

PERCEPTION OF RELIABILITY OF HUMAN IMMUNODEFICIENCY VIRUS/AIDS INFORMATION SOURCES

E. James Essien, MD, DrPH, Michael W. Ross, PhD, MPH, Adriana C. Linares, MD, MPH, and Nora I. Osemene, PharmD

Houston, Texas

The sources of human immunodeficiency virus (HIV)/AIDS information as well as the perception of reliability of information from these sources may have a significant impact on the effectiveness of HIV risk reduction messages in reaching high risk populations. We examined the sources of HIV information and the perception of reliability of information from these sources among African Americans ($n = 441$), Hispanic Americans ($n = 456$), and whites ($n = 297$), in Houston, Texas. The data revealed that African Americans and Hispanics were most likely to receive their HIV/AIDS information from the "media" compared with whites who received most of their information from "government agencies and professionals." Information from "family, friends and schools" were regarded as the least reliable by respondents from all three ethnic groups. The data also showed that perceptions of reliability of information sources were influenced by level of educational attainment. Implications for designing target audience-specific intervention strategies for the prevention of the spread of HIV disease are discussed. (*J Natl Med Assoc.* 2000;92:269-274.)

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Health education research on persuasion has revealed that the effectiveness of human immunodeficiency virus (HIV) risk reduction messages in reaching high risk populations is affected by the recipient's perception of the reliability of the information source.¹⁻³ In addition, the choice of the HIV risk reduction messenger has been observed to be a determinant of the target population's willingness to accept and act upon an HIV/AIDS prevention

message.⁴ Meanwhile, communication and persuasion experts^{3,5,6} have argued that there are four major components to any persuasive communication: first, the actual message; second, the originator or source of the message; third, the medium or channel of communication; and fourth, the receiver. Marin and Marin⁶ contend that two of these components (source and channel) are particularly sensitive to intervention in health education campaigns designed to reduce high risk sexual behaviors.

Despite the fact that efforts to limit the spread of HIV disease have relied on campaigns that utilize several information channels such as public service announcements on television and radio, print advertisements, and community-based interventions to disseminate HIV risk reduction information, very few studies have examined the sources and channels

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of HIV information in different minority subgroups and the perception of reliability of this information.⁷ There is limited research investigating where or how minority populations get HIV information, little is known about the perceived reliability of information from these sources, and it is not known whether there are differences in the perception of reliability of HIV information sources between whites and minority populations in the United States. Bakker⁸ has highlighted that understanding the possible individual differences regarding how HIV/AIDS material is presented and accepted as well as the group norms regarding the meaning of this information may enhance the probability of selecting appropriate target audience-specific intervention strategies for the prevention of the spread of HIV disease.

Given that minority populations have been disproportionately burdened by the impact of HIV disease, the authors would argue that the effectiveness of HIV information sources in reaching high risk minority populations as well as the perceived reliability of this information may have an impact on the incidence of HIV disease in these populations. Thus, understanding the sources of HIV information in minority populations as well as the perceived reliability of information from these sources could have significant implications for designing HIV prevention campaigns that are effective and responsive to the needs of the target populations. The present exploratory study sought to determine: 1) the sources where minority populations secured HIV/AIDS information, 2) their perception of reliability of information from these sources, 3) the differences in perception of reliability of HIV information sources between whites and minority populations, and 4) the differences in perception of reliability of HIV information sources among the study populations by gender and educational attainment.

METHODS

Subjects and Data Collection Procedures

Data for the present analysis came from a larger community-based, anonymous survey of the Texas Southern University Research Centers in Minority Institutions Program. The survey was designed to determine knowledge, misconceptions, and sources of information in minority populations regarding HIV transmission. The study relied on self-adminis-

tered questionnaires for its data. Subjects were recruited from public parks, mass transit locations, malls and shopping centers in the Southwest and Downtown areas of Houston, Texas. These neighborhoods have substantial African American and Hispanic representations. Data were collected between January 1997 and June 1998. Inclusion criteria were: African, Mexican, or white American ethnicity and age above 18. Trained interviewers asked members of these ethnic groups to participate in the study and explained the purpose of the study. All participants were advised that they could refuse to answer any questions and that their participation was totally voluntary. Those who agreed to participate were given the questionnaire to complete and deposit in a sealed box designated for that purpose, and those who refused to participate were counted as nonresponders. Lack of time was the excuse given by most of the nonresponders. All interviews were conducted in English. Because the study was anonymous and voluntary, return of the questionnaire was taken as evidence of consent. The study was approved by the relevant university ethics committee.

Measurements

Measurements used for the present study were derived from the results of a preliminary qualitative focus group study with African American and Mexican American populations in Houston, Texas.⁹ The research instrument was pilot-tested for readability and clarity with a subsample of the target populations and experts working in the field. The final version of the questionnaire contained 77 items, mostly closed-end questions, and took approximately 30 min to complete. The items measuring HIV/AIDS information source read: "Where do you get *most* of your HIV/AIDS information? (circle one)." The choices included: 1) school, 2) parents, 3) friends, 4) doctor's office, 5) brother/sister, 6) television, 7) radio, 8) newspaper, 9) government agency, 10) gym/college coaches, 11) health educator, and 12) public library. Two items measured perceived reliability of HIV information source and read: "Which of the following do you regard as the *most (least)* reliable source of HIV information? (circle one)." The choices were the same as in the source of information.

Table 1. Demographic Characteristics of the Study Sample*

	African Americans (n = 441)	Hispanic Americans (n = 456)	Whites (n = 297)
Sex			
Male	206 (46.7%)	252 (55.3%)	200 (67.3%)
Female	235 (53.3%)	204 (44.7%)	97 (32.7%)
Age (years)			
18–29	122 (27.7%)	208 (45.6%)	36 (12.1%)
30–39	195 (44.2%)	162 (35.5%)	164 (55.2%)
40–49	111 (25.2%)	77 (16.9%)	92 (31.0%)
50+	11 (2.5%)	8 (1.8%)	5 (1.7%)
	Missing n = 2	Missing n = 1	
Education			
High school/GED	236 (53.5%)	314 (68.9%)	89 (30.0%)
Above high school	203 (46.0%)	131 (28.7%)	202 (68.0%)
	Missing n = 2	Missing n = 11	Missing n = 6
Income			
Legally employed	249 (56.5%)	199 (43.6%)	188 (63.5%)
Welfare	75 (17.0%)	80 (17.6%)	71 (24.0%)
Illegal activities	117 (26.6%)	164 (36.0%)	34 (11.5%)
		Missing n = 13	Missing n = 4

Note: as a result of missing data, some of the percentages do not sum to 100.

Sample and Data Analysis

The investigative team contacted 854 African Americans at 17 study sites. Of this number, 441 (52%) agreed to participate in the study. A total of 812 Hispanic Americans were contacted at 19 study sites out of which 456 (56%) agreed to participate in the study. Five hundred and six whites were contacted at nine study sites. Of this number, 297 (58%) completed the study questionnaire. Data were entered in SPSS-readable format for analysis on a PC. Based on conceptual strategies, some of the items were recoded to create a limited number of variables for data analysis. Using an intuitive concentric circle model of connectedness, three discrete categories were created to summarize the different HIV/AIDS information sources (Wong et al., unpublished data,). Specifically, because people are believed to be connected with “family, friends, and schools” on a daily basis, we combined schools, parents, friends, and brothers/sisters to form “family, friends, and schools.” Doctor’s office, government agency, college coaches, and health educators were combined to form “government agencies and professionals.” Television, radio, newspaper, and public library were combined to form “media.” As a result of missing data, some of the percentages do not sum to 100. In addition, ‘Not applicable’ re-

sponses were recoded as missing data in all items. Statistical analysis involved both inter- and intra-group analysis so as to allow for a closer examination of the robustness of the findings. The demographic variables and information-seeking variables were analyzed, and frequencies, cross-tabulations, and comparisons by ethnicity were performed for the variables of interest. The differences in the proportions were assessed by means of the chi-square test (separate variance estimates), and probabilities of <0.05 were considered significant.

RESULTS

The total sample consisted of 1194 individuals (441 African Americans, 456 Hispanic Americans, and 297 whites). As shown in Table 1, there were more male participants than females in the Hispanic American and white samples, whereas females comprised a majority of the African-American sample. A majority of the African Americans (44%) and whites (55%) were in age group 30 to 39, whereas most of the Hispanic Americans (46%) were in the 18- to 29-year age group. More whites (68%) had a level of education that was above high school than did the African Americans (46%) and Hispanic Americans (29%). Correspondingly, more whites

Table 2. Perceived Reliability of HIV/AIDS Information Sources by Ethnicity

	African Americans (n = 441)	Hispanic Americans (n = 456)	Whites (n = 297)
Source* †			
Family, friends, and schools	112 (25.7%)	133 (29.3%)	51 (17.6%)
Government agencies and professionals	160 (36.7%)	132 (29.1%)	142 (49.1%)
Media	164 (37.6%)	189 (41.6%)	96 (33.2%)
	Missing n = 5	Missing n = 2	Missing n = 8
Most reliable source* ‡			
Family, friends, and schools	81 (18.7%)	102 (22.6%)	32 (11.1%)
Government agencies and professionals	293 (67.5%)	273 (60.4%)	243 (84.1%)
Media	60 (13.8%)	77 (17.0%)	14 (4.8%)
	Missing n = 7	Missing n = 4	Missing n = 8
Least reliable source‡			
Family, friends, and school	258 (59.3%)	244 (53.9%)	172 (59.5%)
Government agencies and professionals	116 (26.7%)	118 (26.0%)	73 (25.3%)
Media	61 (14.0%)	91 (20.1%)	44 (15.2%)
	Missing n = 6	Missing n = 3	Missing n = 8

* $p < 0.0001$.

†The question measuring HIV/AIDS information sources read: "Where do you get *most* of your HIV/AIDS information? (Circle one)." The choices included: 1) school, 2) parents, 3) friends, 4) doctor's office, 5) brother/sister, 6) television, 7) radio, 8) newspaper, 9) government agency, 10) gym/college coaches, 11) health educator, and 12) public library. The three categories were created by combining school, parents, friends, and brother/sister to form "Family, Friends, and Schools"; doctor's office, government agency, gym/college coaches, and health educator to form "Government agencies and professionals"; and television, radio, newspaper, and public library to form "Media."

‡The two questions measuring perceived reliability of HIV/AIDS information sources read: "Which of the following do you regard as the *most (least)* reliable source of HIV information? (Circle one)." The choices were the same as in source of information.

(63%) were legally employed than were African Americans (56%) and Hispanic Americans (43%).

Table 2 displays the sources where participants received HIV/AIDS information as well as the perception of reliability of information from these sources. Overall, the study revealed that African Americans and Hispanic Americans were most likely to receive HIV/AIDS information from the "media" than were whites who received information about HIV/AIDS from "government agencies and professionals" ($\chi^2(4) = 32.26, p < 0.0001$). However, information about HIV/AIDS that emanated from "government agencies and professionals" was perceived as reliable and credible by most of the respondents from all three ethnic groups ($\chi^2(4) = 48.21, p < 0.0001$). Consistent with research findings from a previous qualitative focus groups study with these populations,¹⁰ information from "family, friends, and schools" was considered as the least reliable across the three ethnic groups. This study also sought to identify differences among the study

groups by gender. Checks for differences in sources of HIV/AIDS information as well as perception of the reliability of information from these sources were carried out and no significant differences were apparent except in the Hispanic sample. More Hispanic American males (59%) than females (47%) perceived "family, friends, and schools" as the least reliable source of HIV information ($\chi^2(2) = 9.18, p < 0.01$).

The results also revealed some interesting findings pertaining to the effect of level of educational attainment on sources of HIV information and perceived reliability of information from these sources. As shown in Table 3, among African Americans, the less educated (those who had a high school education or less) did not show a substantial preference for any particular information source, whereas the better educated (those with more than a high school education) received most of their information about HIV/AIDS from "government agencies and professionals" ($\chi^2(2) = 13.89, p < 0.001$). However, a significant number of participants from both

Table 3. Perception of Reliability of HIV/AIDS Information Sources by Level of Educational Attainment

	African Americans (%)		Hispanic Americans (%)		Whites (%)	
	<HS*	>HS	<HS	>HS	<HS	>HS
Source						
Family, friends, and schools	32.4	18.4†	23.6	40.8†	17.4	17.8
Government agencies and professionals	30.1	44.0	31.4	24.6	51.2	48.7
Media	37.5	37.6	45.0	34.6	31.4	33.5
Most reliable source						
Family, friends and schools	22.9	14.0†	20.1	28	14	10.0‡
Government agencies and professionals	62.9	73.0	63.2	53.4	77	87
Media	14.2	13.0	16.6	18.6	9	3.0
Least reliable source						
Family, friends, and schools	60	59	58.4	41.5†	48.8	63.9‡
Government agencies and professionals	28	25	25.6	26.9	33.7	21.3
Media	12	16	16.0	31.5	17.4	14.7

* <HS, did not complete high school; >HS, completed high school.
† $p < 0.001$.
‡ $p < 0.05$.

groups perceived information from the government as reliable ($\chi^2(2) = 6.21, p < 0.045$). To some extent, the pattern was different for Hispanic Americans. Most of the less educated Hispanic Americans (45%) obtained information about HIV/AIDS from the media, whereas the better educated ones (41%) received HIV-related information from "family, friends and schools" ($\chi^2(2) = 15.63, p < 0.001$). Nonetheless, both categories of Hispanics perceived information from "government agencies and schools" as reliable, and information from "family, friends, and schools" as unreliable ($\chi^2(2) = 15.63, p < 0.001$). Concerning white Americans, the study revealed that the educated as well as the less educated whites received HIV information from "government agencies and professionals"; perceived information from "government agencies and professionals" as reliable ($\chi^2(2) = 6.22, p < 0.044$); and perceived information from "family, friends, and schools" as the least reliable ($\chi^2(2) = 6.26, p < 0.044$).

DISCUSSION

These data must be interpreted with the caveat that they are not based on a random-sampling frame and are opportunistic in nature, albeit with a large sample covering race/ethnicity and gender groups. Nevertheless, there are some striking trends apparent in these data, which have implications for

how health care messages are transmitted and are likely to be received. First, African-American and Hispanic participants of this sample were most likely to receive their information from the media, whereas those who were white were most likely to report receiving HIV/AIDS information from government agencies and professionals. These data, along with other data on misconceptions of minorities about the role played by the government in developing or disseminating HIV,¹⁰ suggest that, in the absence of trust for governmental sources, the media are a major information source. It is also interesting that family, friends, and schools are considered the least reliable. The implications of this for health promotion messages are significant, given that role-model stories are among the more important sources of health information and motivation to change behaviors.^{11,12}

It is also apparent that educational levels impact perceived reliability of sources. The better educated African Americans received most of their information from government sources and professionals compared with the less educated, who tended to receive most of their information from the media. In contrast, most of the educated Hispanics in the study sample obtained HIV/AIDS information from family, friends, and schools. There were no significant differences among the educated and less educated whites regarding sources of information. In addition, more of the better educated African

Americans and whites perceived information from government agencies and professionals as reliable. However, this pattern was reversed for the Hispanic sample, with more of the less educated Hispanics perceiving information from government agencies and professionals as reliable.

These data suggest that source of information about HIV/AIDS may vary between racial/ethnic groups, and across levels of education within such groups. There are clear implications for design of public health media interventions. First, messages may need to be targeted differently for different educational levels, using different sources. Second, role model stories in small and electronic and large media that portray people as friends or family may be seen as less reliable and have a lower impact than messages seen as coming from professionals. Third, in groups where there is suspicion that the government is not honest about its involvement in the HIV epidemic, information obtained from the government may not be advisable to attempt to modify behavior. We conclude that a more detailed understanding of differences across ethnic/racial groups in terms of the most common sources of information and the perceived reliability of information is important before choosing the vehicle and source of HIV/AIDS prevention messages.

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REFERENCES

1. Guttman N, Boccher L, Salmon H. Credibility of information from official sources on HIV/AIDS transmission. *Public Health Rep.* 1998;113:465-471.
2. Herek G, Capitanio J. Conspiracies, contagion, and compassion. trust and public reactions to AIDS. *AIDS Educ Prev.* 1994;6:365-375.
3. McGuire WJ. Attitudes and attitude change. In: Lindzey G, Aronson G, eds. *Handbook of Social Psychology.* 3rd ed. New York: Random House; 1985:233-246.
4. Jemmott LS, Catan V, Nyamathi A, Anastasia J. African American women and HIV-risk-reduction issues in: O'Leary A, Jemmott L, eds. *Women at Risk: Issues in the Primary Prevention of AIDS.* New York: Plenum Press; 1995.
5. Bettinghaus EP. *Persuasive Communication.* New York: Holt, Rinehart and Winston; 1980.
6. Marin G, Marin B. Perceived credibility of channels and sources of AIDS information. *AIDS Educ Prev.* 1990;2:154-161.
7. Wolitski RJ, Bensley L, Corby NH, Fishbein M, Galavotti C. Sources of AIDS information among low-risk and at-risk population in five U.S. cities. *J Community Health.* 1996;21:293-310.
8. Bakker AB. Persuasive communication about AIDS prevention: need for cognition determines the impact of message format. *AIDS Educ Prev.* 1999;11:150-162.
9. Essien EJ, Meshack AF. HIV/AIDS Misperceptions and Barriers to Risk Reduction among African Americans and Hispanics in Houston, Texas. *Proceedings of the 15th Annual General Meeting of the Association of Teachers of Preventive Medicine and American College of Preventive Medicine.* San Francisco. April. 1998:2-5.
10. Essien EJ, Waddy GL. Myths, Misconceptions, and Sources of HIV Information among African American and Hispanic Populations in Houston, Texas. *Proceedings of the 5th RCMI International AIDS Symposium.* San Juan, Puerto Rico November. 1996:10-12.
11. Bandura A. *Social Foundations of Thoughts and Action.* Englewood Cliffs, NJ: Prentice-Hall; 1986.
12. McAlister AL, Puska P, Orlandi M, Bye LL, Zyblot PI. Behavior modification: principles and and illustrations. In: Holland WW, Detels R, Know G, eds. *Oxford Textbook of Public Health.* 2nd ed. Oxford, UK: Oxford University Press; 1991:3-16.