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Religion and Spirituality Among Persons Living with HIV

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C.H.A.I.N. REPORT

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INTRODUCTION

Living with HIV disease is challenging for most individuals, particularly those who are faced with other stressors including inadequate housing, financial need, and limited social support. HIV can be a severely debilitating illness that results in repeated opportunistic infections, physical and mental health impairment, and early death. However, it is clear that many individuals who are HIV positive have fared better than others in coping with their illness and maintaining good health functioning over time. Religion or spirituality can be a resource that people with chronic diseases use to cope with the physiological and psychosocial challenges of illness (see review in McCormick et al., 2001).

Nonetheless, information about the effects of spirituality on the health and well-being of persons infected with HIV is limited (McCormick et al., 2001; Tuck et al., 2001). HIV is a complex illness with a wide variety of biological, psychological, and social factors that affect health outcomes. However, many of these factors appear to be influenced by religious beliefs and practices, either with regard to how persons apply meaning and cope with illness, and/or because of the benefits of participation in religious or spiritual organizations or communities (Koenig, et al., 2001).

The purpose of this report is to examine religion and spirituality among persons living with HIV / AIDS (PLWH/A's) in New York City. What are patterns of religious or spiritual belief among PLWH/A's and how do these compare to the general American population? To what extent are HIV positive individuals involved in religious and spiritual activities? Are there differences in mental health, physical health or quality of life outcomes among persons with differing religious or spiritual profiles? Is religious involvement associated with lower mortality risk among persons with HIV/AIDS?

BACKGROUND AND METHODOLOGY

The CHAIN survey and data

Patterns of religious and spiritual involvement will be examined through an analysis of aggregate data from a representative sample of HIV-infected adults (age 20+ years) in New York City. The data were collected as part of the Community Health Advisory & Information Network (CHAIN) Project, an ongoing longitudinal study funded since 1994 by the City's Title I Health and Human Services Planning Council (the Planning Council). The CHAIN Project tracks individuals' encounters with both medical care and ancillary services and links patterns of service delivery to a wealth of information on individual characteristics and health outcomes. The CHAIN Project has interviewed HIV-infected individuals in the cohort every 6-12 months since 1994, and data for this study are current as of 2002.

The CHAIN Project followed a recruitment procedure designed to yield a broadly representative sample of people living with HIV in New York City. Study recruitment was conducted in 43 agencies, which were selected so that there would be roughly an equal number of medical care and social service sites represented, as well as representation both from sites that were Title I grant recipients, and sites that were not. At 30 sites, staff contacted a random sample of clients. A sequential enrollment procedure was implemented at the remaining 13 agencies. All eligible clients

present on a small number of recruitment days were invited by agency providers and CHAIN staff to participate in the CHAIN study. A total of 648 individuals recruited from participating agencies completed baseline interviews. The agency-based sample was supplemented with 50 interviews conducted with HIV+ individuals with little or no connection to medical and social services. These individuals were contacted at outreach sites and through nominations from CHAIN participants. More detailed information on sampling strategy and recruitment may be obtained upon request from MHRA (CHAIN Technical Report #1, 1995).

Subsequent interviews were conducted at approximately six to twelve month intervals. Round two interviews were completed with 568 participants, 92% of the cohort still alive and not known to have moved outside of New York City. Round three interviews were conducted with 480 CHAIN participants, 88% of the cohort who were alive and still residing in New York City. Round four interviews were conducted with 420 CHAIN participants or 82% of the surviving cohort. In an effort to replenish the CHAIN sample which had lost a number of participants to death and other factors, in 1998 an additional 267 individuals were added to the study, using the same agency and community sources. These individuals constituted the 'refresher' sample and joined the 385 CHAIN continuing participants who have been involved in the project since its inception in 1994, bringing the total number of people interviewed in round five to 652. In round six, 508 participants, in round seven 444 participants and in round eight, 387 were interviewed representing over 80% of those eligible at each interview period (not known to be deceased or moved out of the NYC area).

All CHAIN interviews are conducted in person by interviewers recruited from communities throughout New York City and trained specifically for the study. Interviewers are matched to respondents as much as possible with regard to gender and race/ethnicity. Interview topics include sociodemographic characteristics, the full range of experiences with access and use of medical and social services, and quality of life. A number of questions about religion or spirituality were included in each interview.

<u>Measuring Religion/Spirituality</u> For the purpose of this report, religious involvement or religiosity and spirituality are used as overlapping concepts. "Religion" usually refers to a formal set of beliefs and practices affiliated with an acknowledged religious authority, while "spirituality" can loosely be defined as a personal experience and a sense of connectedness with a higher being, or the search for transcendent meaning (Matthews, et al., 1998). Some individuals will describe themselves as "spiritual" while not religious believers nor observant within a particular religious tradition (Astrow, et al., 2001). The CHAIN interview asks jointly about "religion or spirituality." No attempt was made to distinguish between the private, devotional or belief dimension of religion/ spirituality from measures of religious affiliation. However, separate items were included to measure membership and social participation in religious groups. Respondents were asked: (1) *How important is religion or spirituality to you?* (2) *Do you believe in God, a universal spirit, or a higher power?* (3) *How often do you pray or meditate*? They were also asked about religious affiliation: (4) *What is your religious preference? Is it Protestant, Catholic, Jewish, Muslim, some other religion or no religion*? The two social participation items asked about membership in a religious organization: (5) *Are you a member of a specific church, mosque, synagogue or other religious organization?* and about participation in organized or public religious activities: (6) *How often, if at all, do you attend church, synagogue, a mosque or other religious or spiritual services?*

In the descriptive analyses that follow, we examine a number of single item indicators of religion/ spirituality (religious affiliation, belief in God, frequency of prayer, etc) using cross-sectional data from the CHAIN cohort interviews, compared to national survey data from the same year. In addition, we have created a number of summary measures taking into consideration overtime data. To create the summary measures, we restricted analysis to the continuing cohort who were interviewed at each of the more recent interview periods: Wave 5, 1998, to Wave 7, 2001 (n=382). "High salience" was indicated when the respondent answered the religion or spirituality was very important to him or her at all three interviews. "Daily devotion" was indicated by reports of personal prayer or meditation at least once a day, "regular attendance" was indicated by attendance at church or other religious or spiritual services monthly or more often, and "consistent membership" was indicated by reports of membership in a church, synagogue, mosque or other religious organization, at each interview period.

We also created a composite index or overall "religious profile" taking all of these indicators into consideration. The summary measure classifies CHAIN participants into a single religious type based on their responses over time to questions on both dimensions of religion/spirituality: the inner dimension of religious or spiritual belief and personal significance, as well as high on the external dimension of membership in a church or other faith community, and participation in organized religious services. Individuals were classified as "High faith/ high participation" if they answered that religion or spirituality was "very important" to them, and that they prayed "everyday" and they also reported that they attended religious or spiritual services monthly or more often during all three interviews they completed from Wave 5 to Wave 7. Individuals for whom religion was very important and who prayed daily but who did not attend services monthly or more often were classified as "High faith/ low participation." Likewise, individuals who attended services monthly or more often but scored lower on indicators of religious faith and personal significance were coded "Low faith/ high participation." Another category "religion importance, no practice" represented individuals for whom religion was very important, but who did not practice internal (pray) or external activities (attend services). The final category represents individuals who are "No importance, no practice" who consistently answer that neither religion or spirituality is important to them and who do not participate in either organized religious services or private or devotional activities. We use the religious profile classification to examine the relationship between religion/ spirituality and health and quality of life outcomes.

<u>Measuring Health/ Mental Health</u> - We have characterized health along two dimensions. Clinical health indicators included self-reported t-cell counts viral load levels. In addition, a standardized measure of physical health functioning was used, (MOS-SF36) that provides a composite score that encompasses measures of limitations in activities of daily living, social activity impairment, experience of pain, and other markers of functional health (McHorney et al. 1993; Ware et al. 1997).. Two additional measures of subjective health status were used. Respondents are asked: *Would you say your own health, in general, is excellent, good, fair, poor?* They were also asked to rate their overall quality of life during the past 4 weeks. We explore these measures because earlier studies of religion and health have also shown that church attendance is a strong predictor of subjective health (Musick, 1996).

Mental health was measured by the mental component summary scale of the same standardized instrument (MOS SF-36). It includes questions about symptoms of depression and anxiety, and other markers of impaired mental health functioning. Prior research has shown that religious involvement is significantly associated with lower rates of depression and anxiety, and increased well being, and life satisfaction (Koenig, et al., 2001).

Measuring Mortality Risk

Prior research investigating religion and mortality indicates an association between religious involvement and greater longevity (Koenig, et al., 2001). We conducted a separate analysis to examine the impact of religion/spirituality on reducing mortality risk among persons living with HIV/AIDS in New York City. Deaths of participants were discovered when re-contacting participants for follow-up interviews and were confirmed through searches of NYC DOH death registry. A further search for possible deaths was conducted during March 2001 using the online Social Security Death Index. Mortality rates between 1995 and 2000 were estimated at half-year intervals for the entire CHAIN cohort. We then conducted a survival analysis adjusting for age and CD4 t-cell counts to identify other mortality risk factors. For detailed information on methods for the mortality analysis, see Messeri et al. (2003) and also Messeri and Lee (2000) CHAIN Report #26.

FINDINGS

Indicators of Religion/ Spirituality

- Tables 1 and 2 compare the CHAIN sample with the general American population on a number of indicators of religion/ spirituality. CHAIN participants are less likely to identify with a major Protestant denomination such as Methodist, Baptist, Lutheran, etc., compared to the general American population; 37% and 51% respectively. CHAIN participants (15%) are more likely to describe themselves as having 'no religion' than other Americans (6%) although the percentage is low for both samples.

- CHAIN participants are less likely than other Americans to attend religious or spiritual services; only 29% indicated that they attended weekly or more often compared to 45% of the general population. It is likely that compromised health status and mobility limitation (as well as transportation costs) may affect attendance at services among persons living with HIV/AIDS (Table 2).

- On indicators of personal faith or spirituality, rates among CHAIN participants are comparable or higher than seen among the general United States population (Table 2). Sixty-nine percent (69%) said that religion was very important to them (compared to 62% of other Americans) and 70% indicated that they prayed or meditated daily , considerably higher that rates of daily prayer in the national survey (50%).

Summary Indicators

- When examining the summary measures of religious/ spiritual involvement overtime for the continuing cohort interviewed Wave 5, 6, and 7 (1998 - 2001) we see that almost three fourths (73%) of the cohort consistently report that religious or spirituality is very important to them., almost half (47%) consistently report that they pray or meditate daily. Only about one-quarter report regular attendance at church or other public religious services and the same proportion have maintained membership in a church or other religious organization throughout the three interview periods, 1998- 2001 (Table 3).

Demographic Differences

- Table 3 also presents the individual summary measures of religious involvement by select demographic characteristics. The largest differences were by race/ethnic group. Eighty percent (80%) of African Americans consistently report that religion is very important to them, and they are more likely than other groups to pray or meditate daily (54%). In general, religious commitment as well as religious participation is higher among African Americans living with HIV/AIDS than for respondents from other ethnic groups.

- Consistent with research in other samples, women living with HIV are more likely than men to report that religion or spirituality was very important to them. Eighty-percent (80%) of women said that religion was very important to them compared to 66% of men. Women also had higher rates of participation in organized religious services. Men, however, were no less likely than women to pray or meditate daily nor to be a member of a church or other religious or spiritual organization (Table 3).

- There are no difference on any of the summary religious indicators associated with educational level of CHAIN participants (Table 3).

Risk Exposure Group Differences

- Men who have sex with men (MSM) and MSM who are also problem drug users (MSM/PDU) tend to give lower importance to religion or spirituality than individuals from other risk exposure groups (Table 3). Individuals whose risk is “heterosexual or other” were more likely than others to say consistently that religion was very important to them (82%) and they were somewhat more likely to regularly attend church or religions services. This may suggest that individuals more involved with traditional religion and adherent to religious practices are discouraged from certain behaviors. On the other hand, research has shown that the strong prohibition against homosexuality in certain religions can result in separation from what previously had been meaningful affiliations (Herek, 1999).

Religious /Spiritual Profile

- Using the pattern of answers to all the questions about religious belief and participation, individuals were classified into a single religious "type." One-third (33%) of the sample were classified as high faith/ high participation. They consistently rate religion or spirituality as very important, they pray or meditate every day, they attend services monthly or more often and maintain membership in a church or other religious organization. Another 25% of the sample were classified as high faith/ low participation. They rate religion highly and pray daily but do not attend services regularly or maintain church membership. No information is available regarding their reasons for non-participation in public religious activities. Another 8% of the sample manifest low faith/ high participation; they describe religion as only a little or not important to them and are low on indicators of personal devotion (frequency of prayer or meditation). However they attend church or other services regularly and/ or consistently maintain formal membership. These may be individuals who participate in religious activities more for community involvement, social reasons, or other reasons (e.g. singing in the choir) not related to matters of personal faith. A somewhat surprising category is religion important/ no practice comprised of individuals who consistently report that religion or spirituality is very important to them yet do not pray or meditate nor do they attend services or maintain membership in any church or other religious organization.. It may be that these individuals rate religion highly in the abstract, or are referring to the importance of religion for their personal development, but are currently not personally involved in either the inner or outward dimensions of religiosity. Eighteen percent of the CHAIN sample fit this religious profile. The final 20% of CHAIN study participants are classified as no importance/ no practice which refers to persons who consistently say that religion or spirituality is not important to them, who do not pray or meditate, and do not participate in organized religious activities (data not shown).

Health Outcomes

- We examined the relationship between religious profile as shown by reports of religious belief and participation over three interview periods (Waves 5,6,7 conducted during 1998-2001) to predict health outcomes at the most recent interview (Wave 8 conducted during 2002). There appears to be no consistent relationship between religious profile and either clinical or subjective measures of physical health (Table 4).

- Religious/spiritual profile significantly predicted CD4 count. Individuals who were classified as high in faith and high in participation reported higher levels. The lowest CD4 counts were found among persons who gave no importance to religion and did not participate in any religious activities; 35% had CD4 counts below 200 (Table 4). However, neither viral load nor recent history of opportunistic infection is associated with religious profile.

- There is no statistically significant relationship between religious profile and either a single global measure of current health (health is very good, good, fair poor) or the summary

physical functioning score among CHAIN study participants interviewed 1998-2002 (Table 4).

- Caution should be exercised when interpreting these findings. Our analysis is restricted to long term survivors: only individuals who had survived since 1994 and were sufficiently healthy to be interviewed during the more recent study periods were included in the analysis. The effects of religiosity on health may operate differently for individuals at earlier stages of HIV disease.

Mental Health Outcomes

- Religious profile appears to have more of an effect on mental health than physical health and functioning (Table 5). Persons low on indicators of personal devotion and low on public participation in religious or spiritual activities have the lowest scores on the summary mental health measure. For example, 48% of individuals who answer that religion is "important" but neither pray/ meditate or attend services, and 43% of individuals who consistently describe religion as unimportant to them score below 42.0 on the mental health measure, a level indicating clinically relevant symptoms (Ware et al. 1994).

- A similar pattern was found when looking specifically at specific mental health symptoms. For instance, participants who were classified as both high in faith and religious or spiritual participation were less likely to indicate that they felt down or downhearted. Over half (52%) of this same religious/spiritual type indicate that they felt calm most of the time. (Table 5)

Mortality Risk Reduction

- A separate analysis was conducted to estimate the impact of religious / spiritual involvement on reducing mortality risk . For this analysis, the sample was comprised of CHAIN participants who had completed interviews from Wave 2 through Wave 7 (1995- 2001). The role of religion was estimated using two separate variables: personal faith and devotional practice (religion important, consistently pray or meditate daily) and high religious participation (attendance at services monthly or more often and continuous membership in church or other religious organization) were added to an existing model predicting all cause mortality among the CHAIN cohort (Messeri et al. 2003).

- In the multi variate proportional hazard analysis, among all the variables that were examined, including age, race/ethnicity, and gender, only CD4 count at the interview prior to death, use of HAART combination medication and the measure of religious participation were significant predictors of mortality reduction (Table 6). After adjusting for age, gender, race/ethnicity, CD4 count and use of a HAART combination, there was substantial effect of religious participation on reduced mortality (hazard ratio = 0.63, $p < .05$). The separate measure of personal faith and devotional practice was not associated with reduced mortality risk.

SUMMARY AND RECOMMENDATIONS

Overall, religion or spirituality is very important to the great majority of CHAIN study participants. However fewer self-identify with traditional religious denominations or practice than rates seen among the general American population. This may be due to the strict guidelines regarding sexual and substance use behaviors in many organized religious traditions. In addition, individuals may have been ostracized by their religious institutions after learning about their HIV status and/ or sexual orientation, thereby causing many to leave their churches and label themselves as “spiritual” and engage in private forms of religious practice only. Religiosity and spirituality differed by race/ethnic groups with African-Americans scoring higher on the religiosity and spirituality scales followed by Latinos and then whites. The findings regarding mental health are similar to previous studies examining the protective factor of religion on mental health with different populations. Future investigations should examine how religious and spiritual factors can impact mental health outcomes among persons living with HIV/AIDS.

Despite the findings from previous research religiosity was not consistently related to short term physical health outcomes. However, there was a statistically significant association between religious participation and reduced mortality risk among the CHAIN study cohort. This finding is consistent with prior studies that have shown that religious involvement is related to lower mortality and longer survival. The exact mechanism or processes through which religious participation (but not personal faith and devotional practice) are related to reduced mortality risk is another topic worthy of further investigation.

It should be noted that the operational definition of religion/ spirituality used in this report remains broad and elusive. This points to the need to investigate the reliability and validity of different religious measures. The fact that private religious practices or “spiritual beliefs” were not consistently associated with health outcomes may relate to the complexity in defining spirituality. HIV is a devastating illness that affects all aspects of the biopsychosocial domain including spiritual. As other researchers have noted, more research is needed to document the potential influences spiritual factors have on immune function, health status, disease progression, and quality of life among persons with HIV/AIDS (Tuck, et al., 2001; Koenig, et al., 2001). We do caution the readers that findings for the CHAIN cohort of individuals are only broadly representative of the larger population of HIV positive residents of New York City. Only careful measurement of religion and spirituality can untangle the complexity of examining the effects in relation to quality of life, health, and mental health outcomes. The results do tell us that as individuals progress with living with HIV/AIDS they continue to have strong religious and spiritual beliefs. Spirituality should be considered among other factors affecting outcomes for people that are HIV positive.

TABLE 1 RELIGIONS PREFERENCE

	CHAIN Sample	US Population[1]
CHRISTIAN		
Protestant Denomination[2]	37%	51%
Catholic	31%	28%
Non-denominational Christian	4%	3%
Jehovah Witness	2%	<1%
Pentecostal	2%	3%
NON-CHRISTIAN		
Muslim	6%	<1%
Jewish	1%	2%
Buddhist	1%	<1%
Hindu	<1%	<1%
PERSONAL		
Personal beliefs, philosophy	1%	2%
NONE		
No religion, no beliefs	15%	6%

1. The Gallup Poll 1995.
2. Mainstream denominations : Methodist, Baptist, Lutheran, Presbyterian, Church of God, etc.

CHAIN Baseline cohort, 1995 (n= 698)

TABLE 2 RELIGION/ SPIRITUALITY: BELIEF AND PARTICIPATION

	CHAIN Sample	US Population[1]
IMPORTANCE OF RELIGION/ SPIRITUALITY		
Very important	69%	62%
Somewhat important[2]	20%	25%
Not important	7%	13%
BELIEF IN GOD OR HIGHER POWER		
Yes	98%	92%
PRAY OR MEDITATE		
Daily	70%	50%
Weekly	17%	na
Less than weekly	6%	na
Never	7%	na
ATTEND RELIGIOUS/ SPIRITUAL SERVICES		
Weekly or more often	29%	45%
About monthly	11%	19%
Less than monthly	30%	26%
Never	30%	9%
MEMBER OF RELIGIOUS ORGANIZATION		
Member of church, synagogue or mosque	36%	70%

1. The Gallup Poll 1998
2. CHAIN, “somewhat” or “slightly” important; Gallup pool, “fairly important”.

CHAIN Study, Wave5 1998 (n= 652)

Table 3. INDICATORS OF RELIGIOSITY BY CLIENT CHARACTERISTICS

	n	Religion/ Spirituality Highly Salient[1]	Personal Prayer or Meditation Daily[2]	Regular Attendance at Services[3]	Consistent Membership[4]
Total Sample	(382)	73%	47%	25%	24%
GENDER					
Male	(196)	66% **	48%	21% *	22%
Female	(186)	80%	46%	30%	27%
RACE/ETHNICITY					
White	(46)	57% ***	37% **	20%	22% *
Black	(230)	80%	54%	28%	29%
Latino	(106)	63%	37%	22%	16%
RISK CATEGORY					
MSM	(71)	62% *	42%	23%	25% *
PDU	(155)	72%	47%	25%	16%
MSM + PDU	(32)	66%	59%	16%	31%
Hetero + Other	(124)	82%	47%	31%	32%
EDUCATION					
Less than HS	(182)	71%	47%	24%	22%
More than HS	(200)	75%	48%	27%	27%

Note: Based on continuing cohort interviewed at all three time periods: W5, W6, and W7 (1998-2001).

1. Answers that religion or spirituality is “Highly Important” in all three interviews
2. Reports that prays or meditates at least daily in all three interviews.
3. Reports attendance at church or other religious/ spiritual services at least monthly at all three interviews.
4. Reports membership in a church, synagogue, mosque or other religious organization at all three interviews.

* $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$

TABLE 4. HEALTH STATUS BY RELIGIOUS / SPIRITUAL PROFILE

	High Faith, High Participation	High Faith, Low Participation	Low Faith High Participation	Religion "Important" No practice	No Importance No Practice
Total Sample (n)	(123)	(75)	(29)	(67)	(74)
CD4+ COUNT *					
500+	41%	40%	38%	37%	24%
200-500	45%	49%	45%	39%	41%
<200	15%	11%	17%	24%	35%
VIRAL LOAD					
10000+/bad	17%	13%	17%	15%	17%
99999-400	26%	29%	41%	32%	45%
400</good	57%	57%	41%	52%	38%
OPPORTUNISTIC INFECTION					
Infection past 6 months	29%	32%	31%	45%	38%
No infection	71%	68%	69%	55%	62%
GENERAL HEALTH					
Excellent or Very Good	38%	29%	38%	25%	35%
Good	29%	49%	31%	36%	30%
Fair or Poor	33%	21%	31%	39%	35%
PHYSICAL HEALTH FUNCTIONING[1]					
PCS Summary Score mean (sd)	43.47 (12.4)	41.63(12.7)	41.85(11.9)	45.82(13.7)	42.95(12.7)
Low PCS score (PCS <45.0)	50%	56%	35%	61%	52%

Note: Based on continuing cohort interviewed at all four time periods: W5, W6, W7, W8 (1998-2002).

[1]MOS SF-36 Physical Component Summary Score. Scores below 45.0 are associated with physical limitations sufficient to impair regular employment

* $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$

Table 5 MENTAL HEALTH OUTCOMES BY RELIGIOUS/ SPIRITUAL PROFILE

	High Faith, High Participation	High Faith, Low Participation	Low Faith High Participation	Religion "Important" No practice	No Importance No Practice
Total Sample (n)	(123)	(75)	(29)	(67)	(74)
MENTAL HEALTH FUNCTIONING[1]					
*MCS Summary Score** mean (sd)*	47.27 (12.2)	49.19 (11.5)	42.54(12.3)	47.04 (10.6)	44.51 (11.7)
*Low MCS score (<42.0)**	34%	23%	48%	31%	43%
MENTAL HEALTH SYMPTOMS[2]					
NERVOUS PERSON *					
All or Most of the Time	10%	16%	26%	6%	29%
Sometime	46%	43%	52%	65%	37%
None of the Time	44%	41%	21%	29%	35%
FELT CALM *					
All or Most of the Time	52%	46%	21%	41%	29%
Sometime	44%	52%	67%	41%	53%
None of the Time	4%	2%	12%	18%	18%
FELT DOWN					
All or Most of the Time	6%	9%	14%	12%	12%
Sometime	42%	43%	48%	59%	55%
None of the Time	52%	48%	38%	29%	33%
FELT DOWNHEARTED					
All or Most of the Time	11%	7%	19%	12%	8%
Sometime	56%	43%	57%	71%	70%
None of the Time	33%	50%	24%	18%	22%

Note: Based on continuing cohort interviewed at all four time periods: W5, W6, W7, W8 (1998-2002).

[1]MOS SF-36 Mental Component Summary Score mean. Scores below 42.0 indicate clinically relevant symptoms.
[2]Mental Health symptoms taken from the MOS SF-36

* $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$

Table 6: Proportional Hazard Analysis of Mortality Risk

	Hazard Ratios	95% CI
Age	1.01	(0.99, 1.03)
Race/Ethnicity		
African American	1.15	(0.73, 1.80)
Hispanic	0.85	(0.53, 1.40)
Whites	1.00	
Sex		
Male	1.04	(0.74, 1.50)
Female	1.00	
CD4 Count at baseline interview	0.85*	(0.72, 0.99)
CD4 Count at prior interview	0.74**	(0.63, 0.88)
Current use of combination therapies		
HAART combinations	0.41**	(0.26, 0.63)
Non-HAART combinations	0.73	(0.48, 1.10)
None	1.00	
PCP prophylaxis & CD4 <200 last 6 months	1.32	(0.88, 1.98)
Participation in religious/ spiritual organization	0.63*	(0.39, 0.99)
Personal faith and devotional practice	1.10	(0.78, 1.55)

Note: Sample is restricted to Waves2 through Waves 5 (n=577)

*p<.05 ** p<.01

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