

SMOKING CESSATION PRACTICES OF RURAL AND URBAN HEALTH CARE PROVIDERS

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ABSTRACT

The purpose of this descriptive research was to identify the similarities and differences of demographic characteristics, specific intervention practices, perceived barriers, and enhancement factors associated with smoking cessation interventions of rural and urban primary health care providers. A convenience sample consisted of 342 physicians, registered nurses, and advanced practice nurses with the majority of urban health care providers being younger aged physicians and advanced practice nurses compared to older, registered nurses in rural areas. Findings revealed minimal basic educational preparation of health care providers for smoking cessation interventions. Rural health care providers reported diverse, multiple practice settings with a generalist view, estimated that more of their clients smoked, and were less likely to assess clients' smoking practices and initiate smoking interventions. Consistent, strong curricula education at all health provider levels and continuing education for new and more effective strategies is essential to empower health care providers to address smoking cessation interventions consistently and effectively.

INTRODUCTION

An estimated 47 million or 25% of adult Americans currently smoke. Tobacco dependence is a chronic condition that causes disease and death in America with a societal cost of \$100 billion annually even though tobacco dependence is a preventable disease. It is estimated that more than 70% of all smokers want to quit smoking completely and need the assistance of their health care providers. Approximately 46% of smokers attempt to quit smoking each year and more than 70% of smokers visit a health care setting each year. Provider-delivered interventions are effective in promoting smoking cessation, especially with treatment intensity or minutes of contact (Centers of Disease Control and Prevention, 2002; Fiore et al. 2000; Satcher, 2001; U.S. Department of Health and Human Services [USDHHS], 2000b). The national health objective of *Healthy People 2010* requests that 75% of health care providers offer tobacco cessation

assistance to adult smokers (U.S. Department of Health and Human Services [USDHHS], 2000a). All health care providers need to be more cognizant and consistent in the identification, documentation, and treatment of every tobacco user encountered in a health care setting as smoking cessation promotes the client's health and quality of life.

BACKGROUND

Numerous studies have documented the similarities and differences of smoking cessation practices, attitudes, and interventions among various health care providers. Secker-Walker et al. (1994) compared the tobacco cessation practices of primary care physicians, dentists, dental hygienists, family planning counselors, community mental health counselors, and Women, Infants, and Children (WIC) counselors in four New England counties. Physicians and counselors were most likely to identify patients who used tobacco and counsel them about tobacco use. Kviz et al. (1995) compared physicians, nurse practitioners, and nurses to find that smoking cessation attitudes did not vary between groups; however, physicians and nurse practitioners were more likely to implement smoking cessation activities than nurses.

Zapka et al. (2000) reported that nurse practitioners and midwives were significantly more likely to counsel pregnant women about smoking cessation than physicians, nurses, and nutritionists. Consistency in monitoring tobacco usage and providing tobacco counseling at follow-up visits were low for all providers. Moody, Smith, and Glenn (1999) described the practice patterns of nurse practitioners (NP) in primary care in Tennessee and compared the findings with a national survey of office-based physicians. Findings revealed similar health care practices by both groups with the NP providing more health care to women, caring for a younger population, and implementing health education and counseling more frequently than physicians. The NP and physicians reported similar types of health education and counseling, such as nutrition counseling (19% compared to 15%), exercise counseling (12% compared to 7%), smoking cessation (7% compared to 2.5%), weight reduction (5% compared to 4%), and family planning (5% compared to 0.1%). The NP provided smoking cessation education three times more frequently than physicians.

Only one study addressed the smoking cessation practices, attitudes, and interventions of rural health care providers. Block, Hutton, and Johnson (2000) surveyed 614 rural dentists, chiropractors, primary care physicians, physician specialists, nurse practitioners, physician assistants, and public health nurses in 16 upper Midwestern counties about tobacco assessment practices of clients, intervention practices, attitudes, skills, barriers, and desire for tobacco education. Findings showed that 58.5% of all providers consistently assessed tobacco use; however, fewer providers (10%) offered consistent pharmacological interventions or referrals to community resources. Providers reported supportive attitudes toward interventions, awareness of community resources, and sufficient tobacco counseling skills. Low patient priority and lack of time for counseling were the common barriers to tobacco counseling. Approximately two-thirds of the providers desired further tobacco education.

There were no documented studies in the literature that addressed the similarities and differences in the smoking cessation practices, attitudes, and interventions of rural and urban health care providers. It was estimated that 20% of the American population lived in rural or non-metropolitan areas. Rural areas reported more elderly, mostly Caucasian, native-born residents with few minority residents. Rural residents were more likely to attain a high school education, experience lower incomes with higher levels of poverty, encounter lower levels of insurance coverage, perceive lower levels of health (fair to poor), sustain higher trauma mortality rates, specifically in motor vehicle accidents and gun-related incidences, experience higher rates of chronic diseases, report higher infant mortality rates, demonstrate less utilization of hospitals and health care providers, and use less preventive health screening than urban residents (Coburn & Bolda, 1999; National Center for Health Statistics [NCHS], 2001; Rural Information Center Health Services [RICHS], 2001a; Ricketts, Johnson-Webb, & Randolph, 1999).

Adults living in rural areas were more likely to smoke (27% in women and 31% in men) than adults living in urban areas (20% in women and 25% in men). Similarly, rural adolescents were more likely to smoke than urban adolescents (19% and 11% respectively). Two factors associated with higher rates of smoking in rural residents were lower educational attainment and limited access to medical and media resources for lifestyle changes. Rural areas reported less available health care providers (10% physicians, 25% of physician assistants, and 24% of nurse practitioners) than urban areas (Coburn & Bolda, 1999; NCHS, 2001; RICHS, 2001a; Ricketts, Johnson-Webb, & Randolph, 1999). Research is needed to determine if similarities and differences among rural and urban health care providers exist.

The research questions were as follows:

1. What are the demographic characteristics (type health care provider, age, gender, personal tobacco use, family or significant other tobacco use, and educational preparation of smoking cessation interventions) of rural and urban health care providers?
2. What are the characteristics of the work environment (type of practice setting, practice location, and perceived percentage of clients who smoke) in rural and urban health care providers?
3. What are the smoking assessment patterns, smoking cessation interventions, and prescribed pharmaceutical methods of rural and urban health care providers?
4. What are the perceived enhancement factors to implementing smoking cessation interventions of rural and urban health care providers?
5. What are the perceived barriers to implementing smoking cessation interventions of rural and urban health care providers?

METHODS

The purpose of this descriptive research was to identify the similarities and differences of demographic characteristics, specific intervention practices, perceived

barriers, and enhancement factors associated with smoking cessation interventions of rural and urban primary health care providers. The study was approved by four universities' institutional review boards. Primary health care providers were surveyed in three Regional Tobacco Use Prevention and Control Networks: Southeastern (Alabama and Virginia), Rocky Mountain (Colorado), and Western (Nevada). Diverse definitions and characteristics of rural and urban areas have been documented in the literature. For this study, rural was defined as territories, populations, and housing units not classified as urban generally located 15 to 30 miles from a community with a population no larger than 10,000 residents. Urban was defined as a community with a combined population of at least 50,000 from a central city and contiguous closely settled territory (Rural Information Center Health Service, 2001b; U.S. Census Bureau, 2001; U. S. Office of Management and Budget, 1994).

A convenience sample of 342 subjects was obtained from a population of primary health care providers listed in their professional society directories (medical and nursing). The selection of subjects was equitable. Each subject was contacted by telephone to explain the purpose of the study, confirm name and address, and obtain willingness to participate in the study. Each subject was mailed a cover letter that explained the purpose of the study, confidentiality of information, informed consent, names of principal and co-investigators, and institutional associations along with a questionnaire, and a self-addressed, stamped envelope. The return of a completed questionnaire served as consent of voluntary participation. A follow up letter and second copy of the questionnaire were mailed to subjects who did not respond in three weeks. Data were collected over eight weeks with a return rate of 46% (342 subjects).

Sample

The convenience sample consisted of physicians (MD), registered nurses (RN), and advanced practice nurses (APN), such as nurse practitioners and certified nurse midwives. The 230 rural health care providers were from a four-county continuum or contiguously close areas with a population range of 1,500 to 20,000 located in the eastern and southern regions of the United States. The rural areas were less populated with greater distances between towns or incorporated areas and consisted of fewer shopping opportunities and minimal health care services and providers than the urban areas. The 112 urban health care providers were from a two-county continuum or contiguously close areas with a population range of 40,000 to 80,000 located in the mid-western and western regions.

Measures

The Primary Care Health Provider Survey: Influences on Implementation of Smoking Cessation Practices is a 38-item, 5-point Likert scale that measured the demographic characteristics, specific smoking cessation intervention practices, perceived enhancement factors, and barriers associated with smoking cessation interventions. LaSala, the primary investigator, developed content items from the smoking cessation

concepts identified in the literature. Content validity was determined in a pilot study of 10 expert primary health care providers that were not subjects in the study. A content validity index was used to quantify the extent of agreement, assure clarity of items, and confirm the readability of items. Minor revisions of five items were based on the findings of the pilot study. A Cronbach alpha of .7740 confirmed reliability.

Data Analysis

Data were analyzed using the SPSS 11.0 for Windows for descriptive statistics and Pearson's product-moment correlation. Descriptive statistics were performed on all study variables. Means and standard deviations were calculated; means were in expected ranges and sufficient variation was present. Pearson's product-moment correlation of all items was obtained with the significant level of $p < .05$.

RESULTS

The first research question asked: What are the demographic characteristics (type health care provider, age, gender, personal tobacco use, family or significant other tobacco use, and educational preparation of smoking cessation interventions) of rural and urban health care providers? The major rural health care providers were registered nurses and the major urban health care providers were physicians. The majority of health care providers was aged 30.1 to 50 years, female, never smoked, no family members or significant others who smoked, and educational preparation about smoking cessation from combined resources for both rural and urban areas (Table 1). There was a significant difference in types of professional rural and urban health care providers (chi-square = 13.506, $p = .009$). There was a significant difference in the ages of the rural and urban health care providers (chi-square = 9.251, $p = .055$).

The second research question asked: What are the characteristics of the work environment (type of practice setting, practice location, and perceived percentage of clients who smoke) in rural and urban health care providers? The most commonly reported practice setting was family practice located in private clinics (Table 2). There was a significant difference in the primary focus of the practice setting of rural and urban health care providers (chi-square = 44.935, $p = .000$), type of practice setting of rural and urban health care providers (chi-square = 30.924, $p = .000$), and estimation of the percentage of clients that currently smoke by rural and urban health care providers (chi-square = 10.705, $p = .058$).

The third research question asked: What is the smoking assessment patterns, smoking cessation interventions, and prescribed pharmaceutical methods of rural and urban health care providers? Urban health care providers assessed clients' smoking practices more frequently than rural health care providers (70.7% and 68.7%, respectively) (Table 3). Rural health care providers were less likely to assess clients' smoking practices once or never (8.6% and 1.8% respectively) than urban health care providers. There was a significant difference in the frequency of initiating smoking interventions (chi-square = 9.728, $p = .045$), types of smoking cessation interventions most frequently recommended

Table 1
Demographic Characteristics of Rural and Urban Health Care Providers

Variable	Rural (n = 230)		Urban (n = 112)	
	n	%	n	%
Health care provider				
Physicians	75	32.6	51	45.9
Registered nurses	84	36.5	20	18.0
Advanced practice nurses	71	30.9	40	36.0
Age				
20-30 years	21	9.1	2	1.8
30.1-40 years	74	32.2	36	32.1
40.1-50 years	78	33.9	44	39.3
50.1-60 years	48	20.9	21	18.8
60.1 or more years	9	3.9	9	8.0
Gender				
Male	69	30.0	35	31.2
Female	161	70.0	77	68.8
Personal tobacco use				
Never smoked	145	63.0	74	66.0
Life-time (1-2 times)	29	12.6	12	10.7
Past smoker (>2 for some time)	48	20.9	20	17.9
Current "light" smoker (occasional)	5	2.2	6	5.4
Current "heavy" smoker (>2 daily)	3	1.3	0	0
Smoker in family or significant other				
Yes	92	40	37	33
No	138	60	75	67
Educational preparation				
Formal academia curriculum	20	9.1	4	3.6
Formal continuing education programs	10	4.3	5	4.5
Professional literature	22	9.6	10	8.9
Pharmaceutical literature or salesperson	4	1.7	3	2.7
Informal professional networking	30	13.0	10	8.9
Other (combinations of above)	143	62.2	80	71.4

N = 342

(chi-square = 15.744, $p = .072$), and pharmaceutical methods prescribed (chi-square = 22.905, $p = .011$).

The fourth research question asked: What are the perceived enhancement factors to implementing smoking cessation interventions of rural and urban health care providers? Both rural and urban health care providers strongly reported that a client's request for

Table 2
Characteristics of Work Environments

Variable	Rural (n = 230)		Urban (n = 112)	
	n	%	n	%
Primary focus of practice setting				
Pediatric	27	11.7	22	19.6
Family	77	33.5	45	40.2
Women	30	13.0	32	28.6
Adult	42	18.3	11	9.8
Other	54	23.5	2	1.8
Type practice setting				
Private clinic	101	43.9	72	64.2
Public clinic	30	13.0	15	13.4
Hospital	47	20.4	3	2.7
School	26	11.3	19	17.0
Other	26	11.3	3	2.7
Estimation of clients who currently smoke				
0	5	2.2	4	3.6
1-25%	97	42.2	63	56.3
25.1-50%	88	38.3	37	33.0
50.1-75%	28	12.2	7	6.3
75.1-100%	12	5.2	1	0.9

N = 342

smoking cessation intervention to be a strong enhancement factor and all other factors as having moderate enhancement to smoking cessation interventions (Table 4). There were no significant differences between rural and urban health care providers in relation to the 10 perceived enhancements for smoking cessation practices.

The fifth research question asked: What are the perceived barriers to implementing smoking cessation interventions of rural and urban health care providers? Both rural and urban health care providers strongly reported that lack of client commitment or compliance and the addictive mechanism of nicotine were perceived barriers to cessation interventions and moderately rated the other perceived barriers, i.e., time constraints, cost factors, community resources (Table 5). However, several health care providers expressed lack of clinical intervention skills (33.6% of rural and 21.4% of urban, respectively). The only significant barrier to implementation of smoking interventions between the rural and urban health care providers was the lack of perceived effectiveness of smoking cessation (chi-square = 8.188, $p = .085$).

Table 3
Assessment and Intervention Practices of Health Care Providers

Variable	Rural (n = 230)		Urban (n = 112)	
	n	%	n	%
Assessment of client smoking practices				
Never	10	4.3	2	1.8
Once	10	4.3	0	0
Several times (2-49%)	52	22.6	31	27.7
Frequently (50-99%)	113	49.1	58	51.8
Always (100%, every visit)	45	19.6	21	18.9
Initiation of smoking interventions				
Never	23	10.0	4	3.6
Once	13	5.7	2	1.8
Several times (2-49%)	100	43.5	44	39.3
Frequently (50-99%)	82	35.6	53	47.3
Always (100%, every visit)	12	5.2	9	8
Follow-up on smoking interventions				
Never	36	15.7	11	9.8
Once	13	5.7	4	3.6
Several times (2-49%)	107	46.5	51	45.5
Frequently (50-99%)	62	26.9	41	36.6
Always (100%, every visit)	12	5.2	5	4.5
Smoking cessation interventions				
None	26	11.3	4	3.6
Self-help materials	34	14.8	13	11.6
Individual counseling	33	14.3	12	10.7
Group counseling	4	1.7	3	2.7
Combination of above methods	133	57.8	80	71.4
Pharmaceutical methods prescribed				
None	39	16.9	24	21.4
Nicotine gum	3	1.3	2	1.8
Nicotine replacement patches	26	11.3	4	3.6
Nicotine inhalers or sprays	13	5.7	13	11.6
Zyban	36	15.6	17	15.2
Other (combinations of above)	113	49.1	52	46.4

N = 342

Table 4
Perceived Enhancements to Implement Smoking Cessation Interventions

Variable	Rural (n = 223)		Urban (n = 112)	
	n	%	n	%
Health risks of smoking behaviors				
None	5	2.2	5	4.5
Mild	25	11.2	11	9.8
Neutral	25	11.2	12	10.7
Moderate	92	41.3	45	40.2
Strong	76	34.1	39	34.8
Long-term costs for client				
None	18	8.1	6	5.4
Mild	51	22.7	25	22.3
Neutral	53	23.8	26	23.2
Moderate	66	29.6	40	35.7
Strong	35	15.7	15	13.4
Client request for cessation intervention				
None	8	3.6	2	1.8
Mild	17	7.6	6	5.4
Neutral	30	13.5	15	13.4
Moderate	55	24.6	26	23.2
Strong	113	50.7	63	56.3
Reimbursement for intervention				
None	30	13.5	20	17.9
Mild	31	13.9	15	13.4
Neutral	58	26.0	30	26.8
Moderate	65	29.1	30	26.8
Strong	39	17.5	17	15.2
Personal skill and knowledge of interventions				
None	7	3.1	2	1.8
Mild	17	7.6	10	8.9
Neutral	45	20.2	26	23.2
Moderate	112	50.2	49	43.8
Strong	42	18.8	25	22.3
Availability of community resources for referral				
None	18	8.1	5	4.5
Mild	33	14.8	16	14.3
Neutral	67	30.0	27	24.1
Moderate	75	33.6	52	46.4
Strong	30	13.5	12	10.7

Personal peer support and encouragement				
None	13	5.8	5	4.5
Mild	24	10.8	14	12.5
Neutral	65	29.1	38	33.9
Moderate	96	43.0	46	41.1
Strong	25	11.2	9	8.0
Media-tobacco campaigns				
None	25	11.2	6	5.4
Mild	54	24.2	34	30.3
Neutral	74	33.2	27	24.1
Moderate	56	25.1	38	33.9
Strong	14	6.3	7	6.3
Law & public policy restrict smoking in public places				
None	22	9.9	13	11.6
Mild	44	19.7	22	19.6
Neutral	58	26.0	24	21.4
Moderate	70	31.4	34	31.3
Strong	29	13.0	18	16.1
Personal commitment to implement interventions				
None	3	1.3	1	0.9
Mild	13	5.8	7	6.3
Neutral	35	15.7	16	14.3
Moderate	101	45.3	42	37.5
Strong	71	31.8	46	41.0

N = 335

DISCUSSION AND RECOMMENDATIONS

This research provides the first comparative view of demographic characteristics, work environment characteristics, smoking assessment patterns, smoking cessation interventions, prescribed pharmaceutical methods, and perceived enhancement factors and barriers to implementing interventions of rural and urban health care providers across four geographical areas. The results of this study must be interpreted with caution because of the nonrandomized, convenience sample and the inequity of numbers of the two groups' participants. There are a greater number of rural health care providers (67.3%) than urban health care providers (32.7%) that participated in this study. The majority of the urban health care providers consisted of younger aged physicians and advanced practice nurses compared to rural health care providers (81.9% and 63.5% respectively) who used prescriptive authority and possibly viewed the questions from a different perspective than RNs. The rural health care providers consisted of more registered nurses (36.5% and 18% respectively) than the urban health care providers. Findings revealed that the majority of the sample consisted of older women who had

never smoked and reported combined resources for educational preparation for smoking cessation interventions. Block, Hutton, and Johnson (2000), Kviz et al. (1995) and Zapka et al. (2000) reported similar findings of providers related to age, gender, and educational preparation.

Table 5

Health Care Providers Perceived Barriers to Implementation of Smoking Interventions

Variable	Rural (n = 223)		Urban (n = 112)	
	n	%	n	%
Time constraints of practice setting				
None	12	5.4	4	3.6
Mild	42	18.8	19	17.0
Neutral	38	17.0	18	16.1
Moderate	78	35.0	51	45.5
Strong	52	23.8	20	17.8
Cost factors for client				
None	19	18.5	5	4.5
Mild	30	13.5	8	7.1
Neutral	36	16.1	21	18.8
Moderate	84	37.7	52	46.4
Strong	54	24.2	26	23.2
Lack of clinical intervention skills or knowledge of interventions				
None	37	16.6	28	25.0
Mild	50	22.4	32	28.6
Neutral	61	27.4	28	25.0
Moderate	54	24.2	15	13.4
Strong	21	9.4	9	8.0
Lack of perceived effectiveness of interventions				
None	19	8.5	16	14.3
Mild	37	16.6	26	23.2
Neutral	57	25.6	32	28.6
Moderate	89	39.9	28	25.0
Strong	21	9.4	10	8.9
Lack of reimbursement				
None	31	13.9	15	13.4
Mild	29	13.0	15	13.4
Neutral	47	21.1	33	29.5
Moderate	74	33.2	29	25.9
Strong	42	18.8	20	17.9

Lack of community resources for referral				
None	21	9.4	11	9.8
Mild	43	19.1	28	25.0
Neutral	58	26.0	27	24.1
Moderate	70	31.4	35	31.3
Strong	31	13.9	11	9.8
Lack of client interest				
None	4	1.8	2	1.8
Mild	8	3.6	4	3.6
Neutral	17	7.6	8	7.1
Moderate	76	34.1	30	26.8
Strong	118	52.9	68	60.7
Lack of client commitment or compliance				
None	4	1.8	2	1.8
Mild	8	3.6	4	3.6
Neutral	15	6.7	8	7.3
Moderate	66	29.6	31	28.2
Strong	130	58.3	67	59.8
Addictive mechanisms of nicotine				
None	6	2.7	3	2.7
Mild	10	4.5	5	4.5
Neutral	26	11.7	9	8.0
Moderate	76	34.0	33	29.5
Strong	105	47.0	62	55.4
Media or advertisement influence				
None	22	9.9	6	5.4
Mild	34	15.2	21	18.8
Neutral	58	26.0	27	24.1
Moderate	77	34.5	34	32.1
Strong	32	14.3	22	19.6
Personal beliefs associated with smoking				
None	125	56.1	72	64.0
Mild	27	12.1	8	7.1
Neutral	39	17.5	22	19.6
Moderate	19	8.5	3	2.7
Strong	13	5.8	7	6.3

N = 335

The rural health care providers reported diverse, multiple practice settings with a generalist view compared to urban health care providers who reported private practice settings in family or specialty areas. Rural health care providers estimated that more of their clients smoked than the clients of urban health care providers. These findings are congruent with the known characteristics of rural residents (Cobrun & Bolda, 1999; NCHS, 2001; RICHHS, 2001a; Ricketts, Johnson-Webb, & Randolph, 1999).

The health care providers of this study indicated the need for more knowledge, skills, and confidence to assess, initiate, and follow up on smoking interventions. This finding was supported by Block, Hutton, and Johnson (2000). Consistent and strong curricula education at all health provider levels about tobacco use, nicotine dependence, and cessation interventions is critical to empower health care providers to address smoking cessation interventions effectively.

Rural health care providers were less likely to assess clients' smoking practices and to initiate smoking interventions. Urban health care providers were more likely to initiate smoking interventions that consisted of combined methods, i.e. counseling, self-help materials, group counseling, and pharmaceutical methods of nicotine patches, sprays, or Zyaban. These findings were comparable to the study by Kviz et al. (1995). Continuing education of all health care providers is essential for learning new and more effective strategies for smoking cessation. Possibly more continuing education programs need to be available to rural health care providers or they should focus on other accessible resources, such as journals or Internet resources (Table 6).

Table 6
Tobacco Resources for Clinicians

Website	URL
Agency for Healthcare Research and Quality	http://www.ahrq.gov
American Heart Association	http://www.americanheart.org
American Lung Association	http://www.lungusa.org
Center for Disease Control	http://www.cdc.gov/tobacco
National Cancer Institute	http://www.mci.nih.gov
Nicotine Anonymous	http://www.nicotine-anonymous.org
Nursing Spectrum (continuing education)	http://www.nursingspectrum.com
Quick Reference Guide for Clinicians	http://www.surgeongeneral.gov/tobacco/tobaqrg
Quit Net	http://www.quitnet.com

It is critical that health care providers implement smoking cessation interventions. The U.S. Public Health Service provided specific evidenced-based recommendations for brief, intensive, or system-level changes for tobacco cessation interventions. The five step plan consisted of the 5 A's:

1. Ask-systematically identify all tobacco users at every visit,
2. Advise-strongly urge all tobacco users to quit,
3. Assess - determine willingness to make a quit attempt,
4. Assist - aid the client in quitting, and
5. Arrange - common elements of practical counseling (problem solving, skills training, intratreatment supportive and extratreatment supportive interventions (Centers of Disease Control and Prevention, 2000; Fiore et al. 2000; Spoljoric, 2000; USDHHS, 2000b).

Health care providers have multiple client opportunities to address smoking cessation. Health care providers armed with enhanced knowledge, confidence, and an intervention plan will achieve the Healthy People 2010 goal to consistently assess and initiate smoking cessation interventions of clients (USDHHS, 2000a). Further research is required about rural and urban health care providers' practice patterns of clients' smoking cessation to determine if this study's results are comparable to other regions of the United States. A larger, more equitable randomized sample of similar health care providers is essential to determine significant similarities and differences between and among groups. The characteristics and needs of rural and urban residents are different; therefore, further research is needed to determine if smoking cessation interventions for each area's residents should be the same or different.

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