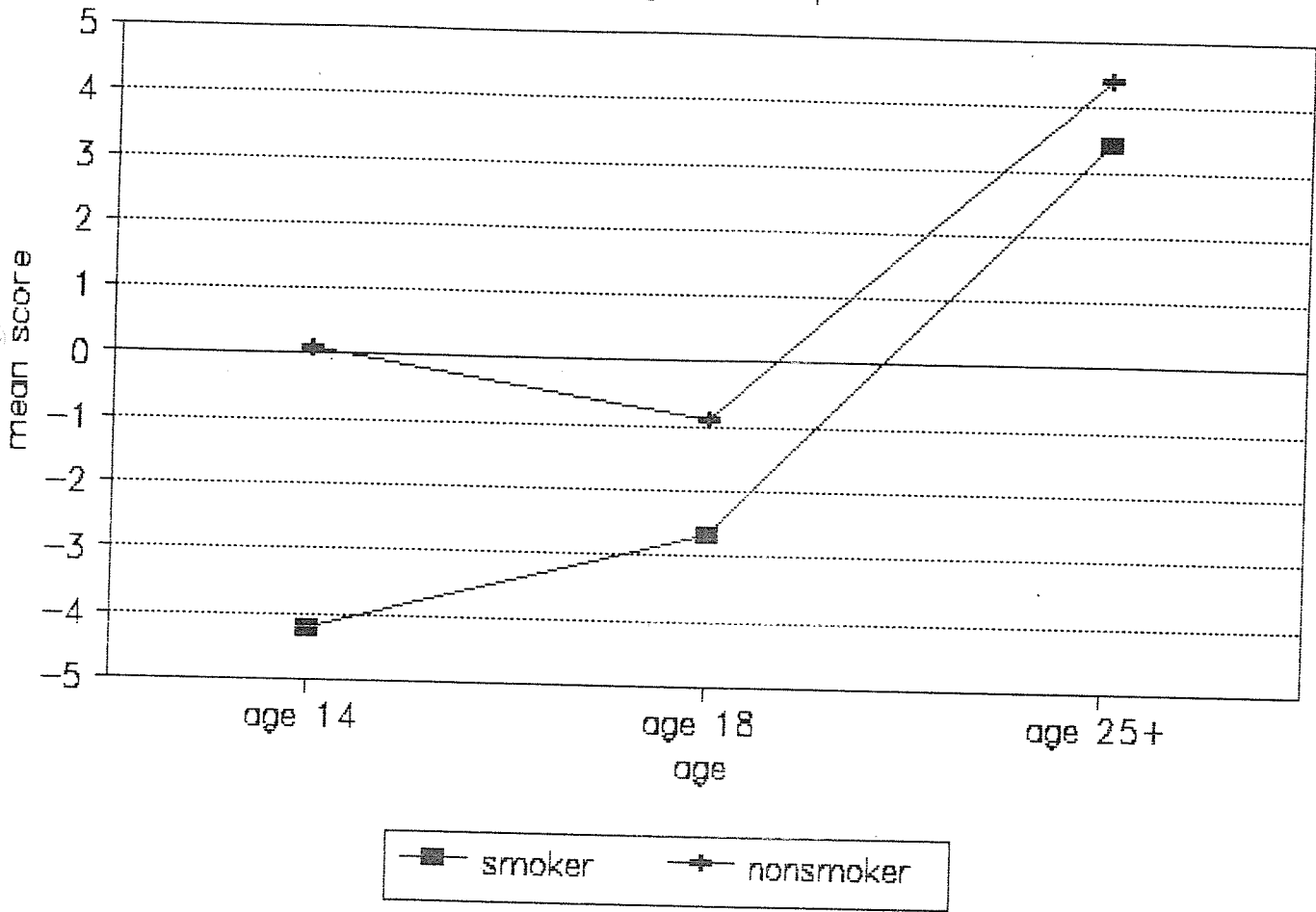
Figure 4. Students perceptions of peer models on the trustworthiness scale for ages 14, 18, and 25+.

Percentage of Male & Female Regular Smokers,
by AGE 1989

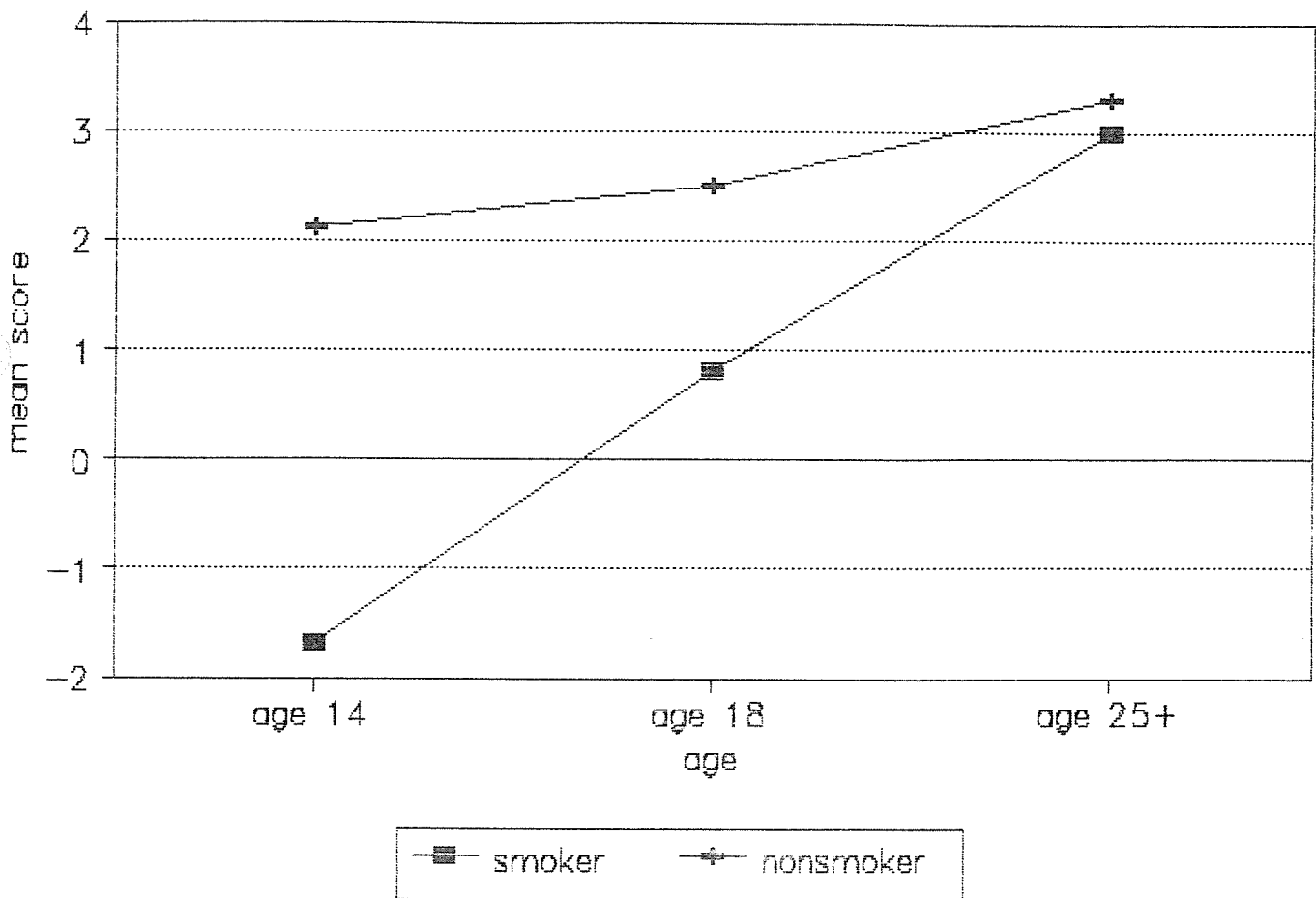


Health and Welfare Canada, "Canadians and Smoking:
An Update", 1991

Perceptions of Attractiveness: by Age Group



Perceptions of Likability: by Age Group



Perceptions of Trustworthiness: by Age Group

