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## STRESS, COPING, AND DEPRESSIVE SYMPTOMATOLOGY IN LATINA AND ANGLO AIDS CAREGIVERS

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In a survey of 432 AIDS caregivers, we examined differences in the stress and coping process and predictors of depressive symptomatology by ethnicity and gender. Our sample included 192 Anglo gay and bisexual male partners, 86 Anglo women, and 154 Latina family caregivers. We examined differences in primary and secondary stressors as predictors of depression; differences in sociodemographic and background factors, and differences in the predictive value and mediating influences of factors that may attenuate the relationship between stress and depression. Results indicate substantial differences in predictors and mediators of depression across groups. While all groups evidenced moderate levels of depression, background factors influenced depression mostly for Latinas. Depression in gay and bisexual partners was more influenced by primary objective stressors such as assisting with activities of daily living (ADLs). Service acquisition appears to be shaped by access, knowledge, and cultural acceptance. Based on our findings, we suggest that service provision for caregivers must also vary and be attuned to cultural and gender differences that may influence perception of stress and depression for caregivers.

*Keywords:* Caregivers; Depression; Latino; Men/Women; HIV/AIDS; Stress

### INTRODUCTION

AIDS has increasingly become a chronic health problem; and as its chronicity continues, the importance of informal systems of care becomes commensurately greater (Benjamin, 1988; Jonsen and Stryker, 1993). The second decade of AIDS has ushered in a number of changes. The advent of highly active antiretroviral therapy (HAART) has extended the lives of many and is one of the principal factors responsible for moving AIDS from an acute to a chronic illness, an illness that may require vigilant and ongoing home care (Reynolds and Albonza, 1998). Caring for a chronically ill loved one is often an emotionally intense and physically demanding experience, one that is

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characterized by persistent, stressful demands. Over time, caregiver stress and strain accelerate while physical and mental well-being are heavily taxed. Often, depressive symptoms result (LeBlanc *et al.*, 1995). However, people caught up in difficult circumstances do not necessarily go through the same stress process (Crystal, 1991; Rait, 1991), and people react differently to the role of AIDS caregiving.

People infected and affected by AIDS now represent a highly diverse community. Study results document cross-cultural and gender role differences in the range of caregiving responsibilities people are willing to assume and the degree of burden they perceive (Horowitz and Reinhard, 1995). In addition, response differences arise because as caregivers are exposed to different constellations of stress and strain, they differentially mobilize personal, social, and coping resources. Further, they differ in access to and use of service resources. Given all these factors, it is not surprising that AIDS caregivers differ in their manifestations of stress such as illness and depression (Kileen, 1990; Pearlin *et al.*, 1997; Nickens, 1995).

Investigations of caregiving for a chronically ill loved one have appeared in literature over the past twenty years, yet relatively few studies have investigated the lives of AIDS caregivers. Those published recently suggest that AIDS caregivers suffer a great deal of emotional distress as providers of informal care (Folkman *et al.*, 1994; LeBlanc *et al.*, 1997). As the AIDS epidemic continues, it is important to learn how the increasingly lengthy and complicated process of providing care for a loved one with this disease differentially affects the lives of AIDS caregivers; thus, supportive service programs designed to alleviate stress in caregiving may be better informed. Such research is especially important as AIDS spreads to culturally diverse groups of people with varying perceptions of need and levels of support. Subsequently, the important services that caregivers provide will be sustained, and the lives of people living with AIDS may be enhanced.

### ***Study Goals***

This study investigated the stress process and its relationship to depression in three culturally different groups of AIDS caregivers: Anglo gay and bisexual, male partners, Anglo female caregivers providing family care, and women of Latina American descent who were family caregivers. Our goals were: (1) to examine demographic and sample characteristics of caregivers as they relate to the stress process and depression; (2) to examine group differences in the stress process; and (3) to examine group differences in the predictive value and mediating influences of social support, coping methods, self-esteem and service use on depression.

### **Women, Caregiving, Stress, and Depression**

Today, women assume AIDS caregiving roles more frequently than men, while simultaneously providing care for other family members (Wight *et al.*, 1998). Despite the increasing number of women now in the labor force, women are still expected to fulfill their responsibilities at home; hence, the role of family caregiving is assumed in addition to ongoing family and nonfamily obligations, producing the very real possibility of role overload, role strain, and consequent psychological distress (Moen, 1992). Findings repeatedly demonstrate that such scenarios have detrimental effect on the well-being of female caregivers (Bor and Elford, 1994; Moen *et al.*, 1995; Land and Hudson,

2002). In fact, women are more likely to experience economic difficulties and physical and emotional strain, and to receive less assistance with caregiving tasks than their male counterparts. Despite their more frequent use of a variety of coping styles and their capacity to effectively mobilize social support systems, female caregivers often report higher levels of stress and role strain, as well as physical and depressive symptomatology, than male caregivers (Dew and Bromet, 1991). Compounding this situation, women often assume the dual role of caregiver and patient. Because of these conditions, female AIDS caregivers are at considerable risk for stress and threats to physical and mental well-being, particularly symptoms of depression.

### **Latina AIDS Caregivers**

Latina AIDS caregivers constitute a growing, vulnerable group of women at risk for stress and its psychological sequelae, particularly depressive symptomatology. These women bring to their caregiving roles histories, cultural values, ties to the surrounding community, and behaviors associated with psychological and health risks that are different from those of their Anglo counterparts. It is essential to examine such differences in light of the continued rise in HIV/AIDS rates among women and men of Latin origin, many of whom are foreign born (Los Angeles County Department of Health Services, 2001). For a number of reasons, Latinas confront hurdles that render them at particular risk for stress and depression (Levine, personal communication, November, 1997).

### **Health Status**

Caregivers own health status may influence the stress process. For example, many of these caregivers are undocumented, unacculturated, of low socioeconomic status, and lack medical insurance; hence, they lack knowledge about methods of accessing medical treatment. Others who do gain access to medication are prone to experience difficulty in understanding and employing the complex medication regimes required for combination therapies. In addition, resultant side effects of HAART coupled with overwhelming life demands of Latina AIDS caregivers culminate in less capability for caregiving and meeting other family responsibilities (Land and Hudson, 2001). Often, these women are also providing care for AIDS infected children, husbands, as well as for other extended family members such as aging parents. Particularly in Latin cultures, caregiving falls to these women because of strong cultural expectations for them to assume caregiving roles, especially in the more recent immigrants (Lockerly, 1991; Mitzer, 1992).

Because of these factors, caregivers themselves may present with accelerated AIDS disease manifestations as they attend to infected relatives who require more extensive care (Medrano and Klopman, 1992). In fact, The Hispanic cultural value of *simpatía* may encourage caregivers to sacrifice and put others before themselves, thereby delaying help seeking (Marin, 1990). Further, Latinas are often reluctant to seek help or obtain early care for their own illness for fear of burdening their families, and because of disease stigma to the family. Hence, their needs are identified later in the course of the illness. Due to substantial misinformation concerning HIV, the tendency to underestimate personal risk, and sociocultural and religious sanctioning against the use of

condoms, they are at a high risk for contracting HIV (Marin, 1989; Kalichman *et al.*, 1992; Rosen and Black, 1992).

### ***Latinas and Depression***

For a number of similar reasons Latina caregivers are at significant psychological risk for depressive symptomatology. In the Latin community, female AIDS caregivers constitute the backbone of family attendant care thus exhausting their physical and emotional supplies. Concomitantly, they are coping with the stress of acculturation and they are isolated because of the stigma associated with AIDS in Latinos communities. Remediation for depression may be difficult for a number of reasons. They often reside in poverty ridden communities where health, mental health and social services are limited for monolingual Spanish-speaking people and where they are under represented in health care planning. Many are not knowledgeable about the scant AIDS services that do exist and such services may not be culturally-sensitive to the needs of Latinos. Further, service use may be low because the family may view outside resources as being unnecessary (Hu and Snowden, 1992). The multiple demands of AIDS caregiving coupled with limited resources often results in stress and role strain that predictably push the boundaries of human physical and emotional capabilities. Particular concerns exists because of the negative effects of such chronic stress and its psychosocial risk factors on the immune system (Kiecolt-Glaser and Glaser, 1995). It is not surprising that such a scenario results in high rates of depression among Latina caregivers (Gibson, 1983; Land, 1994; Rivera *et al.*, 1997; Land and Hudson, 2001).

### **Gay and Bisexual Partners and AIDS Caregiving**

Women are not alone in the degree of emotional distress and depression they manifest as providers of care (Folkman *et al.*, 1994; LeBlanc *et al.*, 1997; Pearlin *et al.*, 1997; Turner and Catania, 1997). In fact, gay and bisexual men caring for someone with AIDS are also at risk for a number of reasons. Studies typically point to the objective and subjective caregiving burden as an important causal factor in caregiver depression among gay and bisexual men (Wright *et al.*, 1993). Importantly, the burdens of AIDS caregiving for gay and bisexual men are situated in an adverse social climate surrounding the epidemic. Several dimensions add to the caregiver stress equation that are unique to gay and bisexual AIDS caregivers; such factors may predispose them to depression (Pearlin *et al.*, 1994, 1997; Turner *et al.*, 1995). First, AIDS is prevalent in young and middle-aged gay and bisexual men. Caregiving for a chronic illness in same age peers is likely to be "off time," without anticipatory preparation, and particularly traumatic (Folkman *et al.*, 1994). Second, the stigmatizing nature of AIDS and fear of contagion often reduces the much needed support from families (Raveis and Siegal, 1991; Folkman *et al.*, 1994). These conditions result in a kind of ghettoizing of the caregiving experience for gay AIDS caregivers, especially when the caregiver is the partner of the person with AIDS (PWA). Third and relatedly, in contrast to other caregiver groups, the status of gay male caregivers to their partners and friends is informal, and often societally stigmatized (Herek, 1990). Caregiving without societal or legal sanction may be especially stressful and leave caregivers at increased risk for depression. Fourth, because caregiving is typically viewed as part of the female role, lack of role models may result in feelings of inadequacy or inefficacy (Folkman *et al.*,

1994). Fifth, the pronounced vulnerability of the gay caregiver to either the threat of becoming infected or, for seropositive caregivers, their own disease progression creates additional risk for depression (LeBlanc *et al.*, 1997; Siegel *et al.*, 1997). Such stress and resultant depression reduces one's capacity to harness personal resources that buffer the stress process (Whitsett and Land, 1992; Pearlin *et al.*, 1994; Nannis *et al.*, 1997). The cumulative effect of these conditions suggests that twenty years after AIDS was recognized, there remains cause for concern as gay and bisexual AIDS caregivers face situational stress that in many respects is distinct from that experienced by other caregiver groups (Folkman, 1997).

### Caregiver Stress–Health Model

The purpose of this study was to examine caregiver stress and the contribution of mediating factors on depression for three AIDS caregiver groups. Our investigation builds on the stress proliferation model elaborated by Pearlin (Pearlin, 1989, 1992; Pearlin *et al.*, 1997). The paradigm depicts the stress of caregiving as a process that is comprised of a number of interrelated conditions. The first component includes background factors such as the caregiver's sociodemographic characteristics and health. Published data indicate that caregiver sociodemographic characteristics can have a profound impact on the number and magnitude of stressors experienced (Pearlin *et al.*, 1997). The effect of such variables as ethnicity, age, gender, and socioeconomic status are likely to be threaded throughout the distress process. Moreover, caregiver health, another background factor, has been found to be one of the few significant predictors of psychological distress in caregivers in a number of studies (Folkman *et al.*, 1994; Clair *et al.*, 1995; Zanetti *et al.*, 1998; LeBlanc *et al.*, 1997; Land and Hudson, 2001). Because many gay and bisexual caregivers are themselves infected with HIV, health may be impaired, thereby depleting both strength and energy that are needed for caregiving. In turn, the psychological resources that help sustain the caregiver's mental health are depleted.

The second component of the model is organized around the distinction between primary and secondary stressors. Primary stressors include those hardships and problems anchored directly in caregiving as well as the felt role strain and overload due to caregiving. These stressors are objective in that they reflect the nature of the caregiving situation, such as the degree to which the PWA routinely requires assistance with the activities of daily living (ADLs). Persons with AIDS with significant physical and cognitive impairments who rely on the caregiver to assist in the activities of daily living can pose a potentially significant daily stressor for the caregiver (Pearlin *et al.*, 1990). As the imbalance increases in the exchange, with more patient dependency on the caregiver, the sense of caregiver burden increases, as does the level of caregiver depressive symptomatology (Litvin, 1992; Clair *et al.*, 1995).

Investigations of AIDS caregivers also reveal that role overload, role captivity and loss of self-identity to the caregiver role are particularly important predictors of depression (Skaff and Pearlin, 1992; LeBlanc *et al.*, 1995; Pearlin *et al.*, 1997; Land and Hudson, 2002). These readings of stress rooted in caregiving are considered to be more subjective in that they are based on how caregivers appraise what they do. Role overload refers to feelings of high demand associated with multiple and competing roles. Such demand often results in caregiver fatigue, in being drained of stamina, and in having more to do than one is able to handle in caregiving (Pearlin *et al.*, 1997).

Role captivity refers to feelings of being trapped in the role of caregiver, and feeling like an involuntary incumbent of that role. Such loss of freedom is cited as an important predictor of depressive symptomatology (Skaff and Pearlin, 1992). In particular, more difficult caregiving circumstances for AIDS caregivers have been associated with greater feelings of loss of self-identity, role captivity, and overload, and in turn, higher levels of depression.

The third component of the stress proliferation process includes secondary stressors that evolve from caregiving but may be experienced outside the caregiving role. Caregiving demands may create or exacerbate stress in other areas of the caregiver's life. These secondary stressors may involve both internal strains such as worries about one's own health status, and external conditions such financial worries. Such stressors have been found to be strong predictors of depression in HIV-positive gay and bisexual men (Thompson *et al.*, 1996). In fact, investigations have found that as assistance with activities of daily living increase, financial and temporal burdens mount, and psychological health may suffer (Zarit *et al.*, 1986; Gatz and Emery, 1990; Schulz *et al.*, 1990). Both primary and secondary stressors may result in negative outcomes in mental and physical well-being for caregivers (Pearlin *et al.*, 1997).

The fourth component of the model, psychological resources and external supports, may act as mediators of the stress process and may help explain why individuals negotiating difficult yet similar stressful conditions do not necessarily go through the same stress process (Crystal, 1991; Hansell *et al.*, 1998). For example, some studies have found that culture influences the appraisal of stressful events, the perception and use of resources such as social support and coping behaviors (Horowitz and Reinhard, 1995; Aranda and Knight, 1997). In addition, findings reveal variation in the range of caregiving responsibilities people are willing to assume and the kind of support they reach out for or actually receive (Pearlin *et al.*, 1997). Response differences may arise because caregivers are exposed to different constellations of stress and strain or because caregivers differ in their personal resources, such as self-esteem, mastery, coping efforts, and in their capacity to mobilize other resources such as social support or supportive services (Turner and Catania, 1997).

The final component of the stress process refers to the outcomes that are the consequences of stressors. We chose depressive symptomatology as the outcome variable as the insidious effects of depression are well known in the investigations of caregiving. Depression may diminish the caregiver's capacity to harness personal resources that buffer the stress process (Smith *et al.*, 1991; Nannis *et al.*, 1997). Depression may affect caregiver motivation, health, and diminish the capacity to provide care. Importantly, the effects of depression on the immune system have been well documented (Kiecolt-Glaser and Glaser, 1995).

Clearly differences in background factors and in primary and secondary stressors affect capacity to make use of stress mediating factors. These reasons may account for differences in why certain people fare better as HIV caregivers (Pearlin *et al.*, 1997). Still, to date, little is known of how AIDS caregivers from culturally distinct backgrounds fair with the inevitable stress of caregiving. Moreover, our understanding of how caregiver sociodemographic and background characteristics are associated with common mental health outcomes such as depression is quite limited. For these reasons, we undertook an investigation on AIDS caregiving and the stress process across culturally distinct caregiver groups.

## METHODS

### Participants

The data presented come from two studies of AIDS caregiving. The first is a five-wave panel survey of the stress and coping process of 642 informal AIDS caregivers (Pearlin, 1990–1996). We report data on two subsamples from wave one: 85 Anglo women and 192 gay and bisexual male partners. Approximately two-thirds of our sample was recruited from Los Angeles County and one-third from the San Francisco Bay area. The second study is a cross-sectional purposive sample of 154 Latina AIDS caregivers recruited in the Los Angeles (Land, 1995–1996). In both studies, the data were collected from face-to-face interviews by trained interviewers using structured interview schedules. Those interviewing Latina caregivers were bicultural and bilingual. Criteria for inclusion were employed in telephone screening of potential respondents. Our inclusion criteria required that care be provided in the community outside of hospitals, hospices or other institutional settings. Second, care could not be given in conjunction with employment as a health care worker. Third, caregiving assistance had to extend beyond offering emotional support; rather, it had to include activities encompassing instrumental care such as provision of help with activities of daily living. Fourth, the potential respondent had to be the primary caregiver of the person with AIDS.

Several methods were used to recruit respondents including provider referrals, newspaper advertisements, radio, and other media, flyers, and word-of-mouth. Overall, participants were recruited primarily and about nearly equally through media advertisements and AIDS service organizations. Interviews lasted approximately 90 min and were administered in a setting agreed upon by the respondent; most took place in the home of the caregiver. Respondents were reimbursed \$25.00 for each interview.

### Measures

Instruments employed in this investigation include, in the majority, those developed by and based on Pearlin's model (Pearlin *et al.*, 1990). These measures were first created from qualitative interviews with caregivers, then Likert scales were composed. They have been tested and updated with qualitative interviews over time in a number of empirical studies on various caregiver groups, and revised accordingly (Aneshensel *et al.*, 1995; Turner and Catania, 1997; Wailing *et al.*, 1999; Wight and Aneshensel, 2000; Land and Hudson, 2002). Over time, these scales have well-documented internal consistency and test–retest reliability, and noted content and face validity. Scale scores have been shown to correlate across caregiver studies and appear to be replicable (LeBlanc *et al.*, 1995, 1997; Wight and Seltzer 2000). In addition, scales have been found to correlate with similar caregiving instruments (Wailing and Aneshensel, 2000). Scale means and standard deviations for each caregiver group are given in Table II.

### Translation

Because we anticipated that many Latina caregivers would be monolingual Spanish speakers; accordingly, we used English and Spanish language versions of the questionnaire in this study. Our aim was to achieve semantic equivalence as well

as idiomatic and conceptual equivalence (see Land and Hudson, 1997 for a complete methodological review of procedures). The English language version was translated into Spanish, and then back-translated by an independent, bilingual, bicultural graduate student of Mexican descent. The back-translator was blind to the original English version of the instrument. Although the original English questionnaire and the back-translated version were highly comparable, a few subtle discrepancies were found. These differences were discussed with our bilingual, bicultural research team and addressed by forming a consensus translation. The following measures were included in both Spanish and English versions following pilot testing.

### **Demographic and Sample Characteristics**

We included questions on the respondents' income, employment status, educational level, age, and marital status (and for Latinas, language preference and country of origin). In addition, we queried respondents on factors of relationship to the person with AIDS and their length of caregiving time. Further, questions were administered on the respondents' health insurance coverage, their HIV serostatus, and their overall health status. This measure is a 10-item index that asks respondents whether they have had chronic illnesses in the past year such as asthma, high blood pressure, diabetes, and heart disease. Scores may range from 0 to exceeding 10 if other conditions were listed by the respondent. Last, we included an 8 item inventory of stressful life events with particular attention to exit events. The respondent is asked to endorse those items which occurred over the past six months. Sample items include, "a close friend moved away," and "You broke up with or divorced a loved one." Possible scores range from 0 (no events) to exceeding the 8 events included on the scale as respondents were queried about the occurrence of other events that stood out in their memory and were not noted on the scale. This scale has been used in a number of caregiver studies conducted by Pearlin and colleagues (Pearlin *et al.*, 1990, 1997).

### **Primary and Secondary Stressors**

Our analysis of predictors of mental well-being is organized around the distinction between primary and secondary stressors in caregiving (Pearlin *et al.*, 1990). We included six indicators of primary stressors, all of which use a four-point response continuum ranging from 1 (strongly disagree) to 4 (strongly agree) and have been validated in other studies of the stress process (Pearlin *et al.*, 1990, 1997; Aneshensel *et al.*, 1995; LeBlanc *et al.*, 1995). Three indicators of primary stress are objective measures in that they directly reflect the nature of the caregiving situation. Our three other measures of primary stress are subjective indicators of the stress process. These scales have been validated by Pearlin and colleagues (Pearlin *et al.*, 1990, 1997; Aneshensel, 1995).

The first indicator measures the degree to which the PWA routinely requires assistance with activities of daily living (ADLs). This summative scale was built from responses to 16 survey items that reflect the extent to which the caregiver assisted with such tasks as bathing, toileting, and managing external affairs (Pearlin, 1990). Possible scores range from 16 (no assistance given) to 64 (assistance needed in all activities). Higher scores indicate greater levels of assistance provided by the caregiver ( $\alpha \geq 0.80$  for all groups). The second measure of primary stress is an 18-item summative index addressing the extent to which the caregiver is involved in the control and

surveillance of problem behaviors commonly observed at advanced stages of AIDS, including potentially dangerous acts, agitation and anger, and disruption of sleep ( $\alpha \geq 0.83$  for all groups). Scores may range from 0 (dealt with behavior no days) to 72 (dealt with behavior 5 days or more on each problem behavior). The third indicator of primary stress is a scale comprising nine items tapping the cognitive status of the PWA, which can also decline with the progression of AIDS and have a serious adverse effect on the ease of communications and exchange. Items comprising this summed index inquire into such cognitive capacities as remembering recent events, following a conversation, and recognizing people that he/she knows ( $\alpha \geq 0.85$  for all groups). Scores may range from 0 (not at all difficult) to 40 (can't do at all). Thus, in Pearlin's model (1997), the first three scales are essentially indirect measures of primary stress in that the level of caregiving activities (necessitated by the dependencies and problems of the PWA) serve as proxies of measures of intensity of stressors.

Three subjective measures assessed how caregivers experience and appraise what they do: role overload, role captivity, and feelings of loss of self-identity to the caregiver role. All three of Pearlin's subjective stress measures are based on a four-point response continuum ranging from 1 (strongly disagree) to 4 (strongly agree). Our indicator of role overload is a four-item scale asking the extent to which the effort devoted to caregiving drains the energies and stamina of the caregiver. Specifically, this index inquires about the degree to which the caregiver has more to do than she can handle, never is able to finish what needs to be done, does not have enough time for herself, and is exhausted at bedtime ( $\alpha \geq 0.80$ ). Scores may range from 4 to 16. Role captivity is a three-item index measuring the sense of being captive in the caregiver role. This scale asks how strongly respondents wish they were free to lead a life of their own, feel trapped by the PWA's illness, and wish they could just run away ( $\alpha \geq 0.78$  for all groups). Scores range from 3 to 12. The loss of self measure is a 4-item index and is based on caregivers' assessment of the extent to which they feel they are losing a sense of who they are, feel they are losing an important part of themselves, find it hard to think of themselves as anything but a caregiver, and feel that the PWA seems like a stranger when they are together ( $\alpha = 0.80$  for all groups). Scores range from 4 to 16.

One summative indicator of secondary stressors was selected for this study, worries about one's future health status. This scale is a 4-item index that asks caregivers if they wonder when they not feeling well, if it could be a symptom of HIV infection, if they think about getting sick themselves, if they wonder who would take care of them when they are sick, and if they feel that they do not know enough about HIV to protect themselves ( $\alpha \geq 0.62$  for all groups). Scores may range from 4 to 16.

## Mediators

Our conceptual model is based on the assumption that the well-being of caregivers may differ because of potential mediating influences on the stress process, such as self-esteem, mastery, coping, and service utilization (Pearlin *et al.*, 1997). Here we analyze the predictive value of these variables on depression. Self-esteem was measured with the Rosenberg's (1965) Self-esteem Scale. This index has a long history of use with a variety of populations including caregivers, and has established construct validity and high internal consistency documented in the literature (see Blaskovich *et al.*, 1991 for a review). The ten-item summative index employs a four-point response continuum ranging from 1 (strongly disagree) to 4 (strongly agree), and asks questions such as the

extent to which respondents feel that they have a number of good qualities, on the whole are satisfied with themselves, feel that they are a person of worth, and are on an equal plane with others ( $\alpha \geq 0.71$ ). The mastery scale is a five-item index based on the extent to which caregivers report that there is no way they can solve some of the problems they have, that they feel pushed around in life, have little control over things that happen to them, often feel helpless in dealing with the problems in life, and feel that there is little they can do to change many of the important things in their life ( $\alpha \geq 0.75$ ). Scores may range from 5 to 20. Our coping scale has been used in a number of studies and has established factorial invariance across caregiver groups (Land and Long, 2000). This index has a long history of use with varying groups and addresses the ways caregivers manage the vicissitudes of caregiving (see for example Pearlin and Schooler, 1978; Pearlin and Aneshensel, 1986; Pearlin, 1991). Specifically, caregivers were queried as to how often they employ various coping efforts in order to negotiate the caregiving experience. Four coping questions address strategies for direct management of the situation, such as trying to learn as much as they can about the illness, and being firm in directing the PWA's behavior. Thirteen coping items center on the management of meaning of the situation in order to reduce its threat, such as focusing on the positive things in life, thinking about the present rather than the future, trying to make sense of the illness, and looking for things they always liked or admired in the PWA. Fifteen coping items address potential methods of management of distress, such as watching TV, turning to work or other activities, or seeking God's help. The summative index employs a four-point continuum ranging from 1 (never used) to 4 (used very often) ( $\alpha \geq 0.77$ ). Possible scores range from 32 to 128. Our caregivers services measure is a summative scale composed of four questions that asked if the caregiver has used such services as a support group, individual therapy, group therapy, alcohol or drug counseling, or a phone information line. The response continuum ranges from 1 (never used) to 4 (used 4 times or more over the past month) ( $\alpha \geq 0.88$ ). Possible scores range from 5 to 20.

### **Depression**

To measure depression for the Latina caregivers we chose the Depression subscale of the Brief Symptom Inventory (BSI). The BSI, developed by Derogatis, has well-documented convergent, discriminant, and construct validity with a variety of ethnic groups including Latinos (Derogatis, 1982; Derogatis, 1992; Acosta *et al.*, 1994). This scale evidences strong test-retest reliability, and demonstrated high internal consistency in this Latina sample ( $\alpha = 0.91$ ). It has been normed on a variety of populations and has established cut-off scores for clinical "caseness" for in-patient, outpatient, and community samples. In this 53 item summative index, respondents endorse the extent to which they experienced depressive symptoms over the previous 7 days including items such as feeling lonely, blue, and having no interest in things. For each of these six questions, there is a five-point response continuum ranging from 0 (not at all) to 4 (extremely). Possible scores range from 0 to 30.

An earlier iteration of this scale, the Depression subscale of the Hopkins checklist (Derogatis *et al.*, 1974), was employed in the larger study from which female Anglo and gay and bisexual male caregiver samples were drawn. The scale has established score means on community samples and was also developed by Derogatis and colleagues (1974). Investigations of depression in various groups report high internal

consistency over time and test–retest reliability (Dwyer and Fox, 2000). This summative six-item scale has similar content to the BSI depression subscale, and asks respondents such questions as how often in the past week they felt downhearted or blue, felt like crying, or lacked enthusiasm for anything. The Hopkins Depression subscale is based a four-point response continuum ranging from 1 (no days) to 4 (five or more days per week) ( $\alpha = 0.83$  for both groups). Possible scores range from 6 to 24 with higher scores indicating higher levels of depression. Because the two depression scales used were scored using different metrics and different response categories, mean comparisons between Latinas and the other two groups cannot be made. However, because the BSI is a refinement of the Hopkins Checklist and represents the same dimensions of depression, they are equally compatible (Derogatis and Spencer, 1982); hence, comparisons of the stress process and predictors of depression can be made across groups using these scales.

## RESULTS

### Demographic and Sample Characteristics

We conducted Analysis of Variances tests, which included Duncan's Multiple Range test values, to examine if there were significant differences in background variables across caregiver groups. The Duncan's Multiple range test indicates whether one group differs significantly from the other two, or whether all three groups differ significantly from each other. As can be seen in Table I, both similarities and differences were found in demographic variables. The two Anglo groups tended to be more similar to each other than to the Latinas. Anglo females were somewhat older than the gay and bisexual males (47.4 *versus* 39.5 years) and Latinas (37.2 years,  $p < 0.05$ ). Both Anglo groups were well educated, with over 80% reporting education beyond high school. Despite their similar educational status to the gay and bisexual male partners, the Anglo women reported lower income, with more Anglo women than gay and bisexual men falling into low-income categories. Of note, far fewer Anglo women reported a positive HIV serostatus, although these two groups reported similar levels of other chronic illnesses and physical symptomatology such as headaches and fevers. While perhaps in greater need of medical care due to much higher rates of seropositivity, the gay and bisexual males were significantly less likely than the Anglo women to have medical insurance (78 *versus* 90%,  $p < 0.05$ ). Both of these groups had been caring for a loved one for close to two years on average, and they reported similar experiences of other major life events and losses.

Relative to the Anglo groups, striking differences are apparent in the Latina caregivers. The data reflect a group largely composed of immigrant women, mostly of Mexican descent who are younger, and primarily of low socioeconomic status. Most are monolingual Spanish speaking; a full 71% chose to be interviewed in Spanish. Only 16% were high school graduates and nearly half (44%) had completed only eight years or less of formal education. Far fewer were employed than their Anglo cohorts, and half of the sample reported an annual income of less than \$4000. Although more than a third of the Latinas described themselves as HIV-positive, only half reported having any kind of health insurance, including Medicare or Medi-Cal (California's version of Medicaid). The Latinas reported experiencing

TABLE I Differences<sup>a</sup> in demographic and background variables

| Measure <sup>b</sup>                                | Gay men<br>(n = 192) | Anglo women<br>(n = 86) | Latinas<br>(n = 154) |
|---|----------------------|-------------------------|----------------------|
| Age (years)   | 39.5 (B)             | 47.4 (A)                | 37.2 (B)             |
| Education ( $\chi^2(10) = 269.395, p < 0.001$ )     |                      |                         |                      |
| 8th Grade or less                                   | 0%                   | 1%                      | 44%                  |
| 9–11th Grades                                       | 4%                   | 3%                      | 28%                  |
| High school graduate                                | 11%                  | 15%                     | 16%                  |
| Vocational training/some college                    | 30%                  | 41%                     | 9%                   |
| College graduate                                    | 30%                  | 19%                     | 1%                   |
| Some graduate school/graduate degree                | 26%                  | 21%                     | 3%                   |
| Annual income ( $\chi^2(14) = 152.995, p < 0.001$ ) |                      |                         |                      |
| < \$4,000   | 6%                   | 15%                     | 49%                  |
| \$4000–7999   | 8%                   | 13%                     | 18%                  |
| \$8000–11 999                                       | 6%                   | 8%                      | 14%                  |
| \$12 000–19 999                                     | 12%                  | 10%                     | 13%                  |
| \$20 000–27 999                                     | 21%                  | 19%                     | 4%                   |
| \$28 000–35 999                                     | 15%                  | 13%                     | 2%                   |
| \$36 000–43 999                                     | 13%                  | 9%                      | 1%                   |
| ≥\$44 000   | 20%                  | 13%                     | 0%                   |
| Employed full- or part-time (percent)               | 67% (A)              | 57% (A)                 | 22% (B)              |
| Time caregiving (years)                             | 1.99 (A)             | 1.74 (A)                | 2.15 (A)             |
| HIV-positive (percent)                              | 41% (A)              | 4.7% (B)                | 37% (A)              |
| Number of other chronic illnesses (0–9)             | 1.38 (A)             | 1.30 (A)                | 1.28 (A)             |
| Physical symptomatology (1–5)                       | 2.35 (A)             | 2.18 (A)                | 2.29 (A)             |
| Has medical insurance (percent)                     | 78% (A)              | 90% (B)                 | 49% (C)              |
| HMO insurance (percent)                             | 29% (A)              | 33% (A)                 | 12% (B)              |
| Private insurance (percent)                         | 40% (A)              | 44% (A)                 | 5% (B)               |
| Medicare (percent)                                  | 4% (B)               | 10% (A)                 | 3% (B)               |
| Medi-Cal (percent)                                  | 8% (B)               | 10% (B)                 | 31% (A)              |
| Veteran's insurance (percent)                       | 3% (A)               | 0% (B)                  | 0% (B)               |
| Other insurance (percent)                           | 2% (A)               | 0% (A)                  | 0% (A)               |
| Number of major life events (0–8)                   | 1.99 (A)             | 1.83 (A)                | 1.13 (B)             |

<sup>a</sup>All except education and income are means compared using Duncan's multiple range test. Values with the same Duncan grouping (A, B, C) are not significantly different from each other at the  $p < 0.05$  level.

<sup>b</sup>Numbers in brackets following other chronic illnesses, physical symptomatology and major life events represent the possible range of responses.

significantly fewer major life events relative to gay and bisexual males and Anglo females (1.13 *versus* 1.99 for gay and bisexual men and 1.83 for Anglo women,  $p < 0.05$ ). They had been providing AIDS-related care for similar lengths of time as their cohorts, and they did not differ significantly from the other two groups in the number of other chronic illnesses they reported or their level of physical symptomatology.

When examining differences in primary and secondary stressors, mediators, and depression, we see the same general pattern: the two Anglo groups are similar to each other, with Latinas displaying greater differences. All three groups reported providing similar levels of assistance with ADLs, role overload, role captivity, and loss of self-identity. We see in the case of one primary stressor, PWA cognitive difficulties, the Latinas reported significantly lower levels of stress than the other two groups (0.44 *versus* 1.57 for gay and bisexual men and 1.59 for Anglo women,  $p < 0.05$ ). Moreover, in examining other primary and secondary stressors, the Latinas reported significantly greater stress from difficulties with PWA problem behaviors than the other groups (1.89 *versus* 1.74 for gay and bisexual men and 1.66 for Anglo women,  $p < 0.05$ ). Anglo women differed from the other groups only by endorsing fewer

TABLE II Mean differences<sup>a</sup> in stressors, mediator variables, and depression

| <i>Measure (Theoretic range)</i>        | <i>Gay men<br/>(n = 192)</i> | <i>Anglo women<br/>(n = 86)</i> | <i>Latinas<br/>(n = 154)</i> |
|---|------------------------------|---------------------------------|------------------------------|
| Activities of daily living (1-4)        | 1.93 (A)                     | 1.88 (A)                        | 1.98 (A)                     |
| PWA cognitive difficulties (0-4)        | 1.57 (A)                     | 1.59 (A)                        | 0.44 (B)                     |
| PWA problem behaviors (1-4)             | 1.74 (A)                     | 1.66 (A)                        | 1.89 (B)                     |
| Role overload (1-4)                     | 2.80 (A)                     | 2.86 (A)                        | 2.69 (A)                     |
| Role captivity (1-4)                    | 2.13 (A)                     | 2.13 (A)                        | 2.20 (A)                     |
| Loss of self (1-4)                      | 2.12 (A)                     | 2.00 (A)                        | 1.72 (A)                     |
| Number of caregiver services used (1-5) | 0.53 (B)                     | 0.76 (A)                        | 0.36 (B)                     |
| HIV-related health worries (1-4)        | 2.24 (A)                     | 1.92 (B)                        | 2.28 (A)                     |
| Support from PWA's friends (1-4)        | 3.16 (A)                     | 3.17 (A)                        | 3.03 <sup>b</sup> (B)        |
| Coping: positive outlook (1-4)          | 3.40 (A)                     | 3.58 (B)                        | 3.37 (A)                     |
| Mastery (1-4)                           | 2.91 (A)                     | 2.90 (A)                        | 2.50 (B)                     |
| Self-esteem (1-4)                       | 3.20 (A)                     | 3.27 (A)                        | 3.04 (B)                     |
| Depression                              |                              |                                 |                              |
| Behavioral stress inventory (0-4)       |                              |                                 | 0.84                         |
| Hopkins depression subscale (1-4)       | 2.01 (A)                     | 1.99 (A)                        |                              |

<sup>a</sup>Means compared using Duncan's multiple range test. Means with the same Duncan grouping (A, B, C) are not significantly different from each other at the  $p < 0.05$  level.

<sup>b</sup> $n = 67$ . Most Latinas reported the PWA had no friends and this scale was not applicable to them.

HIV-related health worries (1.92 *versus* 2.24 for gay and bisexual men and 2.28 for Latinas) (see Table II).

Significant mean differences were seen across groups for each of the mediators studied. The Latinas reported significantly lower levels of support from the PWA's friends, and lower levels of mastery and self-esteem. In only two cases did the two Anglo groups demonstrate significant differences from each other: Anglo women reported using more caregiver services than either gay and bisexual males or Latinas, and reported more positive coping efforts.

In the measures of depression, the two Anglo groups reported almost identical means on the Hopkins Depression Subscale (2.01 for gay and bisexual men and 1.99 for Anglo women). Both groups surpassed the mean depression score established for general outpatient clinical samples (mean of 1.84) indicating moderate levels of depression. The Latinas' mean score on the depression subscale of the BSI was 0.84 and yielded a T score of 61.5. This score approaches the cut-off level for psychiatric disorder or caseness for nonpatient females (T score of 63).

### Predictors of Depression

In the preliminary analyses, we examined correlations between sociodemographic background variables, measures of primary and secondary stress, and potential mediators with depression (see Table III). All variables which were found to be significantly correlated at the  $p < 0.05$  level were included in hierarchical regression models. We examined study variables for multicollinearity in each subsample prior to entering variables into regression models. Two such cases were found: PWA cognitive difficulties in the gay and bisexual men's sample and role overload in the Latina sample. These variables were excluded from hierarchical regressions. When examined, neither variable significantly changed variance accounted for in depression for each of the two sample groups ( $R$ -squared reduced by 0.01 for each model). The remaining significant study variables were entered in the order elaborated by Pearlin and colleagues (1997) with

TABLE III Correlations with depression by group

| <i>Variable</i>            | <i>Gay men</i> | <i>Anglo women</i> | <i>Latinas</i> |
|----------------------------|----------------|--------------------|----------------|
| Age                        | -0.09          | -0.07              | 0.04           |
| Education                  | -0.13          | -0.18              | -0.12          |
| Income                     | -0.07          | 0.07               | -0.05          |
| Employed                   | -0.23***       | 0.04               | -0.13          |
| Years caregiving           | 0.02           | 0.10               | -0.01          |
| HIV-positive               | 0.18*          | 0.07               | 0.11           |
| Other chronic illnesses    | 0.22**         | 0.11               | 0.47****       |
| Physical symptomatology    | 0.36****       | 0.36****           | 0.54****       |
| Medical insurance          | -0.04          | -0.03              | 0.10           |
| Major life events          | 0.15*          | 0.22*              | 0.25**         |
| Activities of daily living | 0.18*          | 0.11               | -0.03          |
| PWA cognitive difficulties | 0.11           | 0.31**             | 0.32****       |
| PWA problem behaviors      | 0.27***        | 0.30**             | 0.29***        |
| Role overload              | 0.43****       | 0.24*              | 0.27***        |
| Role captivity             | 0.32****       | 0.42****           | 0.37****       |
| Loss of self               | 0.40****       | 0.52****           | 0.46****       |
| Caregiver services         | 0.13           | 0.23*              | 0.05           |
| HIV-related health worries | 0.24****       | 0.33****           | 0.29***        |
| Support from PWA's friends | -0.16*         | -0.07              | -0.08          |
| Positive coping            | -0.18*         | -0.31**            | -0.14          |
| Mastery                    | -0.40****      | -0.24*             | -0.40****      |
| Self-esteem                | -0.39****      | -0.50****          | -0.32****      |

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\*  $p < 0.001$ ; \*\*\*\* $p < 0.0001$ .

sociodemographic background factors entered first, primary objective and subjective stressors second, secondary stressors third, and mediators fourth. Variables that failed to retain significance in the multivariate model for each group at the  $p=0.10$  level were dropped. This process yielded three different models, one for each caregiver group (see Table IV).

To examine the role of those variables termed mediators for each group, we followed the procedures described by Baron and Kenny (1986). Separate analyses were conducted for each group of participants, and for each mediator, based on the variables in the hierarchical regression models. For each independent variable in each model, three multiple regression equations were calculated: the regression of the mediator on the independent variable, the regression of depression (the dependent variable) on the independent variable, and the regression of depression on both the independent and mediator variable. Separate coefficients for each equation were estimated and tested. To establish mediation, the results of the three equations had to meet three conditions: (1) the independent variable had to affect the mediator in the first equation; (2) the independent variable had to affect depression in the second equation; and (3) the mediator had to affect depression in the third equation. If all these conditions were met, and the effect of the independent variable on depression in the third equation was smaller than the effect in the second, then mediation was confirmed (see Table V).

Among the gay and bisexual men, multiple variables were included in each step of the model representing the stress paradigm. Demographic variables (other chronic illnesses and HIV serostatus) accounted for 7% of the variance in depression. When primary objective stressors (assistance with ADLs and PWA problem behaviors) were added, the amount of variance accounted for increased to 11%. In the third step of the model, primary subjective stressors (role overload and loss of self-identity) were added and the amount of variance accounted for increased to 30%. The secondary

TABLE IV Hierarchical regression models predicting depressive symptomatology

| <i>Gay and bisexual men (n = 192)</i> |   |                |
|---------------------------------------|---|----------------|
| Step 1                                | Other chronic illnesses, HIV status<br>$R^2 = 0.07$ ( $F = 7.601$ , $p = 0.0007$ )  |                |
| Step 2                                | Add ADLs, PWA problem behaviors<br>$R^2 = 0.11$ ( $F = 6.879$ , $p = 0.0001$ ; $F$ -change = 5.7723, $p = 0.0037$ )       |                |
| Step 3                                | Add role overload, loss of self<br>$R^2 = 0.30$ ( $F = 14.354$ , $p = 0.0001$ ; $F$ -change = 25.6746, $p = 0.0001$ )     |                |
| Step 4                                | Add mastery<br>$R^2 = 0.35$ ( $F = 15.904$ , $p = 0.0001$ ; $F$ -change = 17.5149, $p = 0.0001$ )                         |                |
| Step 5                                | Add self-esteem, positive coping<br>$R^2 = 0.38$ ( $F = 13.899$ , $p = 0.0001$ ; $F$ -change = 4.6630, $p = 0.0106$ )     |                |
| Final model:                          |   |                |
|                                       | <i>Standardized beta</i>  | <i>p-Value</i> |
| Other chronic illnesses               | 0.13  | 0.0322         |
| HIV status                            | 0.16  | 0.0061         |
| Activities of daily living            | 0.07  | 0.0692         |
| PWA problem behaviors                 | 0.11  | 0.0966         |
| Role overload                         | 0.27  | 0.0001         |
| Loss of self                          | 0.13  | 0.0564         |
| Mastery                               | -0.16   | 0.0314         |
| Self-esteem                           | -0.12   | 0.1076         |
| Positive coping                       | -0.14   | 0.0438         |
| <i>Anglo women (n = 86)</i>           |   |                |
| Step 1                                | Major life events<br>$R^2 = 0.03$   |                |
| Step 2                                | Role captivity, loss of self<br>$R^2 = 0.30$ ( $F = 12.871$ , $p = 0.0001$ ; $F$ -change = 16.6310, $p = 0.0001$ )        |                |
| Step 2                                | Add self-esteem, caregiver services<br>$R^2 = 0.43$ ( $F = 13.883$ , $p = 0.0001$ ; $F$ -change = 10.7532, $p = 0.0001$ ) |                |
| Final model:                          |   |                |
|                                       | <i>Standardized beta</i>  | <i>p-Value</i> |
| Major life events                     | 0.15  | 0.0699         |
| Role captivity                        | 0.17  | 0.0985         |
| Loss of self                          | 0.27  | 0.0103         |
| Self-esteem                           | -0.38   | 0.0001         |
| Caregiver services                    | 0.21  | 0.0191         |
| <i>Latinas (n = 154)</i>              |   |                |
| Step 1                                | Physical symptomatology, other chronic illnesses, major life events<br>$R^2 = 0.34$ ( $F = 26.915$ , $p = 0.0001$ )       |                |
| Step 2                                | Add role captivity, loss of self<br>$R^2 = 0.42$ ( $F = 22.677$ , $p = 0.0001$ ; $F$ -change = 10.8886, $p = 0.0001$ )    |                |
| Step 3                                | Add self-esteem<br>$R^2 = 0.47$ ( $F = 23.270$ , $p = 0.0001$ ; $F$ -change = 15.1624, $p = 0.0002$ )                     |                |
| Final model:                          |   |                |
|                                       | <i>Standardized beta</i>  | <i>p-Value</i> |
| Physical symptomatology               | 0.24  | 0.0020         |
| Other chronic illnesses               | 0.25  | 0.0004         |
| Major life events                     | 0.10  | 0.1215         |
| Role captivity                        | 0.16  | 0.0175         |
| Loss of self                          | 0.20  | 0.0053         |
| Self-esteem                           | -0.24   | 0.0002         |

TABLE V Regression models testing mediation of depression, by group

| Independent variable (IV)  | $\beta$ , Depression on IV | Self-esteem (SE)   |                       | Positive coping (PC) |                    | Mastery (M)           |              |                   |                      |              |
|----------------------------|----------------------------|--------------------|-----------------------|----------------------|--------------------|-----------------------|--------------|-------------------|----------------------|--------------|
|                            |                            | $\beta$ , SE on IV | Depression on SE + IV |                      | $\beta$ , PC on IV | Depression on PC + IV |              | $\beta$ , M on IV | Depression on M + IV |              |
|                            |                            |                    | $\beta$ , SE          | $\beta$ , IV         |                    | $\beta$ , PC          | $\beta$ , IV |                   | $\beta$ , M          | $\beta$ , IV |
| Gay men ( $n = 192$ ):     |                            |                    |                       |                      |                    |                       |              |                   |                      |              |
| Other chronic illnesses    | 0.22**                     | 0.09               | -0.37****             | 0.19**               | 0.08               | -0.19**               | 0.24***      | -0.13             | -0.37****            | 0.17**       |
| HIV status                 | 0.18*                      | -0.12              | -0.37****             | 0.13*                | 0.01               | -0.18*                | 0.18*        | -0.03             | -0.39****            | 0.17*        |
| Activities of daily living | 0.18*                      | 0.06               | -0.40****             | 0.20**               | 0.15*              | -0.21**               | 0.21**       | -0.03             | -0.39****            | 0.17*        |
| PWA problem behaviors      | 0.27***                    | -0.02              | -0.38****             | 0.26****             | 0.25***            | -0.26***              | 0.33****     | 0.00              | -0.40****            | 0.27****     |
| Role overload              | 0.43****                   | -0.20**            | -0.31****             | 0.36****             | 0.05               | -0.20**               | 0.44****     | -0.21**           | -0.32****            | 0.36****     |
| Loss of self               | 0.40****                   | -0.32****          | -0.29****             | 0.30****             | -0.16*             | -0.11                 | 0.38****     | -0.33****         | -0.30****            | 0.30****     |
| Anglo women ( $n = 86$ ):  |                            |                    |                       |                      |                    |                       |              |                   |                      |              |
| Major life events          | 0.21                       | 0.09               | -0.48****             | 0.25**               | 0.14               | 0.21                  | 0.21         | 0.21              | 0.21                 | 0.18         |
| Role captivity             | 0.42****                   | -0.24*             | -0.38****             | 0.33***              | 0.01               | 0.22*                 | 0.01         | 0.22*             | 0.22*                | 0.42****     |
| Loss of self               | 0.52****                   | -0.28*             | -0.34***              | 0.43****             | 0.16               | 0.15                  | 0.16         | 0.15              | 0.15                 | 0.50****     |
| Latinas ( $n = 154$ ):     |                            |                    |                       |                      |                    |                       |              |                   |                      |              |
| Physical symptomatology    |                            | 0.54****           |                       | -0.12                |                    | -0.26****             |              |                   |                      | 0.50****     |
| Other chronic illnesses    |                            | 0.47****           |                       | -0.13                |                    | -0.27***              |              |                   |                      | 0.43****     |
| Major life events          |                            | 0.25**             |                       | 0.05                 |                    | -0.34****             |              |                   |                      | 0.27***      |
| Role captivity             |                            | 0.37****           |                       | -0.06                |                    | -0.30****             |              |                   |                      | 0.35****     |
| Loss of self               |                            | 0.46****           |                       | -0.12                |                    | -0.27****             |              |                   |                      | 0.42****     |

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ ; \*\*\*\* $p < 0.0001$ .

stressor was not retained in the model. Finally, when adding mastery, self-esteem, and positive coping as potential mediators, the total model accounted for 38% of the variance in depression.

In the gay and bisexual male subsample, self-esteem and mastery did mediate the effects of the primary subjective stressors (role overload and loss of self-identity), accounting for 19–33% of the total effect of independent variables. The two mediators had roughly equivalent indirect effects on these independent variables. In addition, positive coping mediated the primary objective stressors.

In the Anglo female sample, the final hierarchical model retained fewer and different variables. The only significant demographic variable was major life events, which accounted for 3% of the variance. With regard to stress variables, only the primary subjective stressors of role captivity and loss of self-identity were included in the second step, increasing the variance accounted for to 30%. The secondary stressor was not retained in the model. When mediators self-esteem and caregiver services were added in the final step, the variance accounted for rose to 43%. It is noteworthy that use of caregiver services was associated with increasing depression scores in this group.

Somewhat different results were found in the mediation analyses for the Anglo women than were seen for the gay men. Self-esteem, one of the two potential mediators in the hierarchical model, did demonstrate large mediation effects for both primary subjective stressors (role captivity and loss of self-identity). Neither self-esteem nor the second potential mediator, caregiver services, demonstrated a significant mediation effect on major life events.

Among the Latinas, a still different pattern of predictors emerged. Caregiver background variables of physical symptomatology, other chronic illnesses, and major life events were all included in the first step, accounting for more than a third of the variance in depression. The second step retained no primary objective stressors; however, when primary subjective stressors of role captivity and loss of self-identity were added to the model, variance accounted for in depression increased to 42%. The secondary stressor was not retained in the model. In the final step, the only significant mediator in the model was self-esteem; when added to the background variables and stressors, this mediator increased the variance accounted for in depression to 47%.

The results of the mediation analyses for the Latinas revealed that self-esteem is not an important mediator of any variable in the hierarchical model. Self-esteem only accounted for 5–9% of the total effect of the independent variables on depression.

These results demonstrate some important differences across caregivers groups, both in terms of the variables that were retained as significant predictors and the amount of variance in depression they explained. More demographic and caregiver background variables retained significance in the multivariate model for Latinas than either of the other groups, and these variables accounted for more variance in the Latina caregivers than in either of the other groups (34% for Latinas compared to 7% for gay and bisexual males and 3% for Anglo females). These findings suggest that fewer resources available to Latina caregivers may affect health status and vulnerability to stress. Such a risk status may predispose these caregivers to life event factors that may influence depression. It is indeed surprising that given these circumstances, depression scores were not higher, although under-reporting due to cultural sanctioning may be present.

With regard to so-named mediating variables, self-esteem proved to be an important factor for all of the caregivers studied: low self-esteem predicted depression for both

female groups and approaches significance for male caregivers. Both lack of efficacy/mastery and positive coping, appears to influence depression only for gay and bisexual men, with low mastery and fewer coping efforts predicting higher depression scores. Of interest, use of caregiver services is present only in the model for Anglo women, with greater use of services being associated with greater depression.

## DISCUSSION

Researchers have long been interested in the deleterious effects of stress on depression in caregiving. While findings point to a clear association between these dynamic variables, few studies have examined how caregiver stress may variably predict depression across ethnic and gender groups. How caregivers perceive their stress may vary considerably across gender and cultural groups; hence, methods of service provision may also need to vary. Our study of AIDS caregivers sheds light on this issue. Clearly, stress variables vary dramatically in predicting depression across gender and ethnic groups. In fact, in this study stress variables added 27% to the total variance for the Anglo females and 23% for Anglo males, as opposed to only 8% for the Latinas. Our results point to a number of implications.

### Differences by Gender

Of note, primary objective stressors, including performing activities of daily living, and dealing with PWA problematic behaviors, are only present in the model predicting depression for the Anglo gay and bisexual male caregiver group. These variables were not significant predictors of depression for Latinas or Anglo females. Similarly, role overload predicted depression for gay and bisexual men, but is absent from both women's models. These findings suggest that men may be more vulnerable to objective stressors as they have few caregiver role models and are infrequently socialized to perform such tasks. Depression in male caregivers, in particular, may be reduced by direct caregiving services such as in-home attendant care or adult day-care.

With regard to primary subjective stressors, again, we see a gender division as role captivity appears only in stress models for female caregivers. Role captivity is statistically significant for the Latinas and approaches significance for the Anglo female caregivers ( $p < 0.09$ ); hence, it appears to be an important predictor of depression for both female groups. Such a finding may be rooted in the multiple roles that women must perform. Women involved in AIDS caregiving may have less time to meet other caregiving, life demands and responsibilities frequently expected of women. Other family responsibilities, work, or community involvement may be curtailed out of necessity. In addition, it is possible that gay and bisexual men may identify more with the person with AIDS, and hence; role captivity may influence depression to a lesser degree than is seen for women.

Another primary subjective reading of stress, role overload, also appears to be influenced by gender. What constitutes an overload in caregiving responsibility may be grounded in gender norms; male caregivers may perceive role overload differently than female caregivers. For example, when queried about needed services, many of the Latinas professed that provision of care was and should be their responsibility, rather than that of a professional or an institution. Such remarks

confirm caregiving cultural socialization patterns in women. These findings suggest that service providers will need to assess not only the direct tasks and actions that caregivers perform, but also the meaning that caregivers attach to their actions. What influences AIDS caregiver depression may very well be filtered through gender and cultural lenses.

### **Differences by Cultural Background**

Background variables such as physical symptomatology, chronic illness, and life events predicted a substantial portion of the variance in depression exclusively for the Latina AIDS caregivers. More demographic and background variables retained significance in the multivariate model for Latinas, and these variables accounted for more variance in depression for Latina caregivers than in either of the other two Anglo groups (34% for Latinas compared to 7% for gay males and 3% for Anglo women). These results suggest that the design of service delivery for poor, monolingualistic Latina caregivers must take into account primary health care issues and life course vulnerability as having potential influence on depression. Of the 154 Latinas caregivers, more than 80% reported suffering from at least one chronic illness other than HIV/AIDS. Clearly, for this group, poor physical health is associated with depression and is likely to be quite debilitating for the caregiver. Under such circumstances, the quality of caregiving is likely to be compromised, as well as the quality of life. Such conditions may predispose Latina caregivers to life event factors that also impact depression. It is indeed surprising that given these circumstances, depression scores were not higher, although other investigations have found that Latinas and other caregivers of color tend to report lower depression than their Anglo counterparts (e.g. Harwood *et al.*, 1998; Janevic and Connel, 2001). Under-reporting of depressive symptoms due to cultural norms or sanctioning may have influenced depression scores for the Latinas. Previous studies have concluded that Mexican Americans are lower in self-disclosure scores than Anglo Americans (Acosta and Sheehan, 1978), and that responses to depression assessments differentially correlate with ethnicity (Vernon *et al.*, 1982); however, these findings may also be a reflection of the methods used to assess depressive symptomatology (Skaer *et al.*, 2000). Service systems must attend to both the physical and mental well-being of caregivers, and to the caregiver's capacity to access resources. The need for these services appears to be especially prominent among poor Latina caregivers (Land and Hudson, 2001).

While the results of the mediation analyses were not promising for the Latinas, indicating that self-esteem has little impact in buffering the impact of stressors on depression, findings are more promising for the two Anglo groups. While mediators did not completely ameliorate the impact of the stressors on depression, they did reduce the total effect of both primary objective and subjective stressors for gay men, and the primary subjective stressors for Anglo women. For gay men, self-esteem and mastery attenuated the relationships between both role overload and loss of self-identity on depression while coping reduced the effects of primary objective stressors. Similarly, for Anglo women, self-esteem reduced the relationship between both role captivity and loss of self-identity on depression. Efforts to reduce the effects of primary objective stressors in women may involve more direct services such as attendant care.

### All Caregivers

We note that depression in all groups of caregivers seems to be influenced by those variables addressing the self: loss of self-identity to the caregiver role and self-esteem. Our findings suggest that self-identity and related esteem may have a powerful effect on depression and should be addressed in provision of mental health for all caregivers.

These data portray a picture of caregiving that diverges considerably across gender, class, and cultural life situations. While findings suggest that all groups of caregivers suffered from moderate levels of depression, help-seeking behavior such as service acquisition appears to be shaped by access, knowledge, and cultural acceptance. For example, the only model in which the use of caregiver services was associated with depression was in the Anglo female stress model in which service use was positively associated with depression. Such findings are not contradictory with previous research that suggests that Caucasian women are more likely to seek help for depression than their Caucasian male or ethnic minority counterparts (Hu and Snowden, 1992; Talamantes *et al.*, 1995).

The services required to meet the needs of HIV-infected individuals and their caregivers have changed dramatically over the past decade. Notably, service provision has infrequently taken into account and adapted to the changing face of AIDS. AIDS is no longer viewed as a rapidly terminal illness, but rather as a chronic and often debilitating disease, one that may require vigilant in-home care, and management of the adherence to a complex medical regimen and its side effects. How caregivers experience and define stress, how they negotiate their daily lives, and how well they fare with the mental health sequelae of AIDS caregiving is often influenced by gender and cultural life prescriptions. If service provision is to stem depression in this valuable resource, models need to attune to a stress process that varies with caregiver background, overall physical health, and life circumstances. Because AIDS caregiving requires a longer and different trajectory today than previously, the need to support caregivers in their efforts has gained importance. AIDS caregiving requires a commitment of time and endurance that may wear away the caregiver's sense of self, their esteem, and their feelings of efficacy in their world. Pearlin's model offers service providers a screening tool to differentially assess the multiple needs of individuals from quite diverse AIDS caregiver groups.

There are several considerations that may limit the conclusions that can be drawn from these results. All variables were created from self-report measures. In addition, these data reveal cross-sectional associations with depression; therefore, the direction of causality we propose is inferred and restricts interpretation of results. The study is based on a voluntary, nonrandom sample of men and women who were recruited through medical clinics, the media, and community-based agencies; therefore, the results may be subject to self-selection bias related to sampling. Further, the samples were drawn with the advent of HAART regimens. Because treatment for HIV changes rapidly, data collected today may reveal somewhat different findings and access to medical care may differ across PWA and caregiver groups. In addition, the depression instruments were designed to measure symptomatology and did not confirm a diagnosis of clinical depression. It is possible that such scores were influenced by the physical status of the caregiver, caregiver self-esteem, or the bereavement process. Because of the low socioeconomic level of the Latina group, findings cannot be generalized to Latina caregivers with higher income or educational levels. As noted, this group may

have under-reported their distress because of cultural norms that promote female caregiving and inhibit help-seeking behavior. For these reasons, it may not be appropriate to generalize these findings to AIDS caregivers as a whole.

Overall, findings of this study suggest that many AIDS caregivers are at risk for depression that may be influenced by a varying stress process. Results point to the need for caregiver services that are specified to the life circumstances of the caregiver. While some progress has been noted in services to gay and bisexual men, caregiver needs may be quite divergent and service plans must be sensitized to and embedded in cultural and gender norms, and in background characteristics of the caregiver. They may include services aimed at primary health care or situated in health care settings, or direct in-home provision of care. Importantly, greater attunement is needed to reduce those stressors that are more influenced by the cognitive and psychological processes of the caregiver such as feelings of overload, captivity, loss of self to the caregiving role, and low self-esteem. Caregiving is viewed through a lens filtered by cultural and gender norms. It is vital to understand the distinctiveness of caregiving in order to develop services that will succeed in supporting this valuable resource.

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