Perceptions by Hispanics of channels and sources of health messages regarding cigarette smoking

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Abstract

Objective - To identify the perceptions that two communities of urban Hispanics have of various sources and channels of information regarding cigarette smoking and to compare them with those of non-Hispanic whites.

Design - Random samples of subjects of both ethnic groups and of both genders were surveyed by telephone to determine the perceived credibility and motivating power of 13 different channels of information and of 14 different sources of cigarette smoking information.

Subjects - 544 Hispanics and 542 non-Hispanic whites from San Francisco, California and Houston, Texas, 18-65 years in age, of both genders.

Results - Differences in the proportion of respondents assigning various perceived qualities to sources and channels of information regarding cigarette smoking were found to exist across ethnic groups (Hispanics and non-Hispanic whites); the respondents' gender (particularly among Hispanics); and the acculturation level of the Hispanic respondents. Nevertheless, there was a cluster of channels (printed media and television news) and of sources (physicians, people with cancer, friends, and peers) that were positively evaluated by large proportions of the respondents in both ethnic groups.

Conclusions - Hispanics differ from non-Hispanic whites in their evaluation of various possible sources and channels of information about tobacco control. Culturally appropriate interventions for Hispanics need to be designed so as to use those channels and sources of information that are more positively perceived by Hispanics.

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Keywords: Hispanics, credibility, sources, channels

Introduction

The literature on social marketing, mass communication, and attitude change¹⁻⁵ has frequently proposed that there is a need to use channels and sources of information that are appropriate for the group being targeted. Recent articles on the development of cult-

urally appropriate interventions^{6,7} also have supported the need to identify effective ethnic group-specific channels and sources of information to reach the target audience. This article summarises the perceptions of a random sample of Hispanics regarding a variety of possible sources and channels of information that could be used for the presentation of health promotion messages dealing with cigarette smoking.

Although some information is currently available on the evaluation of possible channels and sources of health promotion among non-Hispanic whites,⁴ there is a significant lack of research addressing these issues among members of ethnic groups and particularly among Hispanics. This limitation in the research base makes it difficult for programme developers to identify optimal sources and channels of information for health-promoting interventions. The need for a proper understanding of the perceptions of sources and channels is particularly critical in the area of tobacco education, as tobacco control interventions often make use of a variety of sources (such as physicians, entertainers, public figures, peers) and channels (for example, printed media, electronic media). In addition, research in the field of attitude and behaviour change³ has shown that, in many cases, the channel used in presenting information is more important than the actual message in producing attitudinal, behavioural, or informational changes, and that the perceived credibility of sources and channels is especially important in communication campaigns that demand low levels of involvement on the part of the receiver such as community-wide interventions and those that use the mass media.⁸⁻¹⁰

The choice of channels of information is perceived by researchers^{11,12} as following specific personal needs of the recipients and their evaluation of the channel's characteristics.^{4,13-15} For example, research has shown that, for information on cancer, individuals prefer to contact physicians and that cancer information provided by physicians is perceived as more accurate and credible than when presented by other sources.^{4,15}

Although members of major ethnic groups in the United States account for approximately 28% of the total population, little is known about their reactions to the sources and channels currently used in the dissemination of

targeted tobacco control information. Research has shown group-specific preferences for certain channels depending on variables such as ethnic group, media availability, acculturation level of the recipient, gender, and educational level.¹⁶⁻¹⁸ Initial research with ethnic populations also has shown the existence of ethnic-specific preferences for various sources of health information.^{18,19} More importantly, research has begun to show ethnic group-specific differences in the ways in which various sources and channels of information are judged in terms of their credibility. For example, a study with African Americans²⁰ found that television is perceived as more credible than radio by African Americans, whereas research with Hispanics¹⁸ found no major differences in the credibility assigned to both channels.

This article summarises the evaluations of various communication channels and sources of information regarding cigarette smoking among two communities of urban Hispanics in the United States and compares those responses with the perceptions given by a group of non-Hispanic whites from the same urban environments. Hispanics currently account for well over 10 % of the total population of the United States and they are expected to become the largest ethnic group early in the next century. Data on cigarette smoking prevalence among Hispanics show worrisome patterns requiring the design of targeted prevention interventions. For example, Hispanic men (28 %) report smoking cigarettes in proportions that are comparable to those of non-Hispanic white men (28 %) whereas Hispanic women (16 %) report cigarette smoking in proportions that are lower than those of non-Hispanic white women (24 %).²¹ Hispanic high school seniors report cigarette smoking prevalences that are lower than those of non-Hispanic whites but higher than those of African American and Asian American youth,²² whereas the 1993 Youth Risk Behavior Survey showed current cigarette use prevalence for Hispanics (28.7 %) that was slightly lower than that of non-Hispanic whites (33.7 %) but higher than among African Americans (15.4 %).²³ Recently, and in part as a response to these statistics, there has been an effort by various researchers and state agencies (such as California's Department of Health Services) to develop targeted interventions specifically designed for Hispanics.²⁴⁻²⁷ Future prevention and cessation campaigns targeting Hispanics will benefit from the data presented below, which will allow interveners to choose optimal sources of and channels for disseminating information.

In analysing the data reported here, the possible role of acculturation on the evaluations of the various sources and channels was studied. This was done because research has shown that, among Hispanics, acculturation seems to be related to cigarette smoking prevalence^{28,29} as well as to a number of other variables that may be relevant to the design of preventive interventions including choice of media.¹⁷ In addition, a previous study by the author¹⁸ showed differences in the perceived

qualities of various sources and channels of information when dealing with the prevention of HIV. It was expected that the less acculturated Hispanics would differ in their evaluations from the more acculturated and that the responses of the latter would approach those of the non-Hispanic white respondents.

Methods

SUBJECTS

Respondents were randomly chosen from two southwestern cities in the United States: San Francisco, California and Houston, Texas. These cities were chosen because each has a large number of Hispanic residents and because they are located in two states with different approaches to tobacco control. A total of 544 Hispanics (266 in San Francisco and 278 in Houston) and 542 non-Hispanic whites (233 in San Francisco and 309 in Houston) were interviewed over the telephone. Overall, 55.5 % of the Hispanic respondents and 56.0 % of the non-Hispanic whites were female. The mean age was 35.4 years for Hispanics and 38.9 years for non-Hispanic whites. A large proportion (59.4 %) of the Hispanics and of the non-Hispanic whites (53.3 %) reported being married at the time of the interview while 30.7 % of Hispanics and 33.7 % of non-Hispanic whites reported being single and never married. The Hispanic respondents reported a lower average number of years spent in formal education (mean = 10.8 years) compared with non-Hispanic whites (mean = 15.2 years). There were differences also across ethnic groups in reported income, with Hispanics reporting an average family income of \$20 000-25 000 and the non-Hispanic whites reporting an average family income of \$35 000-50 000. The majority (68.8 %) of the Hispanic respondents and of the non-Hispanic whites (76.2 %) reported employment outside the home in the two weeks before the survey.

Most of the Hispanic respondents (73 %) reported being born outside the United States with the largest numbers being born in Mexico (56.2 %) and Central America (36.0 %). Foreign-born Hispanic respondents had lived in the United States for an average of 13.4 years with 19.2 % reporting having lived less than five years in the United States. The majority of the Hispanic respondents answered the interview in Spanish (70.0 %).

SURVEY INSTRUMENT

Respondents were asked to rate a number of possible channels of information on the health effects of cigarette smoking such as radio or television commercials, newspaper or magazine articles, pamphlets, books, posters, television news or radio news, billboards, bus posters, and serialised "soap operas" in print ("fotonovelas") or on television ("telenovelas"). Each channel was rated in terms of its credibility (for example, "Would you believe a message about the effects of smoking cigarettes if it was presented in television commercials?") and their behavioural motivational

power (such as "Would you quit smoking if it was suggested in television commercials?"). Respondents also were asked to rate a variety of health information sources (an actor, singer, athlete, physician, priest or minister, politician, teacher, friend, child, peer of the respondent, newscaster, person with cancer, pregnant woman, and someone's parents). Each possible source of information was rated on its perceived credibility (for example, "Would you believe a message about the effects of smoking cigarettes if it was presented by an athlete?"); expertise (for example, "Would you consider an athlete an expert on the topic of the health effects of smoking cigarettes?"); trustworthiness (for example, "Could you trust an athlete when talking about the health effects of smoking cigarettes?"); and its perceived behaviour change motivational power (for example, "Would you quit smoking if it was suggested by an athlete?"). The interview schedule also included standard sociodemographic questions and the SASH, an acculturation scale specifically developed for Hispanics.^{32,33} This scale has four items measuring linguistic preferences and use and has been found to be highly valid and reliable with Hispanics. All items were submitted to double translation procedures and to decentering.³⁴

PROCEDURE

Respondents were randomly chosen from the telephone directories of both cities (San Francisco, California and Houston, Texas). A household was judged to be eligible if those answering the telephone identified themselves as members of one of the two ethnic groups. Within a given household, the respondent was selected by asking for the resident who had most recently celebrated a birthday and who was between 18 and 60 years of age. Four follow-up calls were made whenever the respondent was not available. The surveys were conducted in the language of choice of the respondents (English or Spanish) by highly trained and experienced bilingual and bicultural interviewers. A technical problem makes it impossible to report accurate refusal rates for this study, although previous studies³⁵ conducted by the author following similar pro-

cedures showed very low refusal rates for Hispanics (ranging from 3.1 % to 4.7 %).

Telephone coverage for Hispanic and non-Hispanic white households is fairly high in both cities sampled. In San Francisco, 1.98 % of non-Hispanic white households did not have a telephone according to the 1990 census compared with 3.73 % for Hispanic households. In Houston, the corresponding figures are 17.6 % for Hispanic households and 3.41 % for non-Hispanic whites.

ANALYSIS

The respondents' evaluations of the various sources and channels of information are reported here in terms of the proportion of respondents agreeing with a given question. The data are reported separately for the evaluation of the various channels and sources. χ^2 analyses were conducted for each of the dependent measures studied (sources and channels) across ethnic groups. Bonferini's correction was used to avoid type I errors. The results of the various χ^2 analyses are not reported here but are available from the author. Following previous studies with the SASH, respondents who scored less than 2.99 were considered to be low in acculturation and the rest were considered to be high in acculturation.^{30,31} In analysing the data, responses of members of a given ethnic group were collapsed across cities. This was done because there were few, if any, statistically significant differences across cities for the responses of members of a given ethnic group.

Results

CHANNELS OF INFORMATION

Ethnic differences

Table 1 presents the evaluations made by the Hispanic and non-Hispanic white respondents of the 13 possible channels of information for a health-promoting message regarding cigarette smoking. In general, although a larger proportion of Hispanics than of non-Hispanic whites rated the various channels as credible, there were few statistically significant differences. The largest difference across ethnic groups was Hispanics rating billboards and posters as more credible than non-Hispanic whites (table 1). Likewise, Hispanics were more likely to assign behavioural motivating power to a larger number of channels than non-Hispanic whites. In terms of perceived credibility, the data presented in table 1 show a marked preference for printed channels and for electronic media news shows among Hispanics and non-Hispanic whites alike. Books, pamphlets, newspaper articles, television news, and magazine articles were perceived as credible by the largest proportions of respondents of both ethnic groups. Respondents from both ethnic groups also agreed on the five most frequently endorsed channels of information as having behaviour change motivational power: books, newspaper articles, magazine articles, television news, and pamphlets. The channels perceived as credible by

Table 1 Evaluation of channels of information regarding cigarette smoking

	Credibility		Behavioural motivator	
	Hispanics	Whites	Hispanics	Whites
TV commercials	79.4	65.9*	51.8	28.1*
Radio commercials	70.4	61.3	49.2	27.7*
Telenovelas	50.6	NA	40.6	NA
TV news	82.1	74.5	58.8	36.0*
Pamphlets	84.0	82.9	62.1	44.8*
Books	88.1	86.3	69.3	49.4*
Posters	74.0	62.5*	54.9	31.2*
Radio news	74.6	70.2	53.3	33.7*
Fotonovelas	52.0	NA	43.4	NA
Newspaper articles	86.4	82.5	65.0	48.0*
Magazine articles	83.6	82.5	62.9	47.6*
Billboards	70.5	53.2*	53.0	28.8*
Bus posters	71.9	54.4*	52.6	28.6*

All χ^2 analyses were carried out between the two adjacent columns to the left of the asterisks. df = 1, 1025; *p < 0.001. NA = not applicable.

Table 2 Evaluation of channels of information on cigarette smoking by acculturation level of Hispanic respondents

	Credibility		Behavioural motivator	
	Acculturation		Acculturation	
	Low	High	Low	High
TV commercials	81.8	74.4	59.2	36.5*
Radio commercials	74.1	62.8	56.0	35.3*
Telenovelas	53.0	45.0	46.1	28.3*
TV news	84.4	77.3	65.6	45.0*
Pamphlets	85.0	82.0	65.3	55.6
Books	89.0	86.0	72.6	62.6
Posters	78.3	65.1	59.9	44.4*
Radio news	79.8	64.0*	60.3	38.8*
Fotonovelas	55.2	44.7	47.8	33.5
Newspaper articles	86.9	85.4	66.5	62.0
Magazine articles	82.6	85.5	64.4	59.6
Billboards	75.1	61.0*	59.5	39.8*
Bus posters	76.2	63.2	59.8	38.0*

All χ^2 analyses were carried out between the two adjacent columns to the left of the asterisks. df = 1, 512; *p < 0.001.

the lowest proportion of Hispanics were “telenovelas” (50.6 %) followed by “fotonovelas” (52.0 %) whereas among non-Hispanic whites, the channel perceived as credible by the lowest proportion of respondents was billboards (53.2 %).

Gender differences

An analysis of the data by gender of the respondents showed very few statistically significant differences in the proportion of respondents rating each channel of information as credible or as having behaviour change power. The only statistically significant differences found among Hispanics were that a larger proportion of women (84.1 %) than of men (73.8 %) rated a television commercial as credible. The same was true for a television newscast (75.9 % of men and 87.3 % of women). Among the non-Hispanic white respondents, a lower proportion of men (77.7 %) than of women (86.4 %) rated as credible a magazine article. There were no statistically significant gender differences in terms of the perceived behaviour change motivational power of the various channels.

Differences due to acculturation level

Table 2 presents the proportion of Hispanic respondents rating each of the various channels of information in terms of the respondents’

level of acculturation. In general, greater proportions of low-acculturated Hispanic respondents rated the various channels as credible and as having behaviour change power than among the more acculturated. Overall, there were few statistically significant differences in the proportion of low- and highly acculturated respondents who perceived the various channels as credible although the acculturation level seems to be more relevant in producing statistically significant differences in the proportions of respondents indicating that a given channel had behaviour change motivational power.

The five information channels rated as credible by the largest proportion of respondents were similar across acculturation groups (books, newspaper articles, television news, pamphlets, and magazine articles). These same channels were also considered as having behaviour change motivational power by the less and the more acculturated Hispanic respondents.

SOURCES OF INFORMATION

As mentioned above, respondents also were asked to rate 14 possible sources of information that could be used to disseminate information about the effects of cigarette smoking. Four of the sources rated were part of the entertainment world (a television or movie actor, a singer, a newscaster, and an athlete), one was a government official (a politician), three were valued professional roles (a teacher, a priest or minister, a doctor); one was a person with cancer, and the rest included acquaintances or peers of the respondent (a friend, someone’s parents, a child, a peer, or a pregnant woman). Table 3 shows the proportion of respondents who rated each of the sources in terms of the ethnicity of the respondents.

Ethnic differences

A larger proportion of Hispanic respondents evaluated positively each of the sources of information compared with the non-Hispanic white respondents. A large number of those ethnic differences were statistically significant (table 3). Across both ethnic groups, a physician was perceived as credible, having ex-

Table 3 Evaluation of sources of information on health effects of cigarette smoking

	Credibility		Expertise		Trustworthiness		Behavioural motivator	
	Hispanics	Whites	Hispanics	Whites	Hispanics	Whites	Hispanics	Whites
Actor	56.0	47.8	33.1	14.0*	52.0	39.6*	42.1	21.4*
Singer	52.8	45.6	32.7	14.0*	48.6	36.8*	41.7	20.6
Physician	93.0	92.6	94.7	95.9	95.4	94.9	89.1	75.9*
Priest/minister	76.5	60.8*	56.8	31.1*	75.7	61.9*	67.5	40.9*
Athlete	67.3	53.9*	51.5	27.0*	64.8	46.4*	57.6	31.1*
Politician	41.6	33.3	30.4	12.8*	37.7	25.0*	38.0	17.1*
Teacher	76.4	72.0	65.3	47.3*	74.4	66.5	65.1	44.1*
Someone’s parents	78.8	62.7*	62.7	31.1*	76.3	55.2*	69.7	38.8*
Friend	79.3	73.8	54.9	34.2*	73.8	68.2	69.0	55.0*
Child	58.1	41.2*	29.9	13.4*	53.9	35.7*	60.0	37.5*
Similar peer	82.8	77.4	57.7	39.7*	76.5	70.6	74.5	57.2*
Newscaster	67.5	55.8*	49.9	24.9*	59.7	45.8*	54.6	29.6*
Cancer patient	92.6	84.4*	86.9	71.9*	91.8	82.8*	87.9	71.7*
Pregnant woman	75.8	63.3*	61.9	35.6*	71.7	55.0*	68.6	44.9*

All χ^2 analyses were carried out between the two adjacent columns to the left of the asterisks. df = 1, 1042; *p < 0.001.

expertise, being trustworthy, and having behaviour change motivational power in greater proportions than any of the other sources of information about cigarette smoking. Respondents from both ethnic groups showed some differences in the five sources of information perceived as credible by the largest proportion of respondent. Hispanics favoured (in descending order) a physician, a person with cancer, a peer of the respondent, a friend, and a priest or minister, while non-Hispanic whites favoured (also in descending order) a physician, a person with cancer, a peer, a friend, and a teacher. Of special significance is the role of a priest or minister among Hispanic respondents. Priests or ministers are perceived to be credible, trustworthy, and to have behaviour change power by at least 70 % of the Hispanic respondents. Also of interest is the relatively low proportion of respondents of both ethnic groups who rated politicians and entertainers as having any of the qualities evaluated. Although athletes and newscasters were rated higher than politicians and entertainers, their perceived power to motivate behaviour change is fairly limited in comparison with that of the five optimal sources mentioned above.

Gender differences

There were some statistically significant differences in the proportion of Hispanic men and women who considered some of the sources as credible. Hispanic men (71.1 %) considered in lower proportions than women (80.8 %) that a priest or minister was a credible source of information on the health effects of cigarette smoking. The same was true for the perceived credibility of a pregnant woman where men (69.0 %) considered her to be credible in lower proportions than women (81.3 %). Gender-based statistically significant differences were also found among Hispanics for the perceived trustworthiness of a priest (69.9 % of men and 80.6 % of women) and of a pregnant woman (65.3 % of men *vs* 77.1 % of women). There were no statistically significant differences between Hispanic men and women in the proportions of respondents rating the various sources in terms of their expertise

although there were some differences in the perceived power of the various information sources to make a person quit smoking. Hispanic men differed from Hispanic women in the proportion of respondents rating the perceived behavioural power of a physician (83.8 % of men *vs* 93.3 % of women), of a priest or minister (61.0 % of men *vs* 72.8 % of women), of a newscaster (48.1 % of men *vs* 59.9 % of women), of a person with cancer (83.8 % of men *vs* 91.2 % of women), and of a pregnant woman (61.8 % of men *vs* 74.1 % of women).

Among non-Hispanic white respondents, gender-based statistically significant differences were less frequent. In terms of perceived credibility, a lower proportion of men (66.1 %) than of women (76.5 %) considered a teacher to be credible and the same was true for someone's parents (56.8 % of men *vs* 67.5 % of women), for a friend of the respondent (66.9 % of men *vs* 79.1 % of women), a child (30.9 % of men and 49.3 % of women), a peer (72.0 % of men and 81.5 % of women), and a pregnant woman (57.2 % of men and 68.3 % of women). There were no statistically significant differences based on the gender of the non-Hispanic white respondents for the ratings of expertise or of trustworthiness except for a child being perceived as more trustworthy by women (42.0 %) than by men (28.0 %) and the same was true for a person with cancer (86.4 % of women *vs* 77.7 % of men). A child was also perceived by lower proportions of non-Hispanic white men (30.7 %) than of women (43.0 %) as having sufficient motivational power to make a person quit smoking.

Differences due to acculturation level

Table 4 presents the proportions of Hispanic respondents, in terms of their acculturation level, who rated the various possible sources of information in each of the four measures. In general, the less-accultured Hispanic respondents rated the various sources as having each of the four properties in greater proportions than the more-accultured respondents. Nevertheless, there were two sources considered to have each of the four characteristics

Table 4 Evaluation of sources of information on cigarette smoking by acculturation level of Hispanic respondents

	Credibility		Expertise		Trustworthiness		Behavioural motivator	
	Acculturation		Acculturation		Acculturation		Acculturation	
	Low	High	Low	High	Low	High	Low	High
Actor	61.8	44.9*	38.0	23.4*	57.5	40.8*	50.1	26.4*
Singer	57.7	43.5	36.8	24.6	52.9	39.7	49.0	27.5*
Physician	93.9	91.3	94.6	94.9	96.0	94.3	90.5	86.8
Priest/minister	80.6	68.1	62.5	45.7*	80.7	65.5*	74.8	53.0*
Athlete	72.9	56.0*	56.8	41.1*	69.8	54.6*	65.7	41.4*
Politician	48.6	28.0*	35.9	19.4*	42.9	27.6*	46.2	22.1*
Teacher	77.2	74.7	68.2	59.4	76.1	70.7	68.8	57.5
Someone's parents	83.1	70.3*	71.0	45.7*	80.5	67.8	75.0	59.1*
Friend	81.1	75.8	60.5	43.4*	75.9	69.5	71.1	64.6
Child	62.4	49.5	32.1	25.1	58.3	44.8	64.9	50.3*
Similar peer	85.8	76.9	62.7	47.4*	79.0	71.3	79.5	64.6*
Newscaster	71.9	58.8	54.4	40.6	64.4	50.0	61.8	40.9*
Cancer patient	93.6	90.7	87.7	85.1	93.1	89.1	88.8	86.2
Pregnant woman	80.8	65.9*	68.1	49.1*	77.6	59.8*	75.3	55.2*

All χ^2 analyses were carried out between the two adjacent columns to the left of the asterisks. *df* = 1, 522; **p* < 0.001.

by the largest proportion of respondents within each acculturation level group (physician and person with cancer) and there were no statistically significant differences due to the respondents' level of acculturation. It is particularly interesting that a priest or minister was considered to have each of the various characteristics by a higher proportion of the less acculturated Hispanic respondents compared with the more acculturated. As was true for Hispanics and non-Hispanic whites in general, politicians and entertainers continue to be evaluated as having each of the four properties in fairly low proportions particularly among the less acculturated Hispanic respondents.

Discussion

The data reported here showed a number of statistically significant differences in the proportion of respondents assigning various perceived qualities to sources and channels of information regarding cigarette smoking. These differences were found to exist across ethnic groups (Hispanics and non-Hispanic whites), the respondents' gender (particularly among Hispanics), and the acculturation level of the Hispanic respondents. In many cases, Hispanics, and particularly the less-accultured Hispanics, rated each of the channels and sources of information as having the various characteristics in greater proportions than non-Hispanic whites. Nevertheless, there was a cluster of channels (printed media and television news) and of sources (physicians, people with cancer, friends, and peers) that were positively evaluated by large proportions of the respondents in both ethnic groups.

The similarities in the proportions of respondents of both ethnic groups that rated certain channels and sources as having the various characteristics is an encouraging finding that supports a number of current massive public health efforts to curtail the use of cigarettes in the United States. The fact that Hispanics tended to rate positively the various characteristics of most channels and sources in greater proportions than non-Hispanic whites may imply that culturally appropriate⁶ health education interventions using optimal sources and channels may have a greater chance at success among Hispanics than among non-Hispanic whites. This assumption is based on the significance of credibility, trustworthiness, expertise, and motivational power in producing behaviour changes.^{3, 8-10}

The high proportions of respondents of both ethnic groups who perceived physicians and people with cancer as having the various characteristics can be explained in terms of their perceived levels of expertise through direct contact with the effects of cigarette smoking. Attitude change research has shown that expertise is one of two key components in establishing the credibility of a source, the other being trustworthiness.¹ The high proportion of respondents rating a physician as an optimal source of information about the health effects of cigarette smoking is a finding that

replicates previous results on the perceived credibility of sources of AIDS information¹⁸ among Hispanics where a physician, an AIDS counsellor, and a person with AIDS were considered as the most credible sources of information, and with Johnson and Meishcke's study¹⁵ of cancer-related information where women again rated physicians very highly. These studies point to the need to develop appropriate strategies for the training of physicians in the delivery of tobacco education³⁶ that can provide a sense of self-efficacy to physicians and deal with other problems identified in the literature as deterrents for the involvement of physicians in tobacco control whenever they interact with patients.³⁷

The possible role of peers and friends in transmitting credible and trustworthy information on quitting cigarette smoking is another finding that is noteworthy here. The high ratings received by these two sources of information could point to the need to develop culturally appropriate interventions^{24, 25} that train friends and peers of smokers in culture-specific approaches to provide motivating messages that move smokers to obtain more information about quitting and actually trying to quit.

The high proportion of Hispanic respondents who rated positively a priest or a minister opens new possibilities for new sources of targeted health information. Previous experiences with African American communities^{38, 39} have shown promising results where ministers serve as sources of health information. The results of this study suggest that the same may be true among Hispanics, particularly Hispanic women. The literature on Hispanic religiosity has tended to show a strong respect for priests and ministers and a search for church-based community experiences.⁴⁰ Priests and ministers serving Hispanic communities could be trained to shape health-related behavioural norms including quitting of cigarette smoking.

Although these data were collected in two southwestern cities in the United States among predominantly Mexican American Hispanics, the data possibly could be generalised to other urban Hispanics who share the same norms, attitudes, and expectancies related to cigarette smoking. The data are, of course, limited by the fact that they were obtained by self-report. Future research should be designed to behaviourally validate these responses. Another possible limitation of the data is the fact that the universe of possible respondents was made up of households with telephones. While those universes are quite large given the low proportion of households with no telephone, short-term residents with no telephone may have been missed. Nevertheless it should be kept in mind that according to the 1990 census, a large proportion of Hispanics are urban residents (90.4%) compared with a much lower proportion (76.2%) of non-Hispanics. Future studies must also determine the possible differences between smokers and non-smokers in their perceptions of the various sources and channels of tobacco information.

Despite these limitations, the results reported above provide important guidelines for the design of targeted, culturally appropriate interventions that will control the tobacco epidemic among Hispanics in the United States. Choosing the optimal sources and channels of information as identified here, should produce more effective and efficient interventions.⁴¹⁻⁴³

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