

Spared at Random: Survivor Reactions in the Gay Community¹

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Many gay men who have tested negative for HIV were sexually active prior to a general awareness of how HIV is transmitted. Based on the work of Lifton (1980), such HIV-negative gay men may be considered "survivors" since they have witnessed the deaths of many members of their community and have been spared. Survivors may be expected to manifest one or more of three survivor reactions: guilt about surviving (HIV-related guilt), anxiety about dying (AIDS-related death anxiety), and blunted affect. The present study employed structural equation modeling in samples of HIV-negative ($N = 129$) and HIV-positive ($N = 95$) gay men to assess psychological and behavioral variables predictive of the presence of a survivor reaction. Survivor reactions were uniquely predicted among HIV-negative gay men. The larger the number of sexual partners HIV-negative gay men reported having had prior to 1984, the more likely they were to experience a survivor reaction. Greater satisfaction with social support from gay friends, and, indirectly, gay-related community group involvement, was associated with being less likely to experience a survivor reaction.

HIV is capable of severely undermining immune system functioning and can lead to the development of AIDS. As of December 31, 1993, nearly 194,000 cases of AIDS have been documented among homosexual and bisexual men in the U.S., constituting nearly half of all adult cases of AIDS in the U.S. (Centers for Disease Control, 1993). The presence of HIV infection in gay and bisexual

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male samples ranges from 10 to 70% across a number of studies, with most reporting between 20 to 50% (Curran et al., 1988).

In addition to its health consequences, the AIDS epidemic is having a profound social effect on the gay community. The untimely death of friends and intimates is becoming increasingly common among gay men (Martin, 1987). For example, in a sample of 745 gay men in New York City, Martin (1988) found that over 52% had experienced the loss of at least one friend, close friend, or lover to AIDS since the beginning of the crisis. In fact, the average number of losses experienced by gay men in this sample was about six (Dean, Hall, & Martin, 1988). The AIDS crisis has also altered many aspects of gay lifestyle, including sexual practices (Joseph et al., 1984). In addition, the AIDS epidemic has heightened rejection of gay men by members of the general public (Herek & Glunt, 1988).

Although the psychological impact of the AIDS crisis has received a great deal of attention, little research has investigated the experiences of HIV-negative gay men. We propose that the psychological state of some HIV-negative gay men may be better understood if their situation is reframed as that of "holocaust survivors." Lifton (1980) defines "holocaust" as total disaster: "the physical, social, and spiritual obliteration of a human community" (p. 113), and a "survivor" as "one who has encountered, been exposed to, or witnessed death, and has himself or herself remained alive" (p. 117). The experiences of holocaust survivors have previously been explored in contexts where there has been a significant loss of life: Nazi concentration camps (Niederland, 1981), Hiroshima (Lifton, 1968), the Vietnam War (Glover, 1984), and the 1972 Buffalo Creek Flood (Lifton & Olson, 1986). HIV-negative gay men, too, may be considered to be survivors of a "holocaust": Their community is experiencing a health crisis that has resulted in a large number of deaths and the prospect of increasing numbers in the future. Although many engaged in the same sexual practices as their HIV-positive peers, HIV-negative men have nonetheless been spared.

Lifton (1980) identified three specific aspects of a "survivor syndrome" believed to be common among holocaust survivors: survivor guilt, death anxiety, and/or psychic numbing. By most accounts, "survivor guilt" is a complex emotion: the uneasy juxtaposition of self-condemnation and relief for having been uniquely saved (Chodoff, 1986; Lifton, 1980). Part of the survivor's sense of guilt may arise from having felt inappropriate emotions (e.g., happiness) in the face of a collective tragedy, for having been unable to feel appropriate feelings (e.g., compassion), or for having felt that one's life was "purchased" at the cost of others. Guilt may also be related to a concern for, and sensitivity to, the pain of others (Lanza, 1986), as a reaction against helplessness, or as a way of working through bereavement for the loss of loved

ones (Danieli, 1988). Because survivors may be similar to those who were not fortunate enough to have escaped death, they may feel in some sense "bound to the dead," which may exacerbate feelings of guilt.

Having experienced the untimely death of one's peers is often expected to result in a second survivor reaction known as "death anxiety" (Lifton, 1980). Death anxiety is marked by feelings of dread about the future (Straker, 1971). Although the fear of death may be a universal phenomenon and has been considered to be necessary for self-preservation, conscious awareness of human vulnerability and mortality appears to create the potential for overwhelming terror (Becker, 1973). In an attempt to avoid confrontations with this most basic fear, people develop illusions of invulnerability—illusions that may be psychologically protective (Janoff-Bulman & Frieze, 1983). Death anxiety may represent the "shattering" of these illusions of invulnerability and is characterized by ongoing thoughts or preoccupation with death and anxiety about one's own increased vulnerability to disease or disaster (Lifton & Olson, 1986). In contrast to other disasters, the threat of AIDS presents an ongoing threat to mortality.

A third survivor reaction has been labeled "psychic numbing" and is conceptualized as a way to protect oneself from feeling death anxiety and survivor guilt (Lifton, 1980). Psychic numbing may manifest itself in a number of affective or behavioral responses, such as the survivor's diminished ability to feel positive as well as negative emotions. Lifton describes a state of blunted or restricted affect that results from the inability to confront the magnitude of the disaster experience. We refer to the term "blunted affect" to use this aspect of psychic numbing, a reaction frequently observed in response to sudden and unexpected disaster (i.e., stunned state; Silver & Wortman, 1980).

Although the psychological reactions experienced by holocaust survivors have been carefully documented in a variety of contexts, this research has been primarily qualitative in nature. Moreover, very little quantitative research exists that investigates survivor reactions in nonclinical samples (for a notable exception, see Nadler & Ben-Shushan, 1989). The AIDS crisis in the gay community provides a unique opportunity to systematically examine these rich concepts in a community sample.

In our investigation of this topic, we hypothesized that a number of factors may impact on an HIV-negative gay man's likelihood of experiencing survivor reactions as outlined by Lifton (1980). For the present study, we have operationalized a "survivor reaction" as consisting of three specific reactions analogous to Lifton's constructs of survivor guilt, death anxiety, and psychic numbing (HIV-related guilt, AIDS-related death anxiety, and blunted affect). Factors hypothesized to exacerbate the presence of a survivor reaction included (a) having had many sexual partners in one's lifetime, (b) having lost a number

of close friends or intimates to AIDS, (c) having close friends who are currently infected with HIV (HIV-positive, AIDS-related Complex [ARC], or AIDS), and (d) feeling discomfort about one's homosexuality. Factors hypothesized to lessen the likelihood of experiencing a survivor reaction included (a) perceiving satisfactory levels of social support from gay friends in response to AIDS-related concerns and (b) involvement in gay-related community groups and organizations. In accordance with Lifton's definition of a survivor, we expected three of our independent variables to be correlated: the number of lifetime sexual partners, the number of AIDS-related bereavements, and the number of close friends infected with HIV. Below, we describe each of our variables in more detail.

1. *Number of lifetime sexual partners.* Retrospective and prospective investigations have found that having had many sexual partners early in the AIDS crisis increased one's risk of exposure to HIV (Anderson & Levy, 1985; Darrow et al., 1987). Therefore, having had many sexual partners prior to the AIDS crisis may contribute to an HIV-negative gay man's perception that he has been uniquely spared. Identical behavior in other gay men has led to HIV infection.

2. *Experiencing AIDS-related bereavements.* Having watched loved ones experience premature deaths to AIDS may make salient to the HIV-negative gay man that he has been spared at random.

3. *Number of close friends infected with HIV.* Having close friends who are HIV-positive (or have ARC, AIDS) not only provides the gay man with a current, constant reminder that he has been uniquely spared, but may also disrupt his ability to orient himself optimistically toward the future.

4. *Discomfort with homosexual identity.* The onset of the AIDS crisis has produced increased feelings of societal hostility toward gay men (Herek & Glunt, 1988). As a result, gay men may be internalizing homophobic societal attitudes, thereby experiencing increased discomfort with their sexual identity. The presence of internalized homophobia may be a form of "identification with the oppressor," which was found to increase guilt reactions among concentration-camp survivors (Berger, 1977; Straker, 1971).

5. *Satisfaction with social support from gay friends.* Being satisfied with the level of support received from one's social environment appears to facilitate an individual's adjustment to stressful life experiences (House, Landis, & Umberson, 1988) and has been shown to reduce psychological distress associated with negative life events (Cohen & Wills, 1985). Gay friends are considered especially important for gay men because they serve as an extended family, and may provide more satisfying support in response to AIDS-related concerns than might straight friends or parents (Donlou & Wolcott, 1985). The provision of a safe environment in which to cope with feelings of guilt,

vulnerability, and/or emotional numbing may be more likely to be found within a supportive network of gay male friends.

6. *Involvement in gay community groups and organizations.* Involvement in gay-related community groups and activities may empower HIV-negative gay men to reject society's negative view of homosexuals, as well as help to restore psychological well-being for themselves as individuals and as a community. Group efforts, or group "formulations," are also said to allow survivors a way to find meaning in a disaster (Couto, 1989; Lifton & Olson, 1986).

To the extent that the AIDS crisis in the gay community can be considered a "holocaust" and that HIV-negative gay men can be classified as "survivors," this study was designed as a preliminary investigation to assess the aforementioned factors as predictors of a survivor reaction. Because we predicted that these relationships would be unique to HIV-negative gay men, we also examined the relationship between predictor variables and survivor reactions among HIV-positive gay men.

Method

Sample

The sample was recruited from an existing cohort of approximately 1,400 gay and bisexual men participating in the Multicenter AIDS Cohort Study (MACS) in Los Angeles. The MACS is a multi-site, collaborative longitudinal research study of the epidemiology and natural history of AIDS (Kaslow et al., 1987). Between April 1984 and December 1985, 1,637 participants were enrolled in the Los Angeles MACS cohort. Selection criteria were: 18 years of age or older, no diagnosis of AIDS or cancer (excepting skin cancer), and never having undergone radiation therapy. Participants ranged in age from 18 to 50 years, with a mean age of 32. In 1986, 122 additional men who were intimate partners of MACS participants at that time were also recruited to participate in the study (age range 18-57, mean = 33). Ninety-five percent of the MACS cohort were white. The majority of subjects (55%) had at least a college education. Approximately 49.5% tested positive for HIV at baseline.

MACS study participants are assessed at 6-month intervals. Assessment procedures include a physical examination to detect signs and symptoms of AIDS, collection of blood and other specimens for virological and immunological studies, and an interview assessing behavioral factors (e.g., sexual practices, drug use) that may contribute to the development of AIDS. Beginning in August 1987, active MACS participants (approximately 1,330 men) were offered the opportunity to participate in the Natural History of AIDS-Psychosocial Study (NHAPS). This study is aimed at determining current

psychological appraisals of, emotional responses to, and methods of coping with the risk of developing AIDS, as well as the impact of these processes on behavior and health. Between August 1987 and October 1988, 798 men were recruited into the NHAPS, a participation rate of 60%. The resulting NHAPS sample was demographically similar to the MACS sample from which it was recruited. For example, the mean age of all subjects who visited the Los Angeles MACS study during the NHAPS enrollment period was 36, with a range of 22 to 60, as was that of the resulting NHAPS sample. Similar to the MACS sample, over 90% of the NHAPS sample was white, with over 66% having at least a college education.

In winter 1988, all NHAPS participants were given the opportunity to complete another questionnaire which assessed variables of interest for the present study. Of the active NHAPS participants, 596 returned questionnaires, yielding a response rate of 74%. This sample was very similar to the larger NHAPS and MACS samples on demographic characteristics. The mean age of these subjects was also 36, with a range of 23 to 60. Ninety-one percent of this sample was white, and 65% had received at least a college education. Of these subjects, 329 (55%) were HIV-negative and 244 (41%) were HIV-positive. Twenty-three men (4%) reported having an ARC diagnosis and were therefore excluded from the present study. Of the remaining 244 HIV-positive and 329 HIV-negative men, 190 were excluded because they were not aware of their HIV status (108 HIV-negative, 82 HIV-positive). An additional 189 men were excluded due to random missing or incomplete data (92 HIV-negative, 97 HIV-positive).

The present paper utilizes data from 129 HIV-negative and 95 HIV-positive subjects from the NHAPS study who knew their HIV antibody status and who had complete data on all variables of interest.³ Inspection of demographic characteristics revealed that our samples of HIV-negative and HIV-positive gay men were very similar to those men in the larger NHAPS sample who knew their HIV status. In order to insure that there were no systematic differences between those subjects we excluded from the study and our final sample, we compared each of our samples with gay men who were excluded because of missing data (92 HIV-negative, 97 HIV-positive). There were no significant differences between the groups on our measures of HIV-related guilt, AIDS-related death anxiety, or blunted affect. We also compared these groups on available demographic variables. Again, no significant differences emerged (all p 's < .05).

³Information on the experience of AIDS-related bereavement was only available for 114 of the 129 subjects.

Design and Procedures

The NHAPS questionnaire, timed to coincide with the MACS exams and administered every 6 months, consisted of a number of standardized scales, as well as AIDS-related questionnaires developed for the purposes of the study. NHAPS questionnaires were mailed to subjects prior to their MACS exam and returned at the time of the exams or through the mail. HIV status and lifetime number of sexual partners were obtained from MACS data obtained in 1987. Knowledge of HIV status, perceptions of vulnerability to AIDS, and number of community groups and organizations in which subjects were involved was obtained from NHAPS questionnaires administered in 1987. In fall 1988, participants also completed an additional packet of questionnaires that assessed historical information, as well as more stable aspects of psychological functioning and psychological adjustment. From these questionnaires, information was obtained regarding friendship networks, experiences with bereavement, current emotional state, HIV-related emotions, and satisfaction with AIDS-related social support. Thus, our predictor variables were all measured prior to our assessment of outcome measures of survivor reactions.

Measures

In addition to open-ended questions about how AIDS may have affected views about the world, the future, and other people (adapted from Taylor, 1983), subjects completed the following measures:

HIV status and knowledge of HIV status. HIV status was objectively determined on the basis of blood samples drawn at the MACS visits. Blood samples were subjected to ELISA tests, and positive tests were confirmed by Western Blot. On the NHAPS questionnaire, respondents were asked whether they "ever received results from an AIDS (HIV) antibody test." Respondents who answered "yes" were then asked whether they were HIV-positive or -negative. The answer to this question was checked against their actual antibody status. On the basis of this information, a group of HIV-negative and HIV-positive subjects were identified.

HIV-related guilt. In order to measure guilt about their HIV status, subjects were asked to complete an HIV-specific condensed version of the Affects Balance Scale (ABS; Derogatis, 1975) using a 5-point scale *never* (0) to *always* (4) in response to the question "When I think about my HIV status, I feel..." Subjects' scores on the guilt subscale of the ABS (guilty, blameworthy, ashamed, remorseful, regretful) in response to their HIV status were averaged to form a score representing HIV-related guilt, which had a coefficient alpha of

86. A high score on this variable indicates more frequent feelings of HIV-related guilt.

AIDS-related death anxiety. Eight items were conceptualized on an a priori basis to represent AIDS-related death anxiety. These items measured anxiety, worry, hopelessness and fear of contracting AIDS despite an HIV-negative diagnosis. On the basis of a principal-components analysis, only six items loaded on the first factor above .40. Four items assessed the frequency with which subjects experienced anxiety in response to the question "When I think about my HIV status, I feel...." These items (anxious, nervous, afraid, and hopeless) were taken from an HIV-specific condensed version of the ABS (Derogatis, 1975) and were rated on a 5-point scale ranging from *never* (0) to *always* (4). Two items, rated on a 7-point scale, assessed how likely the subject thought his chances were of getting AIDS, both overall *almost certain I will not* (1) to *almost certain I will* (7) and compared to the average gay man *much lower* (1) to *much higher* (7). These 6 items were standardized and summed to form a score with a coefficient alpha of .80. A higher score on this measure indicates greater AIDS-related death anxiety.

Blunted affect. The degree to which subjects experienced positive and negative emotions in general was assessed using the ABS (Derogatis, 1975). Subjects rated the frequency with which they felt 40 emotions in the past week on a 5-point scale *never* (0) to *always* (4). Items were reversed such that a higher score represented less affect. A positive and a negative subscore were derived by computing a mean for the four positive-affect (joy, vigor, contentment, and affection) and the four negative-affect (anxiety, guilt, hostility, and depression) subscales. Coefficient alphas for the positive- and negative-affect subscales for this sample averaged .87. The positive and negative subscores were added for a measure of blunted affect, such that low scores indicated full affect and high scores indicated blunted, or diminished, affective experience.

Number of lifetime sexual partners. MACS subjects were asked in 1984 to estimate the number of different individuals with whom they had ever engaged in sexual activity. This information assessed subjects' sexual behavior before there was widespread understanding of the risk of contracting AIDS from certain sexual activities.

Experience of AIDS-related bereavements. Subjects were asked to report how many close friends and how many intimates (e.g., partners) had died from AIDS since the beginning of the AIDS crisis. The number of people reported from these two questions was summed.

Percentage of close friends infected with HIV. Respondents were instructed to complete a grid that asked for information about the gender, sexual orientation, and HIV status of their "close" friends. From this information, we calculated the percentage of close gay male friends who were HIV-positive

(including ARC or AIDS) for each subject out of the total number of close friends listed.

Discomfort with homosexual identity. Subjects completed a scale of "social comfort" with gay situations that was designed for use with a homosexual sample (McDonald, 1982). Subjects were asked to think about or imagine each of 19 situations, and then rate on a 5-point Likert scale how comfortable they would feel in that situation *extremely uncomfortable* (1) to *not at all uncomfortable* (5). Items include "going alone to a movie that depicts gay men," and "going to a fancy 'straight' restaurant with your partner." A mean was calculated for the 19 items such that a higher score reflects greater discomfort with gay situations. Coefficient alpha for the scale was .89.

Satisfaction with social support from gay friends. Subjects were asked how satisfied they were with the social support received from gay friends in "dealing with the threat of AIDS to you and your lifestyle." This item is part of a condensed version of the UCLA Social Support Inventory (Dunkel-Schetter, Feinstein, & Call, 1986). The degree of satisfaction with support received from gay friends was rated on a 5-point Likert scale ranging from *very dissatisfied* (1) to *very satisfied* (5).

Involvement in community organizations or groups. Subjects were asked if they belonged to any community organizations or groups, and were asked to list the groups with which they were involved over the past month.⁴ A score was calculated by summing, for each subject, the total number of groups with which he was involved.

Results

Characteristics of the Sample

As indicated in Table 1, this sample is predominantly white (93%) and highly educated, with 53% having at least a college education. The participants ranged in age from 24 to 54, with a mean age of 37.8. Ninety-five percent of the subjects identified themselves as being either "exclusively" or "predominantly" homosexual, and over 80% considered themselves to be mostly or completely "out of the closet." From the friendship grid, we calculated that subjects had an average of 7.8 close friends, of whom 67% were other gay men. In addition, close friendship networks consisted of straight women (16%), straight men (11%), and lesbian women (6%). In order to ensure comparability

⁴Of the community groups and organizations listed, almost 60% were gay-related. Of those subjects who were involved in community groups and/or organizations, 80% reported being involved in at least one or more gay-related group and/or organization.

Table 1

Sample Demographic and Gay Identity Information of HIV-Negative Gay Men

Item	Percent of sample
Race	
White	93.0
Hispanic	5.4
Black	0.8
Asian	0.8
Education	
9-11 grades	0.8
12 grades or GED	5.5
1 year college, no degree	19.5
4 years college with degree	27.3
Some graduate school	16.4
Graduate school and degree	30.5
Sexuality	
Exclusively homosexual	69.8
Predominantly homosexual	25.6
Bisexual	3.8
Predominantly heterosexual	0.8
Exclusively heterosexual	0.0
Disclosure of gay identity	
Completely out of the closet	34.1
Mostly out of the closet	46.5
Half in and half out	15.5
In the closet most of the time	3.9
Definitely in the closet	0.0
Friendship networks^a	
Gay males	67.0
Heterosexual females	16.0
Heterosexual males	11.0
Lesbian women	6.0

^aPercentages represent mean sample percentages for each category of friends.

Table 2

Correlation Matrix of Predictor and Outcome Variables in Sample of HIV-Negative (N = 129) and HIV-Positive (N = 95) Gay Men

Variables	1	2	3	4	5	6	7	8	9
1. Friends with HIV infection (%)	—	-.05	.26**	.09	-.05	.04	-.17.	.03	-.04
2. Number intimates died of AIDS	.31**	—	.04	.01	.10	-.00	.00	.15*	-.24*
3. Number lifetime sexual partners	.02	.32**	—	.02	.06	.18*	-.23*	-.10	-.04
4. Group involvement	.02	.09	-.12	—	.08	.14	-.12	-.07	.00
5. Satisfaction with social support	.02	.17*	.10	.17*	—	.10	-.00	.00	.02
6. Discomfort with homosexual id	-.01	.01	-.03	.03	.03	—	.44**	-.15	.07
7. HIV-related guilt	-.04	-.03	.17*	-.03	-.25**	-.10	—	.48**	.09
8. AIDS-related death anxiety	-.13	-.14	.13	-.11	-.21*	-.03	.35**	—	.06
9. Blunted affect	.03	.04	.11	.07	.03	-.12	.23**	.09	—

Note. HIV-negative data presented in lower left matrix, HIV-positive in upper right matrix.

* $p < .05$. ** $p < .001$.

of our HIV-negative and HIV-positive samples, these groups were compared on these variables. No significant differences were found on any of these variables.

Variables Associated With Survivor Reactions

In order to investigate the role of variables hypothesized to influence the presence of survivor reactions among HIV-negative gay males, we tested our hypothesized model using EQS, a structural equation modeling program (Bentler, 1989). Maximum likelihood method of model parameter estimation was used, since it has been shown to be quite robust over normality violations (Satorra & Bentler, 1986). The correlation matrix of predictor and outcome variables is shown in Table 2.

Our hypothesized model allowed for the simultaneous regression of six independent variables onto a latent variable termed "survivor reactions." This latent variable consisted of our three survivor reactions: HIV-related guilt, AIDS-related death anxiety, and psychic numbing. This model also imposed the necessary assumption that predictor variables are not associated with the residual error variables of the dependent variables (Bentler, 1989). In order to evaluate how well our model fit, or replicated the covariance matrices of our samples, we relied on three indicators of fit: the p value (should be greater than .05), the chi-square to degrees of freedom ratio (should be 2:1 or less), and the comparative fit index (CFI; Bentler, 1990; a value of 0 reflects no fit, and value of 1 reflects a perfect fit).

HIV-negative gay men. The hypothesized model provided a very good fit to the data, $\chi^2(23, n = 129) = 14.53, p = .91, CFI = 1.00$. Results indicated that the three measures of survivor reactions significantly loaded onto the "survivor reaction" latent variable (all $ps < .05$). Although the overall model fit the data, not all of the paths or correlations were significant. Significant path coefficients (equivalent to partial regression coefficients), as well as the significant correlations among several independent variables, are presented in Figure 1. For the sake of clarity, nonsignificant paths and correlations are not included in the figure.

Results indicated that the larger the number of sexual partners subjects HIV-negative gay men reported having had prior to 1984, the greater level of survivor reactions they reported ($\beta = .32, p < .01$). The number of lifetime sexual partners was significantly correlated with AIDS-related bereavement experiences ($r = .31, p < .01$), indicating that having a greater number of past sexual partners was associated with having had more intimates die of AIDS. Satisfaction with social support from gay friends surrounding AIDS-related concerns was associated with lower levels of survivor reactions ($\beta = -.36,$

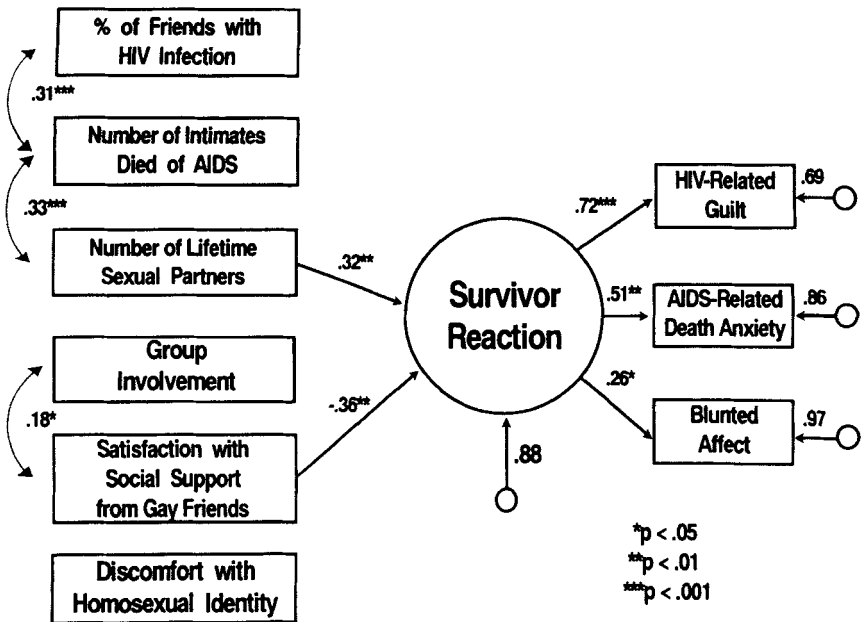


Figure 1. Path model of variables associated with survivor reactions in HIV-negative gay males.

$p < .001$). Subsequent analyses revealed a trend ($p < .10$) such that group involvement indirectly predicted fewer survivor reactions via its association with satisfaction with social support ($r = .18$, $p < .05$). More frequent experience with bereavement was significantly correlated with a higher percentage of close friends currently infected with HIV ($r = .31$, $p < .01$). Overall, the model accounted for 33% of the variance of our measure of survivor reaction.

Is a survivor reaction unique to HIV-negative gay men? In order to examine if the phenomenon observed in the HIV-negative model was unique to HIV-negative gay men, and therefore a function of being a survivor, we examined if the HIV-negative model could also explain the data from a sample of comparable HIV-positive gay men. Unfortunately, however, blunted affect was not correlated with either the measure of HIV-related guilt or AIDS-related death anxiety. Thus, we were unable to test a model which included the survivor reaction latent variable. That is, among HIV-positive gay men, our three outcome measures did not tap a single factor termed "survivor reaction."

Instead, we examined a model that allowed for simultaneous regression of our six independent variables on each of the three dependent variables. This model also allowed the residuals of the dependent variables to correlate freely

as well as imposed the necessary assumption that predictor variables are not associated with the residual error variables of the dependent variables (Bentler, 1989). This model was examined in both the HIV-negative and HIV-positive samples. The model fit the HIV-negative sample very well, $\chi^2(1, n = 129) = .08, p = .78, CFI = 1.00$. As with the latent variable model, the number of lifetime sexual partners was significantly associated with more HIV-related guilt and AIDS-related anxiety. Satisfaction with support from gay friends was associated with lower levels of HIV-related guilt and AIDS-related anxiety. Correlations among the independent variables were identical to those found in the latent variable analysis reported earlier. That is, HIV-negative gay men who had experienced a greater number of AIDS-related bereavements reported a greater number of lifetime sexual partners and also had a greater number of friends who were infected with HIV. Satisfaction with support from gay friends was also associated with gay community involvement.

Next, in order to examine if the pattern of results found among HIV-negative gay men was unique to them, we tested the same model in the HIV-positive sample. Although the model fit the data very well, $\chi^2(1, n = 95) = .77, p = .38, CFI = 1.00$, inspection of significant paths between the predictor variables and the three survivor reactions revealed several important differences. First, number of lifetime sexual partners and satisfaction with social support were not significantly associated with either HIV-related guilt or AIDS-related anxiety. Instead, HIV-positive gay men who were high in internalized homophobia reported being less likely to feel guilty about their HIV status ($\beta = -.41, p < .001$). None of the remaining four predictor variables was significantly associated with AIDS-related anxiety. Although there were no significant predictors of blunted affect among HIV-negative gay men, HIV-positive gay men who had experienced more AIDS-related bereavements were less likely to report blunted affect ($\beta = -.25, p < .01$). HIV-positive gay men who had reported a greater number of lifetime sexual partners also reported having more friends who were infected with HIV ($r = .27, p < .01$). A trend also existed that HIV-positive gay men who were higher in internalized homophobia also reported a greater number of lifetime sexual partners ($r = .18, p < .05$, one-tailed). Again, correlations among the predictor variables appeared to be very different from those found in the HIV-negative sample.

When a model has been tested in two samples, EQS allows for the statistical comparison of the two models. In order to examine if HIV-negative and HIV-positive models were truly different, we tested a model that specified that the paths between the predictors and the three survivor reactions as well as the correlations among the independent variables were equivalent in the two samples. Results from our multi-sample analysis revealed that the covariance matrices of the HIV-positive and HIV-negative samples were *not* equivalent,

$\chi^2(40, n = 224) = 123.6, p = .001, CFI = .20$. Through the use of LaGrange multiplier tests, we also compared the significant pathways and correlations in the HIV-negative model with the same paths in the HIV-positive model and found significant differences (all $ps < .05$).

Discussion

Results of the present study indicate that a gay man's HIV status may moderate his affective reactions to the AIDS crisis. Three specific survivor reactions, HIV-related guilt, AIDS-related death anxiety, and blunted affect, were found to be interrelated among HIV-negative gay men, thus forming an underlying construct of survivor reaction. This was not the case among HIV-positive gay men—the three measures did not tap a common phenomenon. Thus, we found support for our hypothesis that the psychological responses of some HIV-negative gay men in reaction to the AIDS crisis may be understood from the perspective of being a survivor; that is, having encountered, been exposed to, or witnessed death, and yet remain alive (Lifton, 1980). Among our sample of HIV-negative gay men, we found that a survivor reaction was predicted by the number of sexual partners they reported having had in the past. In addition, having a higher number of lifetime sexual partners was also associated with having a greater number of intimates who have died of AIDS. Thus, watching intimates die of the disease, and knowing that one has engaged in past sexual behavior similar to that of men who have become HIV infected, undoubtedly heightens the perception of being spared at random and appears to exacerbate survivor reactions. Several responses to a series of open-ended statements about the effects of the AIDS epidemic on one's life highlight this point:

I am fortunate to have avoided the disease, since I participated in high-risk activities in the '70s and early '80s...this is very much due to luck.

I feel somewhat guilty that my closest friends are HIV-positive, and I was bypassed.

Thus, although survivors acknowledge relief and good fortune, they may also have difficulty with the fact that they have survived. As Lifton (1980) has suggested, survivor guilt may be a result of the survivor's sense of "painful condemnation over having lived while others have died" (Lifton & Olson, 1986, p. 311).

Despite being aware for a number of years that they have an HIV-negative

antibody status, HIV-negative gay men who had many sexual partners in the past and who experienced AIDS-related losses nonetheless reported AIDS-related death anxiety.⁵ This is despite the fact that current medical evidence suggests that if an individual has not tested positive up to this point and has eliminated high-risk behavior, he is unlikely to seroconvert (Cooper et al., 1985). Thus, it is important to rule out an alternative explanation for our results: that current, rather than past, high-risk sexual behavior is predictive of elevated levels of AIDS-related death anxiety. We were able to explore this possibility by examining the correlation between the lifetime number of sexual partners and AIDS-related death anxiety, after partialling out current risky sexual behavior (i.e., anal receptive intercourse without using a condom, assessed in 1988). Results indicate that current risky sexual behavior did not attenuate the relationship between past sexual behavior and AIDS-related death anxiety, and is therefore not responsible for our findings.⁶ Thus, although HIV-negative gay men may know on a cognitive level that they are safe from HIV infection, one result of having been spared may be an irrational fear of death. Many subjects commented on how fragile life seemed, as a result of being forced to consider their own mortality and vulnerability to death. For example:

It is a threatening place where you can contract a terminal illness at any time. I view all strangers as people who could expose me to the virus.

It [the threat of AIDS] makes me view our lives as much more fragile and beyond our control.

I'm concentrating less and less on my future; I am anxious about what tomorrow may bring.

⁵In order to ensure that our measure of AIDS-related death anxiety was distinct from feelings of general anxiety, we examined the extent to which the two measures operated differently in our analyses. First, we examined the simple correlation between our measure of AIDS-related death anxiety and subjects' scores on the anxiety subscale of the ABS, and found only a moderate correlation ($r = .37$). We then tested two additional path models. In the first, we substituted general anxiety (measured by the anxiety subscale of the ABS) for AIDS-related death anxiety as one of the three dependent variables. In the second, we tested a model that added the measure of general anxiety as a fourth dependent variable. In both models, neither of the variables that significantly predicted AIDS-related death anxiety (i.e., the lifetime number of sexual partners and the receipt of satisfactory social support from gay friends) significantly predicted the general measure of anxiety. Thus, we feel comfortable concluding that our measure of AIDS-related death anxiety was not simply a measure of general anxiety.

⁶Results are based on MACS data available for 101 subjects.

Although a community may be experiencing a traumatic event, it is precisely within that community that its members may find strength. It is not surprising that such important sources of support would come from a community where its members share similar experiences and similar identities. The gay community provides gay men with important forms of support; support that is often lost when one's homosexual identity is revealed to family and society (Kurdek & Schmitt, 1987). Involvement in the gay community traditionally has been associated with better adaptation to homosexuality, enhanced self-image, and psychological well-being (Weinberg & Williams, 1974), providing the sense that one is "part of a special community with everyone in the same boat" (Lynch, 1987, p. 27). In our study, the greater the satisfaction with social support from gay friends about AIDS-related concerns, the less likely HIV-negative gay men were to report experiencing a survivor reaction. These results are similar to those of research on postwar adjustment of Holocaust survivors that has found social support to play a major role in coping with and recovery from holocaust-related trauma (Danieli, 1982). In a recent study of the long-term effects of the Nazi Holocaust, Nadler and Ben-Shushan (1989) found that Israeli survivors who lived in a kibbutz reported higher psychological well-being than those who lived in a city after the war. Survivors reported that the kibbutz assisted in their adjustment, because of instrumental and emotional support (e.g., a strong sense of togetherness). The researchers concluded that the kibbutz may have provided an effective coping environment for Holocaust survivors because it "embodies both institutional and psychological support while at the same time providing a unique ideological meaning" (Nadler & Ben-Shushan, p. 292).

We postulate that satisfactory support from one's gay social relationships may serve a protective function by offering a safe emotional environment in which survivor-related feelings may be validated and worked through (cf. Pennebaker & Beall, 1986; Wortman & Dunkel-Schetter, 1979). However, we cannot rule out reverse causal explanations (Dunkel-Schetter, Folkman, & Lazarus, 1987). For example, it may be that in certain instances, feelings of guilt or vulnerability to AIDS might lead to social withdrawal from those very relationships that might offer satisfying support. Longitudinal work is necessary to examine the direction of this relation in more detail.

As the Kibbutz has facilitated the psychological adjustment of holocaust survivors (Nadler & Ben-Shushan, 1989), the gay community is also likely to be an important source of support for dealing with AIDS-related survivor issues. Group formulations (e.g., finding "meaning" in the catastrophe) may be facilitated by group and community involvement, which may provide members of a community a way to express their common loss, help others understand the significance of the loss, and prevent others from falling victim to similar fates

(Couto, 1989; Lifton & Olson, 1986). Our results also provide some support for the importance of group involvement in reducing survivor reactions. It appears that HIV-negative men who participate in gay- or AIDS-related groups may also experience greater satisfaction with support around AIDS-related concerns, which, in turn, is associated with less of a survivor reaction. The importance of support and community involvement was also apparent in subjects' open-ended comments:

I am ... feeling closer, sympathetic with my gay friends ... feel we are joined in a mutual battle for survival.

I am enormously impressed and almost awed by the response of gay people as individuals and as a group. We have stopped waiting for permission to survive—and have written volumes on survival.

Limitations

It is important to recognize a number of possible caveats to the results of our study. First, several factors may complicate the evaluation and measurement of guilt and death anxiety: They are complex phenomena (cf. May & Yalom, 1984), and socially desirable responses and/or denial mechanisms may underestimate their occurrence (Bailey, 1985). Second, due to the nature of the AIDS crisis, we have operationalized the general constructs of survivor guilt, death anxiety, and blunted affect with specific measures relevant to the experiences of HIV-negative gay men. Although these operationalizations reflect the constructs described by Lifton (1980), we recognize that this study represents a preliminary investigation of these issues among HIV-negative survivors. Given that we measured these constructs by adapting existing measures, we also acknowledge the need to be cautious about interpreting the degree of association among our variables.⁷ Third, we were unable to find associations with our measure of blunted affect using the variables we assessed. Future research should explore other variables that might be associated with blunted affect, as well as explore other hypothesized manifestations of psychic numbing (e.g., more detailed measures of diminished emotional intensity; sexual, social, and emotional withdrawal; cf. Lifton, 1980). We also acknowledge that the size of predicted relationships was modest. However, we expect that improved operationalization of these constructs could strengthen the associations

⁷Although our measures of AIDS-related death anxiety and HIV-related guilt appear to be similar, they share only 14% common variance.

and generally improve the predictive validity of our model. In addition, we also believe that future research of this topic will benefit from the inclusion of other social psychological variables that have been useful in understanding the psychological reactions of ordinary people facing extraordinarily stressful circumstances.

Another caveat regarding this research is that it is challenging to find samples of gay men for which some variables of interest are normally distributed. For example, the range on our measure of discomfort with homosexual identity was restricted by a relatively open sample of individuals who were willing to participate in research. As a result, the examination of survivor-related issues may be limited in samples of highly educated and motivated men who volunteer to participate in complex longitudinal studies.

While potentially similar to other holocaust survivors, it must also be recognized that there are a number of features of this population that make HIV-negative gay men somewhat unique from other "holocaust survivors." First, their "holocaust" is ongoing, and the death rate is increasing. Thus, HIV-negative men must continue to cope with accelerated numbers of losses. Second, the danger of AIDS continues to challenge the integrity of the gay community as a whole. Third, depending on the nature of their current and future sexual practices, these men must contend with the possibility of becoming HIV-positive themselves. HIV-negative gay men may never feel "safe" with respect to HIV, and these fears may coincide with a survivor reaction. Finally, our results indicate that HIV-negative gay men with fewer lifetime sexual partners were less likely to experience a survivor reaction. An HIV-negative gay man is only likely to feel like a survivor if he feels he has been spared. Thus, HIV-negative gay men who have not engaged in risky sexual behavior, or who were not sexually active, should not be expected to experience a survivor reaction. That is, the explanations gay men have about why they are HIV-negative should moderate the presence and strength of survivor reactions. Future research would benefit from an examination of the attributions HIV-negative gay men make about their HIV status.

Conclusions

Presently, the concerns and reactions of HIV-negative men are being relatively ignored, by the gay community and researchers alike. As more gay men die of AIDS, and others learn of their HIV-negative antibody status, the potential for survivor reactions in HIV-negative men may increase. As one subject in our study wrote:

As a surviving partner, one whose number of living friends has

dwindled steadily from large numbers in 1983 to "mostly deceased by 1989," I'm here to tell you that the stress and anxiety are real. It's very difficult to figure out why some of us are left and others are not, especially when we all did the same things.

Despite his HIV-negative antibody status, an HIV-negative gay man may nonetheless feel anxiety about subsequent test results, fear of contracting HIV, distress about the continuing loss of friends and intimates, and isolation as a result of the disruption of social activities. In addition, he may feel that he does not have the "right" to solicit support from others, but instead must be expected to provide support for those who are perceived as having more "legitimate" needs (e.g., those men with AIDS, ARC, or who have tested HIV-positive). Thus, we contend that the psychological state of HIV-negative gay men deserves greater attention by researchers and clinicians in the area.

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