AIDS Stigma and Contact With Persons With AIDS: Effects of Direct and Vicarious Contact[1]

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Abstract

This paper examines the relationship between AIDS-related stigma and (1) direct, personal contact with people with AIDS (PWAs), and (2) vicarious contact – through mass media – with a public figure with AIDS or HIV. Data are presented from a 2-wave national telephone survey with a probability sample of U.S. adults (ns = 538 at Wave 1; 382 at Wave 2) and an oversample of Black Americans (ns = 607 and 420, respectively). Direct contact with a PWA was associated with less support for coercive AIDS policies, less blame for PWAs, and less avoidance of PWAs. Vicarious contact – operationalized as the self-reported impact of Earvin "Magic" Johnson's disclosure of his HIV infection, which occurred shortly before Wave 2 data collection began – appeared to have its greatest impact among respondents who previously had manifested high levels of stigma. In that group, levels of stigma diminished somewhat to the extent that respondents reported having been strongly influenced by Johnson's announcement. Some differences between the general population sample and the Black oversample were observed in the relative impact of direct and vicarious contact. Although direct contact was negatively correlated with stigma, the best predictors of stigma were respondents' attitudes toward gay men and their beliefs about casual contact. Implications of the findings for reducing AIDS stigma are discussed.

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In studying majority group prejudices against members of stigmatized minority groups, psychologists have focused considerable attention on the effects of intergroup contact on attitudes. Much of this research has been guided by the contact hypothesis, which posits that: "Prejudice (unless deeply rooted in the character structure of the individual) may be reduced by equal status contact between majority and minority groups in the pursuit of common goals. The effect is greatly enhanced if this contact is sanctioned by institutional supports (i.e., by law, custom, or local atmosphere), and

if it is of a sort that leads to the perception of common interests and common humanity between members of the two groups" (Allport, 1954, p. 267). A large body of empirical research has shown that contact can indeed reduce prejudice when it is sustained and intimate, between individuals of equal status who share important goals, and supported by the institution within which it occurs (Amir, 1976; Brewer & Miller, 1984; Stephan, 1985).

The contact hypothesis focuses on majority group members' *direct contact* experiences, that is, their personal, face-to-face interactions with members of a stigmatized group. The mass media in American society, however, have greatly expanded opportunities for *vicarious contact*. We define vicarious contact as an individual's subjective feeling that she or he has a quasi-personal relationship with someone else solely as a result of extensive exposure to that other person through mass media. Of necessity, the object of vicarious contact is a public figure – e.g., a performer, politician, athlete, activist, or criminal – who enjoys some degree of celebrity or notoriety. Unlike direct contact, vicarious contact is unidirectional. Whereas many people can experience vicarious contact with a particular public figure, the celebrity is unlikely to know them or to communicate with them directly. Vicarious contact differs from mere exposure (e.g., Bornstein, 1993; Zajonc, 1968) in that it includes a reinforcement component: One's experiences with the object of vicarious contact are not affectively neutral or unreinforced. Rather, vicarious contact is likely to be associated with intense feelings, such as excitement (e.g., from watching a star athlete in action), pleasure (e.g., from hearing a talented musician perform), or anger (e.g., from having one's deeply-held values directly challenged by a politician). In addition, the person experiencing vicarious contact often has access to a considerable amount of information about the target individual through, for example, exposure to personal interviews in print and electronic media or news coverage of the public figure's activities.

The goal of the present paper is to assess the effects of direct and vicarious contact on public attitudes toward people with AIDS (PWAs). AIDS remains a highly stigmatized illness in the United States (Herek, 1990; Herek & Capitanio, 1993; Pryor & Reeder, 1993) and throughout the world (Mann, Tarantola, & Netter, 1992; Panos Institute, 1990; Sabatier, 1988). *AIDS-related stigma* (or, more simply, *AIDS stigma*) is used here to refer to prejudice, discounting, discrediting, and discrimination directed at people perceived to have AIDS or HIV, as well as the individuals, groups, and communities with which they are associated (Herek, 1990; Herek & Glunt, 1988). As with bubonic plague in the 14th century (e.g., Defoe, 1960; McNeill, 1976), cholera in the 19th century (Rosenberg, 1987), and syphilis throughout the 19th and 20th centuries (Brandt, 1987), the stigma attached to AIDS and to the social groups perceived to be associated with it has inflicted additional suffering on sick individuals and their loved ones, hampered treatment and prevention, and hindered society's response to the epidemic.

AIDS stigma is manifested in a variety of ways. Survey research has consistently shown that a significant minority of the U.S. public harbors negative feelings toward PWAs and favors coercive measures against them such as quarantine (e.g., Blendon & Donelan, 1988; Blendon, Donelan, & Knox, 1992; Herek & Capitanio, 1993; Herek & Glunt, 1991; Price & Hsu, 1992). PWAs have been more negatively evaluated than persons with other diseases, even by health care workers and mental health professionals (e.g., Blumenfield, Smith, Milazzo, Seropian, & Wormser, 1987; Crawford, Humfleet, Ribordy, Ho, & Vickers, 1991; Gerbert, Maguire, Bleecker, Coates, & McPhee, 1991; Kelly, St. Lawrence, Smith, Hood, & Cook, 1987; Knox, Dow, & Cotton, 1989; St. Lawrence, Husfeldt, Kelly, Hood, & Smith, 1990; Triplet & Sugarman, 1987). Fear and hostility toward PWAs appears to be greatest among heterosexuals who express negative attitudes toward gay people (e.g., Ambrosio & Sheehan, 1991; Anderson, 1992; Bouton et al., 1987; D'Augelli, 1989; Grieger & Ponterotto, 1988; Herek & Glunt, 1991; Larsen, Serra, & Long, 1990; Price & Hsu, 1992; Pryor, Reeder, Vinacco, & Kott, 1989; Stipp & Kerr,

1989; Young, Gallaher, Belasco, Barr, & Webber, 1991). Gay men with AIDS and men who contracted HIV through male-male sex are more likely to be negatively evaluated or blamed than are heterosexuals with AIDS or other illnesses (Anderson, 1992; Crandall, 1991; Fish & Rye, 1991; St. Lawrence et al., 1990; Triplet & Sugarman, 1987).

AIDS stigma is also manifested in discriminatory practices against persons perceived to be HIV-infected (e.g., Gostin, 1989, 1990; Jackson, 1992; Jackson & Hunter, 1992) and even in physical violence against PWAs. In a 1992 survey with a national convenience sample of 1800 people with HIV or AIDS, 21.4% of respondents reported that they had experienced violence in their communities because of their HIV status (National Association of People With AIDS, 1992). Such assaults may also be directed at individuals who serve as a proxy for people with AIDS, such as gay men and lesbians (Herek & Berrill, 1992). When public awareness about AIDS increased in the United States during the mid-1980s, for example, groups monitoring anti-gay violence began to report incidents that included verbal references to AIDS or were directed against PWAs (Berrill, 1992).

Based on the contact hypothesis, it is reasonable to assume that uninfected individuals who have a personal relationship with a PWA or a person with HIV (PWHIV) should manifest less AIDS stigma than the general population. The proportion of U.S. adults with such contact has increased since the mid-1980s, although the exact proportion reported by different surveys has varied. In 1987, for example, about 10% of the public reported that they knew or had known someone with AIDS (Blendon & Donelan, 1988). By 1988, the proportion ranged from 10% to 19.5%, depending on the survey.[1] In 1991, the proportion of adults who knew a PWA was 19%, according to the General Social Survey (GSS), but then increased to 27.4% in the 1992 National Health and Social Life Survey (NHSLS) and 27.8% in the 1993 GSS (Laumann, Gagnon, Michael, & Michaels, 1994). Blacks have consistently been more likely than Whites to know a person with AIDS

or HIV (Gerbert, Sumser, & Maguire, 1991; Hardy & Biddlecom, 1991).

The effect of direct contact on attitudes toward PWAs has received limited attention in empirical research. Gerbert et al. (1991) reported that respondents who knew someone with AIDS or HIV infection were significantly less likely than those without contact to endorse employment restrictions on PWHIVs. Respondents with direct contact also were less likely than others to say that they would switch from an HIV-infected health care provider or a provider who treated HIV-infected patients, and were less likely to overestimate the likelihood of HIV infection in a variety of low-risk situations. When demographic variables (age, education, gender, income, race) and residence in an AIDS epicenter were statistically controlled, contact experiences remained a significant predictor of employment attitudes, willingness to switch health-care providers, and knowledge about transmission (Gerbert et al., 1991). Zimet (1992; Zimet et al., 1991) found that adolescents who reported knowing a PWA were more willing to interact with PWAs than were matched controls. Henry, Campbell, and Willenbring (1990) found that contact with PWAs was somewhat correlated with knowledge about AIDS, attitudes toward PWAs, and intentions to avoid PWAs among staff members at a Minnesota teaching hospital (see also Pleck, O'Donnell, O'Donnell, & Snarey, 1988). Contact with PWAs may have a particularly strong effect on the attitudes of noninfected individuals who think about PWAs in abstract rather than specific terms (Werth & Lord, 1992). HIV-positive individuals appear more likely to disclose their condition to individuals from whom they expect a supportive response (Hays et al., 1993).

The effects of vicarious contact on AIDS-related attitudes were studied extensively when Earvin "Magic" Johnson revealed his HIV infection in 1991. Johnson's announcement was widely expected to promote public awareness about AIDS and to benefit AIDS education (Stevenson, 1991). Many believed that the announcement would be particularly influential in motivating adult and adolescent heterosexual

males to become more aware of how they personally might be at risk for contracting HIV (e.g., "Magic's message," 1991; Matthews, 1991). Scientists and members of the lay public alike believed that the effect of Johnson's announcement on non-PWAs would be similar to that of having personal contact with a PWA. For example, Kalichman, Russell, Hunter, & Sarwer (1993) speculated that "images of Magic Johnson ... seem to have affected interest in AIDS, because the disclosure was personally relevant to men, particularly African American men, in much the same way as knowing someone with AIDS" (p. 890) and, more generally, "Celebrity self-disclosure appears to affect perceptions through mechanisms similar to those involved in personally knowing someone infected with HIV" (Abstract, p. 887). A *Sports Illustrated* writer equated vicarious contact with direct contact, comparing Johnson's disclosure to the shock of learning that a member of one's own family has AIDS (Montville, 1991). The president of one AIDS organization commented on the effects of Johnson's announcement: "The main thing that raises awareness of HIV or AIDS is to know someone who has it. Now everybody in America knows someone with HIV" ("From hero to crusader," 1991, p. 69).

In the present paper, we consider whether direct and vicarious contact with a PWA do indeed have similar effects on public attitudes toward AIDS and levels of stigma directed at PWAs.[2] We first describe the relationship between direct contact with a PWA and three measures related to AIDS stigma assessed in a national survey prior to Johnson's disclosure. Next, we consider the relationship between reports of direct contact in the initial survey and changes in stigma observed in a 1-year follow-up survey. Finally, we examine the relative impact of direct contact and vicarious contact on levels of stigma in the follow-up survey (which was conducted soon after Johnson's announcement).

We report data both for a cross-sectional sample representing the U.S. adult population, and for an oversample of Black Americans.[3] Blacks' reactions are of considerable interest,

given the disproportionate impact of AIDS on the African American community (e.g., Centers for Disease Control and Prevention, 1994) and widespread speculation that the announcement by Johnson – an African American man – would have a special impact on the AIDS-related attitudes and beliefs of Blacks generally (e.g., Kalichman et al., 1993). Unfortunately, empirical data are generally lacking concerning AIDS stigma in the African American community. Thus, the study described in the present paper (see also Herek & Capitanio, 1993, 1994) represents one of the few empirical assessments of AIDS stigma among African Americans.

GENERAL POPULATION SAMPLE

Method

Respondents

Respondents were drawn from the population of all English-speaking adults (at least 18 years of age) residing in households with telephones in the 48 contiguous states. Ten-digit telephone numbers were generated using a stratified two-phase procedure for random-digit dialing, or RDD (Casady & Lepkowski, 1993). First, area codes and prefix combinations on the Bell Communications Research tape were ordered geographically, and a large first-phase sample was selected with systematic random sampling. Four-digit random numbers were appended to the selected area code-prefix combinations to generate 10-digit telephone numbers, which were then compared to numbers on a tape created by Donnelly Marketing Services. The Donnelly tape indicated how many listed residential telephone numbers occurred in each series of 100, organized according to the first eight digits. Two strata were then created. Stratum 1 comprised numbers whose first eight digits included at least one listed residential telephone number. Stratum 2 contained numbers for which no corresponding residential listings were found on the Donnelly tape. From the stratified pool of first-phase selections, a second phase was drawn by disproportionately sampling at the ratio of 18:1 for Stratum 1:Stratum 2. This

method resulted in the second phase sample in which 48.7% (768/1578) of the selected telephone numbers were found to be households. Of the 768 households, 653 (85.0%) were enumerated. Of these, interviews were completed with 538 (82.4%), yielding a Wave 1 response rate (enumeration rate X completion rate) of 70.1%. For Wave 2, interviews were completed for 382 respondents (71.0%). (For additional information on the study's methodology, see Herek & Capitanio, 1993, 1994, 1995, 1996.)

Procedure

Interviews were conducted by the staff of the Survey Research Center at the University of California at Berkeley between September of 1990 and February of 1991 for Wave 1, and between November of 1991 and February of 1992 for Wave 2, using their computer-assisted telephone interviewing (CATI) system. No limit was set on the number of recontact attempts for each number. Upon reaching an adult in the household during Wave 1, the interviewer enumerated the first name and race of each person 18 years or older living in the household. Based on this information, one respondent was selected randomly and, if that person was available, the interview began. If the target respondent was unavailable, the interviewer established a later time for recontact. During Wave 2, the same respondent was reinterviewed. Once the target respondent was identified, most interviews (62.4% in Wave 1 and 72.6% in Wave 2) were completed within one or two attempts. Twenty-four respondents in Wave 1 and four in Wave 2, however, required more than eight attempts before the interview was successfully completed. The maximum number of attempts before completing an interview was 19 for Wave 1 and 14 for Wave 2. Chi-square analyses revealed no consistent response differences according to the number of contact attempts for either sample. The mean duration of the interview was 39 minutes for Wave 1 and 40 minutes for Wave 2.

Measures

AIDS-Related Stigma

Support for coercive policies. Respondents were asked how much they agreed or disagreed that "people with AIDS should be legally separated from others to protect the public health" and that "the names of people with AIDS should be made public so others can avoid them." Four response alternatives were provided (*agree strongly*, *agree somewhat*, *disagree somewhat*, *disagree strongly*). Responses to the two items were reverse-coded and combined to create a Coercive Policies attitudes scale, with higher values indicating greater support for such policies. Cronbach's *alpha* for these scales was .65 and .70 for Waves 1 and 2, respectively.

Blame for persons with AIDS. Using the same four response alternatives, respondents were asked whether they agreed or disagreed that "people who got AIDS through sex or drug use have gotten what they deserve."

Avoidant behavioral intentions. Respondents were asked to predict their own behavior in each of four different situations involving potential contact with a person with AIDS. The situations were (1) having a close friend or relative who developed AIDS; (2) having a child attending a school where another student was known to have AIDS; (3) working in an office where a male coworker developed AIDS; and (4) finding out that the owner of a small neighborhood grocery store had AIDS. For each situation, respondents were offered a variety of response alternatives that represented avoidant responses (e.g., not helping to care for the sick friend, avoiding contact with the coworker) or supportive responses (e.g., caring for the friend, helping the coworker or treating him the same as always). Responses were combined into an Avoidance scale, with higher values indicating greater desire to avoid PWAs. Internal consistency reliability values were .74 and .65 for, respectively, Waves 1 and 2.

AIDS-Related Beliefs

Respondents indicated their belief about the likelihood "that a person could get AIDS or

AIDS virus infection" through four different routes: (1) sharing a drinking glass, (2) using public toilets, (3) being coughed on, and (4) insect bites. Five response alternatives were provided (*very likely*, *somewhat likely*, *somewhat unlikely*, *very unlikely*, and *it is impossible to get AIDS from this activity*). Responses were reverse-coded and combined into a Casual Contact scale where higher values indicate greater overestimation of risk via casual social contact. Reliability values were .78 and .82 for Waves 1 and 2.

Respondents also were asked "Do you ever worry about getting AIDS yourself, or is that something you're not concerned about?" Respondents who gave an affirmative answer were asked whether they were very worried, somewhat worried, or not too worried that they would get AIDS. In addition, a series of items assessed respondents' risk for HIV infection. The series included questions about sexual intercourse since 1977 with a man at risk for HIV, sharing of needles, and receipt of blood or blood products.

Contact With PWAs

Direct contact with an HIV-infected person. Respondents were asked if they personally ever knew anyone with AIDS. Those responding in the negative were asked if they had ever known anyone who had the AIDS virus. Individuals who answered yes to either question were then asked "How much has knowing that person influenced your feelings about AIDS and what should be done about it – a great deal, some, a little, or not at all?"

Vicarious contact: Influence of "Magic" Johnson. In the Wave 2 survey, three questions were asked regarding celebrities who had AIDS or HIV infection, from which our measure of Johnson's influence was derived. First, all respondents were asked "How much has hearing about a movie star, sports figure, or other famous person with AIDS or the AIDS virus influenced your feelings about AIDS and what should be done about it?" Depending on their answer, respondents were asked either of two questions. (1) Those who answered the initial question with *not at all* were asked "As

you may know, 'Magic' Johnson – a basketball player for the Los Angeles Lakers – recently announced he has the AIDS virus. How much of an impact has that had on your feelings about AIDS and what should be done about it?" (*a great deal, some, a little, not at all, aren't aware of "Magic" Johnson's announcement*). (2) Respondents who answered the initial question with *a great deal*, *some*, or *a little* were asked "Which movie star, sports figure, or other famous person with AIDS or the AIDS virus has had the greatest impact on how you feel about AIDS and what should be done about it?" Those who provided any response other than *"Magic" Johnson* were asked the follow-up about Johnson. Using these items, respondents were scaled on a 4-point continuum ranging from *influenced a great deal by Johnson's announcement* to *not at all influenced*. The few respondents who had not heard about Johnson's announcement were coded as missing for this scale.

Other Variables

In addition to the above, we assessed respondents' attitudes toward gay men, using a 3-item version of the Attitudes Toward Gay Men (ATG) scale (Herek, 1994; Herek & Capitanio, 1996). We also assessed political ideology (on a 7-point scale ranging from 1 = *very conservative* to 7 = *very liberal*) and religiosity (based on frequency of attendance at religious services during the previous year). Finally, we assessed a variety of demographic variables, including respondents' gender, age at last birthday, educational attainment, total household income, marital status, number of children, zip code, residence environment (e.g., large city, suburb), political party affiliation, and whether or not they voted in the most recent (1992) national election. Based on respondents' zip codes, we created dummy variables to indicate their geographic region of residence (Northeast, Midwest, and Pacific Coast, with Southern states as the index variable) and their proximity to an area with a high incidence of AIDS (using procedures described by McCaig, Hardy, & Winn, 1991). The latter variable was dichotomized as high incidence areas, or epicenters (New York/Newark, San Francisco,

Los Angeles, Miami-Ft. Lauderdale, and Houston), versus other locations.

Results

Sample Characteristics

Of the 538 completed interviews at Wave 1, 45.9% were with males and 54.1% were with females. Racially, the general population sample was 81% White, 10.4% Black, 5% Hispanic, and 2.8% Asian. The mean age was 43.8 years (*s.d.* = 15.97); median annual household income was between $30,000 and $40,000; and the median level of educational attainment was some college or post-secondary technical school. Slightly more than one-third of respondents (35.3%) labeled themselves Democrats; 31.6% were Republicans; and 24.5% were Independents. The demographic characteristics of the Wave 2 sample were nearly identical to Wave 1, except that significantly more Asians and significantly fewer Whites were lost between Waves 1 and 2 than would be expected through random attrition (*chi-square* (4, N = 538) = 13.7, p < .01). In addition, the highest income category (income greater than $70,000 annually) had a significantly lower attrition rate than did any of the other income categories (*chi-square* (7, N = 507) = 19.4, p < .01).[4]

Extent of Direct Contact

One-fourth of the entire Wave 1 sample (25.4%) knew a PWA/PWHIV, whereas 73.9% did not (the remainder did not answer the question). This proportion is somewhat higher than the 19% reported in the 1991 GSS, but slightly lower than the 27.4% reported for the 1992 NHSLS (Laumann et al., 1994). The vast majority of respondents who knew a PWA/PWHIV indicated that their contact with this person had influenced their attitudes "some" (33%) or "a great deal" (40%). More females than males reported direct contact (29.7% vs. 21.1%). In addition, respondents were more likely to report contact if they had at least some college, if their income was higher than $40,000; and if they lived in a Pacific coast state or in proximity to an AIDS epicenter (all comparisons were significant at p < .05, using *chi-square*). No significant differences in direct contact were observed for the variables of age,

marital status, number of children, employment status, or urban/rural residence. Stepwise logistic regression indicated that education best predicted direct contact with a PWA, followed by income, gender, and living in a Pacific coast state. These patterns are generally consistent with Gerbert et al.'s (1991) findings from their 1988 survey.

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Direct Contact and Stigma

Persons reporting direct contact manifested significantly lower stigma scores than did those without contact (see upper portion of Table 1). They reported less support for coercive policies (F (1, 525) = 17.99, p < .001); less blame (F (1, 531) = 4.74, p < .05); and less avoidance (F (1, 503) = 16.42, p < .001).

In a series of bivariate regression equations, direct contact explained a small but significant amount of variance in all three stigma measures: coercive policies attitudes R^2 = 2.61% (p < .001); blame R^2 = 1.1% (p < .05); and avoidance R^2 = 3.78% (p < .001). When other variables were added to the equations, the independent effects of direct contact remained statistically significant only for avoidance scores, as shown in Table 2.

Table 2 also shows the other significant predictors of AIDS stigma. Most notable is that attitudes toward gay men (ATG scores) were the primary predictor of both blame and support for coercive policies, and a secondary predictor of avoidance. Beliefs about casual contact were a secondary predictor of support for coercive policies and the primary predictor for avoidance.

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Longitudinal Effects of Direct Contact[5]

We utilized ordinary least squares regression to assess the long-term influence of direct contact. Using Wave 2 stigma scores as the dependent variable, we first entered the

corresponding Wave 1 stigma score as a control variable, followed by a dummy-coded variable representing Wave 1 direct contact. A significant cross-wave effect was observed only for the blame variable: Compared to those without direct contact, persons reporting contact at Wave 1 manifested significantly less blame for PWAs at Wave 2 than at Wave 1 (R^2 change = 3.34, $p < .001$).

We also examined changes in stigma among respondents who first met a PWA/PWHIV between survey waves, that is, those who reported direct contact at Wave 2 but not at Wave 1 (see upper portion of Table 3). Only 10.5% of the Wave 2 sample ($n = 40$) fit this description. Stigma scores did not change significantly across waves among members of this subgroup. However, examination of their Wave 1 scores revealed that they initially were less stigmatizing than respondents who never reported direct contact. As shown in Table 3, they were significantly less likely to support coercive policies at Wave 1 than were respondents with no contact at either wave, but did *not* differ significantly from respondents reporting contact at Wave 1 (between-groups effect $F (2, 373) = 7.89$, $p < .001$; intergroup differences were assessed by the Student Newman Keuls procedure, with $p < .05$). Their avoidance scores at Wave 1 were midway between those of respondents reporting contact at Wave 1 and those never reporting contact (between-groups effect $F (2, 365) = 7.10$, $p < .001$). Student Newman Keuls comparisons indicated that respondents with contact at Wave 1 were significantly less avoidant than were respondents with no contact at either wave; respondents who first experienced contact after Wave 1 were not significantly different from either group. The three groups did not differ significantly in levels of blame for PWAs at Wave 1. However, consistent with their significant reduction in blame across waves, respondents reporting contact at Wave 1 manifested significantly lower levels of blame at Wave 2 (for the interaction effect $F (2, 377) =$ 3.81, $p < .05$; for the relevant test of simple main effects, $F (1, 377) = 5.48$, $p < .05$). In summary, respondents who would subsequently experience direct contact with a PWA/PWHIV between Waves 1 and 2 were significantly less likely to have endorsed coercive measures at Wave 1 and were somewhat less likely to have expressed avoidant intentions than were the respondents who did not report contact at either wave.

Influence of Johnson's Announcement

"Magic" Johnson's announcement occurred approximately three weeks before the Wave 2 survey began. Nearly all respondents (97.4%) had heard about Johnson's announcement, but only about half reported that their attitudes concerning AIDS were influenced "some" (29.5%) or "a great deal" (24%) by it. A series of *chi-square* analyses indicated that respondents with the least formal education (i.e., less than a high school diploma) were disproportionately likely to be strongly influenced by Johnson's announcement (*chi-square* $(9, N = 369) = 16.89$, $p = .05$). Being influenced by Johnson's announcement did not significantly vary by gender, age, income, marital status, number of children, employment status, geographic region, or proximity to an AIDS epicenter.

Avoidance scores declined significantly between waves only for those who were influenced "a great deal" by Johnson's announcement, as shown in Table 4 (for the wave-by-influence interaction, $F (3, 345) = 3.28$, $p < .05$; for the relevant test of the simple effects for wave, $F (1, 345) = 9.6$, $p < .01$). Further analysis revealed that mean avoidance scores were significantly higher at Wave 1 for those influenced "a great deal" than for the other three groups, but not at Wave 2. Coercive policies attitudes and blame did not change significantly between waves. As with avoidance, however, those reporting the greatest influence by Johnson's disclosure at Wave 2 had previously manifested greater support for coercive policies ($F (3,360)= 3.09$, $p < .05$). The pattern was similar but not statistically significant for blame.

Relative Influence of Direct and Vicarious Contact

Finally, we assessed the extent to which direct and vicarious contact independently predicted AIDS stigma at Wave 2.[6] We conducted three sets of regression analyses – one for each stigma variable – in which we alternately used two models: (1) with direct contact entered first, and influence of Johnson's announcement entered second; and (2) with influence of Johnson's announcement entered first, followed by direct contact on the second step. Table 5 displays the proportion of variance (R^2) explained by each model, and reports the unstandardized and standardized regression coefficients with both types of contact in the equation. In this cross-sectional analysis, the two types of contact appeared to account for independent and roughly equal portions of the variance in blame. Only direct contact, however, accounted for a significant amount of variance in avoidance, whereas only the influence of Johnson's announcement accounted for a significant amount of the variance in support for coercive policies. In all cases, vicarious contact – being influenced by Johnson – was associated with _higher_ levels of stigma at Wave 2 (indicated by positive regression coefficients) whereas direct contact – knowing a PWA/PWHIV – was linked to _lower_ levels of stigma (indicated by negative regression coefficients).

Before discussing the implications of these findings, we present results from the Black oversample.

SAMPLE OF BLACK ADULTS

Method

Respondents

A sample of African Americans was selected using telephone numbers purchased from Survey Sampling, Inc. (Fairfield, CT). The list was based on census tracts where the density of Black households is 30% or higher. Telephone numbers were taken from telephone directory listings and, in 21 states, were supplemented by motor vehicle registration data. This approach excluded Blacks living in untracted areas (e.g., very rural settings) as well as those living in neighborhoods with fewer than 30% African American households.

Eligibility criteria were that the respondent be a Black, English-speaking household resident at least 18 years of age. Of the 1900 telephone numbers in the sample list, 1523 (80.2%) were found to be residential households. Of these, 1343 (88.2%) were enumerated. Excluding non-Black households left 794 eligible homes, from which 607 interviews (76.4%) were completed. Because one goal of our project was to monitor reactions to AIDS among Black Californians, this group was oversampled, representing 263 of the 607 completed interviews. The response rate for Wave 1 was 67.4%. For Wave 2, reinterviews were completed with 420 respondents (69.2% of the sample).

Measures and Procedure

Interviews with the Black oversample were conducted by the Survey Research Center staff concurrently with the interviews with the general population sample. Apart from initial screening for race with the Black oversample, the interview protocol was identical for the two samples, and identical procedures were followed for both. Cronbach's _alpha_ for scales at, respectively, Wave 1 and Wave 2 were .58 and .58 for coercive policies attitudes, .75 and .70 for avoidant behavioral intentions, and .79 and .76 for casual contact beliefs.

Results

Sample Characteristics

Of the 607 interviews completed with the Black oversample, 36.1% were with males and 63.9% were with females. Respondents' mean age was 48.8 years (_s.d._ = 17.9); their median annual household income was between $20,000 and $30,000; and their median level of educational attainment was "high school graduate." Most respondents (68%) identified themselves as Democrats; 8.1% were Republican; and 16% were Independents. The

only demographic variable correlated with attrition was income. Attrition at Wave 2 was significantly greater for respondents in the lowest income category (less than $10,000 per year) and significantly less for those in the $30,000 - $40,000 income category (*chi-square* $(7, N = 550) = 21.6, p < .01$).[7]

Extent of Direct Contact

Members of the Black oversample were more likely than members of the general population sample to know a PWA/PWHIV, consistent with earlier findings by Gerbert et al. (1991). At Wave 1, more than one-third (37.3%) of the Black oversample reported direct contact. They also reported even greater influence from knowing a PWA than did those in the general population sample: 71% said it had influenced their attitudes about AIDS "a great deal" and another 14% "some." As in the general population sample, Blacks were more likely to know a PWA/PWHIV if they had at least some college and if they lived in proximity to an AIDS epicenter. In addition, Blacks were more likely to know a PWA/PWHIV if they lived in an urban area or a Northeastern state and were employed. Of these variables, stepwise logistic regression indicated that educational level was the best predictor of direct contact, followed by proximity to an epicenter, and geographic region. In contrast to the general population sample, gender and income did not differ significantly between those with contact and those with no contact. Nor were significant differences observed for age category, marital status, or number of children.

Direct Contact and Stigma

Blacks with direct contact manifested significantly less stigma than did those without contact on coercive policies attitudes, as shown in the lower portion of Table 1 ($F (1, 586) = 10.48, p < .001$); blame ($F (1, 587) = 26.73, p < .001$); and avoidance ($F (1, 549) = 25.89, p < .001$).

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In a series of bivariate regression equations, direct contact explained a small but statistically significant amount of variance in all three measures of stigma: coercive policies attitudes $R^2 = 0.9\%$ ($p < .05$); blame $R^2 = 6.3\%$ ($p < .001$); and avoidance $R^2 = 3.82\%$ ($p < .001$). When other variables were added to the equations, the independent effects of direct contact remained statistically significant for blame, as shown in Table 6. The findings in Table 6 also indicate that, as in the general population sample, AIDS stigma among Blacks was predicted principally by attitudes toward gay men and – in the case of support for coercive policies and avoidance of PWAs – by beliefs about casual contact.

Longitudinal Effects of Direct Contact

Wave 1 contact did not predict changes in stigma by Wave 2, as indicated by the lack of significant effects in an ordinary least squares regression analysis to assess the influence of contact at Wave 1 on changes in stigma at Wave 2. In contrast to the general population sample, however, Black respondents who first met a PWA/PWHIV between survey waves (i.e., the 12.4% of the sample that first reported contact at Wave 2) showed a significant reduction in mean avoidance scores, as shown in the lower portion of Table 3 (for the wave-by-group interaction, $F (2, 381) = 3.89, p < .05$; for the relevant test of simple main effects, $F (1, 381) = 7.79, p < .01$). Their scores for blame and support for coercive policies did not change across waves, however.

Also in contrast to the general population sample, respondents in the Black oversample who subsequently experienced direct contact did *not* initially differ significantly in stigma from those who never experienced contact. Indeed, on the avoidance and blame variables, Student Newman Keuls comparisons indicated that all respondents who did not report contact at Wave 1 (regardless of whether they subsequently reported it at Wave 2) evidenced significantly more stigma than did respondents with contact at Wave 1: For avoidance, $F (2,389) = 8.81$ ($p < .001$); for blame, $F (2,405) = 17.94$ ($p < .001$). For coercive policies attitudes, respondents who would subsequently

experience contact after Wave 1 scored midway between those with contact at Wave 1 and those with no contact at either Wave (between-groups effect F (2,404) = 4.52, p = .01). Student Newman Keuls comparisons indicated that only the two extreme groups differed significantly from each other.

Influence of Johnson's Announcement

Practically all respondents in the Black oversample (96.9%) had heard about Johnson's announcement. Of these, 58% reported that they were influenced "a great deal" by it, and another 19% were influenced "some." Black respondents were more likely to be influenced by Johnson's announcement if they had a low level of education, had a household income less than $20,000 in the previous year, were divorced or separated, and had three or more children.[8]

Respondents who reported being influenced a great deal by Johnson's announcement had previously manifested slightly higher levels of support for coercive policies and blame for PWAs than did other respondents, but the differences were not statistically significant (see the lower portion of Table 4). For avoidance, the relationship with influence was not linear. Respondents who were influenced a great deal and those influenced a little had scored highest at Wave 1 for avoidance, with those who were not at all influenced or influenced "some" manifesting lower avoidance (F (3, 377) = 6.14, p < .001). At Wave 2, blame decreased significantly only for respondents reporting they were influenced a great deal by Johnson's announcement (for the interaction effect, F (3, 392) = 2.62, p = .05; for the test of simple main effects for those influenced a great deal, F (1, 392) = 16.36, p < .001). As a result, the mean Wave 2 blame score for those influenced a great deal was similar to the other three groups.

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Insert Table 7 about here
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Relative Influence of Direct and Vicarious Contact

In regression analyses with direct contact and influence of Johnson's announcement entered, alternately, first and second, the pattern was similar to that observed for the general population sample: The influence of Johnson was linked to higher levels of stigma whereas directly knowing a PWA/PWHIV was linked to lower levels of stigma (see Table 7). As in the general sample, avoidance was explained only by direct contact with a PWA, not by the influence of Johnson's announcement. Support for coercive policies was explained by both types of contact. Neither type of contact explained a significant amount of variance in Blacks' level of blame for PWAs.

Discussion

Direct Contact

Approximately one-fourth of the US adult general population – and roughly one-third of Black American adults – reported direct contact with a person with AIDS or HIV in 1991. Most of those who knew a PWA felt that the contact experience had influenced their general thinking about AIDS. Such influence appears to have been an antidote to stigma. Consistent with past research, respondents who had experienced direct contact with a person with AIDS manifested significantly lower levels of AIDS stigma than did those without such contact. They were less supportive of coercive policies, less blameful of PWAs, and less likely to avoid PWAs in various situations.

These findings are consistent with the contact hypothesis (Allport, 1954). Several other patterns in the data, however, suggest that any causal relationship between direct contact and attitudes – to the extent that one exists – is not simple. First, as predicted by the contact hypothesis, Black respondents who first met a PWA/PWHIV between survey waves showed a significant reduction in mean avoidance scores. A similar pattern was not observed for their levels of blame or support for coercive policies, however. In the general sample, no significant changes in stigma were observed among respondents who first reported direct contact in

the Wave 2 survey. Thus, to the extent that contact affects AIDS stigma, the most immediate manifestation of such an effect may be a greater willingness to experience more contact. Changes in other aspects of stigma in response to contact may occur only over a long time period.

Second, the likelihood that an individual would experience direct contact with a PWA was affected by at least two factors: proximity to people with AIDS or HIV and social class. The proximity factor is easily understood. The chances of having direct contact with a PWA are increased to the extent that more PWAs inhabit one's immediate environment. Thus, respondents living in an urban area or near an AIDS epicenter were more likely to have direct contact than were residents of rural areas or smaller cities. Blacks – who, as a group, have been disproportionately affected by HIV and who, in the present sample, were more highly concentrated in urban areas – were more likely than Whites to report direct contact.

The observed relationship between social class and contact appears paradoxical at first glance. People in the United States with higher socioeconomic status (SES) are not more likely than others to live and work around PWAs. Indeed, given the prevalence of AIDS in many low-SES urban areas, high-SES individuals might well be expected to have fewer opportunities for direct contact. The associations between contact and SES variables such as education and income are interesting because they point to a reciprocal relationship between direct contact and AIDS stigma. Because one's HIV status is not readily apparent in social interactions – except for individuals in the more advanced stages of AIDS – having AIDS is often a concealable stigma. Consequently, PWAs usually have some degree of control over who knows about their condition. It is reasonable to assume, therefore, that they are more likely to disclose their status to individuals from whom they expect acceptance, support, and understanding (Hays et al., 1993). Hence the finding that respondents in the general population sample who would subsequently experience direct contact

manifested lower levels of stigma at Wave 1, that is, prior to having contact: Their relative lack of stigmatizing attitudes may have made their contact experiences possible. Because individuals with higher SES are more likely to express such opinions (see, e.g., Herek, 1991, concerning heterosexuals' attitudes toward homosexuality, and Sniderman & Piazza, 1993, concerning Whites' racial attitudes), they may be more likely to experience direct contact with a PWA which, in turn, may further diminish their own level of stigma.

This explanation is supported by the regression analyses, which showed that lower levels of stigma were predicted primarily by attitudes toward gay men and beliefs about HIV transmission – both of which, in turn, are predicted by variables such as education and income (e.g., Herek, 1991; Herek & Capitanio, 1995; Herek & Glunt, 1991). It is also supported by the fact that, as shown in Tables 2 and 6, education and income accounted for some variance in stigma scores apart from their association with attitudes toward homosexuality, transmission beliefs, and direct contact. These patterns are consistent with previous research (e.g., Herek & Glunt, 1991; Price & Hsu, 1992; Stipp & Kerr, 1989).

The pattern of differential contact according to preexisting stigma is probably less likely to occur in communities and neighborhoods with high rates of HIV infection, where the chances of having contact are increased simply by the relatively large number of PWAs with whom contact can occur. Thus, in the present study's Black oversample, whether or not respondents met a person with AIDS was not related to their prior levels of stigma. We suspect that a similar pattern would be observed among other groups disproportionately affected by AIDS in the United States, such as gay men and urban Latinos.

Vicarious Contact

In contrast to direct contact, nearly everyone in both samples had experienced vicarious contact with a PWA through "Magic" Johnson's announcement, with a majority reporting that it had affected their AIDS-related attitudes to

some extent. As with direct contact, the influence of vicarious contact was not evenly distributed across the sample. Respondents with the least formal education – and, among Blacks, those with low incomes and large families – were disproportionately likely to be influenced by Johnson's announcement. African Americans appeared to be more strongly influenced than others by Johnson's disclosure, and this pattern was not simply a consequence of the Black sample's overall lower levels of education and income. Rather, Johnson's status as a highly popular and successful African American probably contributed to his heightened influence among Black adults.

An important finding from the cross-wave analyses is that the influence of vicarious contact was strongest among respondents who initially manifested more stigma. Their attitudes moderated somewhat by the Wave 2 survey, but still remained generally more negative than those of the rest of the sample (as indicated by the consistently positive regression coefficients associated with vicarious contact in Tables 5 and 7). Whether the modest reduction in stigma among these respondents can be attributed to Johnson's announcement or some other factor cannot be discerned from the present data set. The same respondents may have been influenced by other events not assessed in our survey. Indeed, they may even have been more likely than other respondents to be influenced by their participation in the Wave 1 survey. Such susceptibility could have resulted from their relative ignorance about AIDS or psychological detachment from the epidemic at the time the Wave 1 survey was conducted. Perhaps the Wave 1 survey represented their first extended conversation with another person about HIV and AIDS. Unfortunately, directly testing this hypothesis would have required that the Wave 2 survey include a newly recruited sample for comparison purposes. Such a design was not possible with the resources available for the present study.

We tentatively conclude that vicarious contact with a PWA can have beneficial effects – possibly reducing levels of stigma in those with the most extremely negative attitudes – but

does not result in dramatic reversals of stigmatizing attitudes. This conclusion is generally consistent with – though slightly more sanguine than – other studies conducted after "Magic" Johnson's disclosure, which indicated that his announcement did not have a substantial or positive impact on attitudes toward people with AIDS (Penner & Fritzsche, 1993; Sigelman, Miller, & Derenowski, 1993; Zimet et al., 1993; see Kalichman, 1994, for a review). Discrepancies between those studies and the findings reported here could result from several factors, including the present study's use of multiple measures of stigma-related variables, its use of a probability sample of U.S. adults, and its longitudinal design which permitted assessment of attitudes among the same respondents before and after Johnson's announcement. In addition, we do not know how long the modest effects that we observed persisted after the survey was conducted (data collection was completed roughly three months after Johnson's announcement).

Relative Influence of Direct and Vicarious Contact

We assessed three aspects of stigma in the present study, and the measures yielded somewhat different patterns of results. Overall, however, all of the different stigma variables indicated that direct contact was associated with low or decreasing levels of stigma, whereas vicarious contact – to the extent that it was perceived as influential – was associated with higher, albeit diminishing, stigma.

For avoidance, respondents in the general population sample with direct contact experiences were less likely than others to avoid PWAs in various situations, even when fears about contagion and attitudes toward gay men were statistically controlled. As already mentioned, Blacks who first experienced contact after the Wave 1 interview showed a subsequent decrease in avoidance scores.

For blame, Black respondents with direct contact experiences were less likely to believe that PWAs deserve their illness, even with other variables statistically controlled. In the general population sample, respondents with direct

contact at Wave 1 manifested markedly lower levels of blame at Wave 2.

Support for coercive policies generally declined between Waves 1 and 2 in the general population sample. In the Black sample, respondents were less supportive of such policies at Wave 2 to the extent that had experienced direct contact and more supportive to the extent that they were influenced by vicarious contact.

Whereas the overall patterns are similar between the two samples, the specific findings with each stigma variable were somewhat different. Caution must be exercised in drawing conclusions from these differences because the two samples were drawn using different methodologies. The sampling procedure for the Black oversample had the effect of systematically excluding some segments of the African American population (e.g., Blacks living in predominantly White neighborhoods and those in highly rural areas).

Recognizing the possible influence of sampling strategies, however, we consider it highly plausible that racial differences exist in stigma and in the effects of direct and vicarious contact. AIDS is a phenomenon that is differently constructed in different segments of the U.S. population. We hypothesize that AIDS is experienced as a more immediate problem for Blacks in the U.S. than for Whites, given the disproportionate impact of HIV on the African American community (CDC, 1994). This is indicated in the present data set by the relatively high proportion of Black respondents who personally knew a PWA/PWHIV (see also Dawson & Hardy, 1989; Gerbert et al., 1991; Hardy & Biddlecom, 1991).

Furthermore, we suspect that AIDS is perceived by most Whites as a problem of gay men, whereas Blacks are more likely to perceive AIDS as a problem for the African Americans community. This hypothesis was supported by a follow-up series of regression analyses in which we found that, once direct contact experiences with gay people were statistically controlled, direct contact with a PWA did not explain a significant proportion of variance in Whites'

stigma scores. Among Blacks, in contrast, direct contact with gay people and direct contact with PWAs appeared to account for independent proportions of the variance in AIDS stigma, especially in avoidance intentions. (The two samples did not differ in their distribution across the variable of sexual orientation.)

Although the findings reported here indicate that direct contact may be an important correlate of stigma, our measure of contact was relatively crude: Participants were asked simply whether they had ever known a PWA or person infected with HIV. Future research might assess the nature of direct contact experiences in greater depth to permit analysis of the relative importance of various aspects of contact. Our own study of heterosexuals' contact with gay people (Herek & Capitanio, 1996) suggests that direct contact with a stigmatized minority is most effective in reducing stigma when multiple members of the minority group are known personally, when they are close friends or members of one's immediate family, and when they have directly disclosed their status (that is, their stigma is not simply guessed or revealed by a third party).

Conclusions

What will be the likely effects on public attitudes toward PWAs as increasing numbers of people with HIV disclose their condition to those around them? The present research suggests that these effects may differ among groups according to their relationship to the epidemic. Whites appear to be more likely to have direct contact if they have previously given indications that they oppose punitive AIDS policies and if they are not inclined to avoid interactions with PWAs. Once they experience direct contact, Whites appear to develop greater empathy for PWAs generally, and to diminish in their belief that PWAs somehow deserve their illness. Blacks, in contrast, appear equally likely to experience direct contact regardless of whether their initial AIDS attitudes are stigmatizing or nonstigmatizing. Once they know a PWA personally, Blacks appear to become more willing to interact with people with AIDS generally.

Should we expect a reduction in AIDS stigma as more celebrities disclose their HIV status or AIDS diagnosis? The present study suggests that vicarious contact has its greatest impact on those individuals who are most removed from the epidemic and have the highest levels of stigma. "Magic" Johnson's announcement appears to have had different effects on such individuals depending on their race: It may have made Whites – especially those who harbored the greatest stigma – somewhat more willing to interact with a PWA, and Blacks less likely to feel that PWAs deserve to be sick. This racial difference may well have resulted from Johnson's status as a popular and successful African American man. It remains to be seen whether future disclosures by celebrity PWAs who enjoy popularity comparable to Johnson's but who have a different ethnic background will have similar effects on public stigma.

The findings presented here suggest that society's ability to deal with the problem of AIDS without being handicapped by stigma will be enhanced to the extent that we create an environment in which PWAs can safely disclose their status to others without fearing rejection, discrimination, and violence. At the same time, we should not overestimate the power of such disclosure to change attitudes. The benefits of directly knowing a friend or relative with HIV/AIDS, or vicariously knowing a celebrity with HIV/AIDS, may be offset by other factors, especially the negative influence of prejudice against gay people (and, most likely, prejudice against other groups affected disproportionately by the epidemic) and misconceptions about HIV transmission.

As the AIDS epidemic continues into the new millennium, an ever-increasing number of people will be required to confront their own attitudes concerning AIDS and people with AIDS. For every person newly-diagnosed with HIV disease, a network of others – family members, friends, neighbors, coworkers, caregivers – will be challenged to respond to her or him in an informed and compassionate way. In addition, new opportunities will arise for vicarious contact with a PWA as public figures disclose their HIV infection or AIDS diagnosis. Understanding the consequences of both direct and vicarious contact, therefore, will be important for counteracting AIDS stigma.

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Notes

1. In the 1988 National Health Interview Survey (NHIS), 10% of non-Hispanic Whites and 14% of Blacks reported that they had "ever personally known anyone with AIDS or the AIDS virus" (Dawson & Hardy, 1989). That same year, 19.5% of respondents to a national telephone survey conducted by Gerbert, Sumser, and Maguire (1991) reported that they knew someone with AIDS or the AIDS virus (exact item wording was not reported). This proportion was nearly identical to the 19.2% of respondents who said that they had "personally known anyone diagnosed as having AIDS or as being infected with the AIDS virus" in a 1988 national telephone survey by Herek and Glunt (unpublished data from Herek & Glunt, 1991).

2. We had previously collected interview data concerning AIDS stigma in a telephone survey with a national probability sample of U.S. adults, supplemented by an oversample of African Americans (Herek & Capitanio, 1993). Johnson's announcement occurred approximately three weeks before collection of a second wave of data from the same respondents was scheduled to begin. Consequently, we were able to add items to the interview protocol assessing reactions to Johnson's announcement.

3. We recognize that consensus does not currently exist for the best terminology to use in characterizing race and ethnicity. Survey data indicate that a plurality of Black Americans prefers the term "Black" to describe themselves, but a growing proportion prefers "African American" (Smith, 1992; see also Martin, 1991). In the current article, we use "Black" to characterize the respondents to our survey. This label is appropriate because, consistent with most survey research (Smith, 1992), our respondents indicated their racial background (e.g., White, Black) rather than their ethnic identification. Consequently, we do not know how many of the Black respondents identified as African American, Caribbean American, or otherwise. We use *African American*, when appropriate to refer to the communities and culture of Blacks in the United States.

4. As described above, telephone numbers for the general adult sample were drawn from two strata. Normally, the cases resulting from such a procedure would be weighted to adjust for the difference in selection probabilities between the two strata. Only two completed cases from Stratum 2 were included in the final sample, however. Because the potential sampling error of basing a substantial portion of the estimates on only two cases was judged to be larger than the bias resulting from leaving the cases unweighted, we did not weight the data according to RDD strata. Cases were weighted, however, according to other criteria in a two-stage procedure. First, sample weights were computed proportional to the actual number of adults living in each household (range = 1-5, with the 20 households comprising 5 or more adults given a weight of 5) and inversely proportional to the number of different telephone numbers in each household (range = 1-3, with the 14 households containing 3 or more different numbers given a weight of 3). Second, the cases were post-stratified by gender and racial category

(White, Black, Other), using 1990 Census Bureau data.

5. Comparisons between Waves 1 and 2 necessarily included only those respondents who completed both surveys. Consequently, the Wave 1 sample described in this section is smaller than that described above. However, differences in Wave 1 mean stigma scores between the entire Wave 1 sample and the subsample that completed both waves were negligible (less than 0.08 in all cases).

6. Preliminary *chi-square* and correlation analyses indicated no significant correlation between the influence of direct contact and the influence of Johnson's announcement in either the general population sample or the Black oversample.

7. Sample weights were computed by the same procedure described above for the general population sample. Using 1990 census data, the African American sample was post-stratified by gender and, because of the California oversample, by geographic region.

8. Recognizing that educational and income differences between the Black oversample and the general population sample might account for observed differences in the extent of Johnson's influence, we used analysis of covariance to compare the two samples' influence scores. Thus controlling for education and income, influence scores were significantly greater for the Black oversample (F (1, 738) = 67.64, $p < .001$). The difference also was significant when we used the same analysis of covariance design to compare the Black oversample and Whites from the general population sample (F (1, 680) = 86.225, $p < .001$).

9. As shown in Table 4, the relationship between avoidance and vicarious contact in the Black oversample was complex and not easily interpreted. Examination of the cross tabulation of avoidance scores by the influence of Johnson's announcement suggested a nonlinear relationship between the two variables in the Black oversample. In multiple regression analysis, the linear, quadratic, and cubic forms of the vicarious contact variable, in combination, explained 4.7% of the variance in avoidance when entered on the first step of the equation; direct contact explained an additional 5.5% when entered subsequently. When direct contact was entered on the first step, the three forms of the vicarious contact variable, in combination, explained an additional 3.91% of the variance in avoidance (beyond the 6.29% explained by direct contact). The lowest levels of avoidance were manifested by Blacks who were influenced "some" by Johnson's announcement, followed by those who were not influenced at all;

those who were influenced "a little" or "a great deal" manifested the highest levels of avoidance. Based on the present data, we are not able to offer a meaningful explanation for this pattern.

Table 1
Wave 1 AIDS-Related Stigma Scores by Contact with PWAs/PWHIVs

	Contact	No Contact
General Population Sample (n = 538)	25.4%	73.9%
Support for coercive policies	3.54 (1.74)$_b$	4.33 (1.91)$_a$
Blame	1.59 (0.94)$_b$	1.80 (0.96)$_a$
Avoidance	0.60 (0.96)$_b$	1.09 (1.24)$_a$
Black Sample (n = 607)	37.3%	60.6%
Support for coercive policies	4.25 (1.93)$_b$	4.80 (2.04)$_a$
Blame	1.40 (0.81)$_b$	1.83 (1.06)$_a$
Avoidance	0.78 (1.08)$_b$	1.31 (1.29)$_a$

Note. Figures in the table are the means and standard deviations (in parentheses) for each measure of stigma. Within rows, means with different subscripts differ significantly (a > b) at $p < .05$.

Table 2

Multiple Regression Analysis: Predictors of Stigma in General Population Sample

Variable	Coercive Policies Attitudes			Blame			Avoidance		
	R^2	*b*	ß	R^2	*b*	ß	R^2	*b*	ß
Contact		-.10			-.03			-.24	-.0897*
ATG	4.17	.17	.2434***	7.16	.12	.3190***	3.63	.10	.2273***
Transmission Beliefs	3.45	.09	.2234***		.02		6.80	.08	.3120***
Education	2.20	-.34	-.1774***		-.09			-.07	
Age	1.47	.02	.1596**		.01		2.23	.02	.1962***
Number of Children	1.00	-.20	-.1241*		-.07		1.00	-.13	-.1278*
Democrat		.01		3.59	-.48	-.2374***		-.14	
Republican		-.18		1.91	-.37	-.1791**		.00	
Religious Attendance		-.03		1.24	.11	.1230**		-.04	
AIDS Concern		.16			-.01		1.18	.14	.1157**
Midwest		-.46	-.1087*		-.13			-.18	
Income		.11			-.02			.07	
Gender		-.04			-.03			.17	
Never Married		.08			.13			-.07	
Urban Resident		-.28			-.05			.02	
Epicenter Proximity		.02			-.06			-.01	
Pacific Coast		-.53			-.27			-.30	
Northeast		-.07			.23			.11	
HIV Risk		-.24			.05			.32	
Political Ideology		-.08			-.01			.00	
Voted in 1988		-.12			-.12			.07	
Total R^2		30.96%			26.29%			32.80%	
F		8.36***			6.65***			9.11***	

Note. d.f. = 21, 392. R^2 values less than 1.00 are not reported. Unstandardized regression coefficients (*b*) are reported for all variables to permit comparisons across equations; standardized regression coefficients (ß) are reported only when statistically significant ($p < .05$).

*p < .05
**p < .01
***p < .001

Table 3
AIDS-Related Stigma at Waves 1 and 2 by Contact with PWAs/PWHIVs

	No Contact at Either Wave	Contact at Wave 2 only	Contact at Both Waves
General Population Sample			
Support for coercive policies			
Wave 1	4.43 (1.92)$_{a,x}$	3.72 (1.98)$_b$	3.60 (1.85)$_{b,x}$
Wave 2	3.85 (1.88)$_{a,y}$	3.93 (1.99)	3.27 (1.70)$_{b,y}$
Blame			
Wave 1	1.79 (0.92)	1.79 (1.01)	1.64 (0.99)$_x$
Wave 2	1.86 (0.99)$_a$	1.96 (1.14)$_a$	1.42 (0.81)$_{b,y}$
Avoidance			
Wave 1	1.14 (1.26)	0.86 (1.28)	0.59 (1.01)
Wave 2	1.07 (1.20)	0.84 (1.17)	0.55 (0.93)
Black Sample			
Support for coercive policies			
Wave 1	4.79 (1.91)	4.35 (2.22)	4.13 (1.96)
Wave 2	4.60 (1.94)	4.01 (1.99)	3.97 (2.03)
Blame			
Wave 1	1.92 (1.10)$_{a,x}$	1.77 (1.01)$_a$	1.31 (0.74)$_b$
Wave 2	1.62 (0.99)$_{a,y}$	1.69 (1.08)	1.39 (0.86)$_b$
Avoidance			
Wave 1	1.29 (1.34)$_a$	1.21 (1.14)$_{a,x}$	0.75 (1.09)$_b$
Wave 2	1.26 (1.34)$_a$	0.77 (0.82)$_{b,y}$	0.80 (0.99)$_b$

Note. Means with different subscripts differ significantly at $p < .05$. Within rows, a > b. Within columns, x > y.

Table 4

AIDS-Related Stigma at Waves 1 and 2 by Influence of Magic Johnson at Wave 2

	Not at all	A little	Some	A great deal
General Population Sample	26.0%	21.0%	29.5%	23.5%
Support for coercive policies				
Wave 1 *M*	3.99	3.70	4.04	4.56
(sd)	(1.88)	(1.85)	(1.71)	(2.12)
Wave 2 *M*	3.52	3.07	3.66	4.23
(sd)	(1.78)	(1.55)	(1.76)	(1.95)
Blame				
Wave 1 *M*	1.67	1.60	1.73	1.90
(sd)	(0.92)	(0.86)	(0.83)	(1.07)
Wave 2 *M*	1.56	1.70	1.75	1.86
(sd)	(0.86)	(0.95)	(0.98)	(0.97)
Avoidance				
Wave 1 *M*	0.74	0.87	0.89	1.22
(sd)	(1.19)	(1.14)	(1.03)	(1.40)
Wave 2 *M*	0.83	0.72	0.875	0.94
(sd)	(1.19)	(1.01)	(1.03)	(1.18)
Black Sample	11.8%	10.9%	19.3%	58.0%
Support for coercive policies				
Wave 1 *M*	4.16	4.60	4.46	4.45
(sd)	(2.15)	(2.03)	(1.83)	(2.00)
Wave 2 *M*	3.68	4.20	3.98	4.40
(sd)	(2.08)	(1.99)	(1.75)	(2.00)

(table continues)

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Table 4 (continued)

Blame

Wave 1 *M*	1.46	1.49	1.59	1.76
(sd)	(0.91)	(0.68)	(0.93)	(1.08)
Wave 2 *M*	1.60	1.43	1.53	1.49
(sd)	(1.00)	(0.75)	(0.93)	(0.93)

Avoidance

Wave 1 *M*	0.76	1.28	0.58	1.23
(sd)	(0.93)	(1.49)	(0.82)	(1.32)
Wave 2 *M*	0.76	1.41	0.57	1.08
(sd)	(1.09)	(1.32)	(0.79)	(1.21)

_____

Note. Data are based on responses from respondents who completed both waves of the survey.

Table 5
Direct and Vicarious Contact as Predictors of Wave 2 Stigma: General Population Sample

Model	Coercive Policies Attitudes	Blame	Avoidance
Model #1			
Step 1: Direct Contact (R²-change)	0.59	1.37[*]	2.18[**]
Step 2: Vicarious Contact (R²-change)	2.76[**]	1.39[*]	0.29
Model #2			
Step 1: Vicarious Contact (R²-change)	2.98[***]	1.65[*]	0.46
Step 2: Direct Contact (R²-change)	0.04	1.11[*]	2.00[**]

Final Equation

	b	(ß)	b	(ß)	b	(ß)
Direct Contact	-.2382	(-.0613)	-.2155	(-.1059)[*]	-.3377	(-.1424)[*]
Vicarious Contact	+.2696	(+.1668)[**]	+.1001	(+.1184)[*]	+.0533	(+.0540)

Note. Direct contact refers to self-reports of contact with a PWA/PWHIV. Vicarious contact refers to self-reported influence of Earvin "Magic" Johnson's announcement.

[*]$p < .05$
[**]$p < .01$
[***]$p < .001$

Table 6

Predictors of Stigma in Black Oversample

Variable	Coercive Policies Attitudes			Blame			Avoidance		
	R²	*b*	ß	R²	*b*	ß	R²	*b*	ß
Contact		.10		1.50	-.28	-.1348**		-.14	
ATG	6.86	.23	.2939***	1.57	.06	.1406**	3.55	.10	.2115***
Transmission Beliefs	2.29	.07	.1683***		.02		11.06	.10	.3699***
Epicenter Proximity		-.37			-.03		2.69	-.75	-.2488***
Never Married		.25			.20		1.49	.48	.1699**
HIV Risk	2.27	-1.03	-.1558***		-.26		1.08	-.44	-.1072**
Income	1.43	-.23	-.1484**		.02			.03	
Republican	1.28	.89	.1395**		.01			.19	
Political Ideology		-.04		1.43	-.06	-.1347**		-.01	
Voted in 1988		.22			-.12		1.00	-.33	-.1197*
Midwest		-.46			.16			-.32	-.1039*
Urban Resident	1.12	-.47	-.1170*		-.02			.24	.0968*
Education		-.11			-.11	-.1058*		-.12	-.0970*
AIDS Concern		-.19	-.0975*	1.02	-.11	-.1074*		-.02	
Gender		.26			.19	.0948*		.23	.0934*
Age		.01			.00			.01	
Number of Children		-.15			-.08			.02	
Pacific Coast		-.12			-.14			.35	
Northeast		.07			-.14			.30	
Democrat		-.33			.04			-.17	
Religious Attendance		.04			.02			.04	
Total R²	28.59%			20.48%			35.28%		
F	7.75***			4.98***			10.55***		

Note. d.f. = 21, 407. R² values less than 1.00 are not reported. Unstandardized regression coefficients (*b*) are reported for all variables to permit comparisons across equations; standardized regression coefficients (ß) are reported only when statistically significant ($p < .05$).

*p < .05
**p < .01
***p < .001

Table 7

Direct and Vicarious Contact as Predictors of Wave 2 Stigma: Black Oversample

Model	Coercive Policies Attitudes	Blame	Avoidance
Model #1			
Step 1: Direct Contact (R²-change)	2.51**	0.53	6.29***
Step 2: Vicarious Contact (R²-change)	1.01*	0.31	0.03[9]
Model #2			
Step 1: Vicarious Contact (R²-change)	1.60**	0.18	0.04
Step 2: Direct Contact (R²-change)	1.93**	0.67	5.95***
Final Equation			
	b (ß)	b (ß)	b (ß)
Direct Contact	-.5585 (-.1409)**	-.1581 (-.0828)	-.5966 (-.2476)***
Vicarious Contact	+.1968 (+.1023)*	-.0521 (-.0562)	+.0216 (+.0185)

Note. Direct contact refers to self-reports of contact with a PWA/PWHIV. *Vicarious contact* refers to self-reported influence of Earvin "Magic" Johnson's announcement.