Chapter V. Discussion, Conclusions and Policy Implications

5.1 Introduction

There are five sections in this chapter. The first section introduces the structure of the chapter. The second section summarizes the results for each hypothesis. Results are discussed in the third section including discussion of major findings, strengths and limitations of the dissertation, summary and ideas for further work for each research question. The fourth section presents the policy implications of the present study. In the last section, I draw conclusions based on the previous four sections of the chapter.

5.2 Summary of Results for Each Hypothesis

**Hypothesis 1.1:** Among the elderly, minorities are more likely to have depression compared with non-Hispanic whites.

The evidence in this dissertation partially supports this hypothesis. Among community-dwelling Medicare beneficiaries, Hispanics are significantly (at the 10% level) more likely to have depression compared with non-Hispanic whites based on the SCID for the DSM-IV criteria and the two-item screen. No significant difference is found between non-Hispanic blacks and whites. After controlling for population characteristics (sociodemographic characteristics and health status), differences in depression prevalence between minorities and non-Hispanic whites decrease. This suggests that the combinations of population characteristics contribute to differences in depression prevalence across racial and ethnic groups.
Hypothesis 1.2: The two-item screen is a good general measure for studying disparities in depression prevalence across racial/ethnic groups compared with the SCID for the DSM-IV criteria.

The evidence supports this hypothesis. Differences in the prevalence of depression between minorities and non-Hispanic whites are comparable using the two-item screen and the SCID. Sensitivity analysis indicates that for the two-item screen, compared with using “some of the time” as the cut-point for the question about anhedonia, using “most of the time” as the cut-point provides results that are closer to those estimated based on the SCID for the DSM-IV criteria.

Hypothesis 2: Minorities are less likely to have a usual source of care compared with whites.

As expected, minorities have higher barriers to access care compared with non-Hispanic whites. Bivariate analysis indicates that minorities are less likely to have a USOC compared with non-Hispanic whites. The difference in having a USOC is statistically significant at the 1% level between Hispanics and non-Hispanic whites (92.0% vs. 95.6%, respectively). No significance difference in having a USOC is found between non-Hispanic blacks and whites (94.6% vs. 95.6%, respectively). Among people with a USOC, minorities are less likely to have a doctor’s office as their site of USOC. Again, the difference between Hispanics (77.3%) and non-Hispanic whites (85.9%) is significant at the 1% level, and the difference between non-Hispanic blacks (81.2%) and whites is significant at the 10% level. The results from the multivariate analysis are consistent with the evidence found in the bivariate analysis.
Correlates associated with having a USOC found in the present study include older age, being female, college or higher education, higher income, Medicare supplemental insurance, being married, poor self-rated health, and comorbidities.

**Hypothesis 3.1:** Among the community-dwelling elderly, people who have a usual source of care are more likely to have ambulatory care visits.

This hypothesis is supported by the evidence found in this dissertation. Having a USOC is found to be associated with a 62.6% higher probability of having at least one ambulatory care visit (95.6% for those with a USOC vs. 58.8% among people without a USOC) among the community-dwelling elderly.

**Hypothesis 3.2:** People with barriers to access to care are more likely to screen positive for depression among the elderly living in the community.

As expected, better access to care is found to be associated with better mental health status. USOC is found to be associated with a 24.8% decrease in the probability of having screened depression (11.5% vs. 15.3%) among the community-dwelling elderly.

**Hypothesis 4.1:** Minorities are less likely to be recognized by physicians as having depression compared with whites among people who screened positive for depression using the two-item screen.

The evidence partially supports this hypothesis. Using clinical diagnosis of depression as the measure of physician recognition, no significant differences are found across racial and ethnic groups among people who screened positive for having depression and had at
least one ambulatory care visit in the past year. When using either clinical diagnosis or antidepressant use as the measure of physician recognition, non-Hispanic blacks are found to be significantly less likely to be recognized by physicians as having depression compared with non-Hispanic whites. No significant difference is found between Hispanics and non-Hispanic whites. Results from bivariate analysis and multivariate analysis are consistent.

Hypothesis 4.2: Physicians are less likely to communicate with minorities about their mental health disorders compared to whites among people recognized by physicians as having depression.

This hypothesis is not supported by the evidence found in this dissertation. Among people recognized by physicians as having depression, no significant differences in communication about mental disorders are found across racial/ethnic groups. Results are consistent for both bivariate analysis and multivariate analysis.

5.3 Discussion

Racial and Ethnic Disparities in Depression Prevalence among the Elderly

Research Question 1: Are there racial/ethnic disparities in the prevalence of depression among the elderly at the national level? Are findings consistent for different measures of depression?
Among the elderly, depression is a serious public health problem with significant social and economic burden. Eliminating disparities in depression prevalence is an important policy initiative.

Few studies have examined racial and ethnic disparities in depression prevalence among the community-dwelling elderly (e.g. Gallo et al., 1998; Hybels et al., 2001; Blazer et al., 1998). This research has resulted in mixed findings. Differences in results between studies may due to differences in study design, measures of depression, and/or study population. Such differences make it difficult to compare results between studies and reach conclusions.

In this dissertation, using nationally representative samples of community-dwelling Medicare beneficiaries, racial/ethnic disparities in depression prevalence are estimated based on two different measures of depression. The results suggest that the two-item screen provides consistent results compared with the SCID for the DSM-IV criteria, the gold standard. Non-Hispanic blacks and Hispanics are found to have higher prevalence of depression compared with non-Hispanic whites. Differences in socioeconomic status (SES) are found to contribute to disparities in the prevalence of screened depression but not depression defined by diagnostic criteria. Differences in health status (e.g. self-rated health, comorbidities and disabilities) are associated with disparities in the prevalence of depression that meets diagnostic criteria.

The prevalence of depression based on the DSM-IV criteria for each racial/ethnic group is lower than that found in the Health and Retirement Study (non-Hispanic whites: 3.5% vs. 7.8%; non-Hispanic blacks: 4.4% vs. 5.2%; Hispanic: 5.5% vs. 7.5%) (Dunlop et al., 2003). This may be due to the study population in the Health and Retirement Study.
(54-65 years old) being younger than the study sample used in this dissertation (65-98 years old). This finding is consistent with previous findings that the prevalence of major depression decreases with age (Romanoski et al., 1992). The prevalence of major depression was found to be the highest among non-Hispanic whites in the Health and Retirement Study, while the prevalence among non-Hispanic whites is found to be the lowest in the present study. Further study is needed to examine whether the trajectory of major depression is different for each racial/ethnic group with aging.

In general, the prevalence of depressive symptoms measured by the two-item screen (10-20%) and that of major depression measured by the SCID diagnosis for the DSM-IV criteria (3-6%) found in this study fall within the range of the prevalence found in previous studies among the community-dwelling elderly (8-20% for depressive symptoms and about 1-4% for major depression) (Alexopoulos, 1997; Gallo & Lebowitz, 1999; Gurland et al., 1996).

**Strengths and limitations**

To the author’s knowledge, this is the first study to compare racial and ethnic disparities in depression prevalence based on a screening tool and the SCID for the DSM-IV criteria, the gold standard for the clinical diagnosis of depression, using nationally representative samples of the elderly.

Several limitations must be acknowledged for the present study. First, the samples analyzed are from two different surveys and their population characteristics may differ (see Appendices E and F). For example, information about whether people have dementia is not available in the NESARC sample, and Puerto Rico is not included in the sampling
frame for NESARC. Sensitivity analyses using the MCBS data indicate that the results remain similar for each subsample. I expect that the NESEARC sample would follow the same pattern since it is also a nationally representative sample of American elderly.

Second, the format of the two-item screen is different from that of the PHQ-2 that is widely used in the literature (Kroenke et al., 2003; Whooley et al., 1997). No data are available about whether the different format of these two questions would affect the results.

Third, the two-item screen is based on self-reported depressive symptoms in the past 12 months. There may be recall bias and there is no information about whether such bias would be expected to vary across racial/ethnic groups.

**Summary**

First, racial and ethnic disparities in depression prevalence are found using nationally representative samples based on both the structured-interview derived diagnosis and the screening tool. Hispanics are about 1.6 times as likely as non-Hispanic whites to have major depression and screen positive for depression. Non-Hispanic blacks are about 1.2 times as likely as non-Hispanic whites to have major depression and screen positive for depression. Interventions to improve minority SES may help decrease disparities in the prevalence of depressive symptoms. Enhanced treatments of chronic conditions (better access and higher quality) among minorities are expected to decrease disparities in the prevalence of depression that meets diagnostic criteria.

Second, the two-item screen is found to provide consistent results about racial/ethnic disparities in depression prevalence compared with the gold standard in the
present study. Moreover, given its acceptable test performance (e.g. sensitivity: 100% for each group; specificity: 76% for non-Hispanic whites, 84% for blacks, and 79% for Hispanics) compared with the SCID diagnosis for each racial and ethnic group (Li et al., 2007), the two-item screen is a good proxy to study racial/ethnic disparities in the prevalence of depression. The two-item screen is much easier to use in large scale surveys compared with structured interviews due to time and cost. It provides more opportunities to monitor disparities in depression prevalence and the performance of the health care system in decreasing racial/ethnic disparities.

**Further studies**

Additional research is needed to replicate these findings in other samples and to examine whether the results would vary using a different format for the two questions in the two-item screen and whether such differences would affect the estimation of racial/ethnic disparities in depression prevalence based on the two-item screen.

Racism is discrimination against people based on their perceived “race.” There are three different levels of racism, i.e. institutional, personal, and internal (Jones, 2000). Racism is expected to have a significant effect on people’s physical health as well as mental health (Collins et al., 2000; Krieger et al., 2000; Gee et al., 2002; Karlsen et al., 2002; Kennedy et al., 2002). It is unobserved in the datasets analyzed in this dissertation. The effect of racism may differ systematically by race/ethnicity and correlate with other socioeconomic characteristics such as education and income. There is a growing body of research from community studies that finds that discrimination (personal racism) is associated with poorer mental health status (Williams et al., 2003). Further studies are
needed to examine the cumulative effects over time of perceived racism at different levels on health as well as on mental health. The effects may differ by race and ethnicity. Such information would be valuable for exploring policy interventions to eliminate disparities in the prevalence of depression.

Similarly, information about nativity, years in the United States and age at first arrival in the U.S. should be considered in further studies examining disparities in depression prevalence across racial/ethnic groups among the elderly. These factors have been found to be significantly associated with the degree of acculturation among immigrants (e.g. Lara et al., 2005; Durden, 2004). Acculturation appears to affect the strength of the relationships among ethnicity, health outcomes and health services use (Ford and Kelly, 2005), and to affect disparities in depression prevalence across racial/ethnic groups. Without taking these variables into consideration, the estimates of racial/ethnic disparities in depression prevalence may be biased.

**Racial and Ethnic Disparities in Access to Care among the Elderly**

**Research Question 2:** Are there disparities in having a usual source of care among community-dwelling Medicare beneficiaries?

Disparities in having a usual source of care have been widely found between minorities and whites (e.g. Zuvekas et al., 2003; Fox et al., 2007). However, few studies have been done among the elderly (Shih et al., 2004). All people age 65 or older are covered by the Medicare program and are expected to have a better chance to have a USOC compared with other age groups. On average, over 90% of Medicare beneficiaries have a USOC (NHDR, 2005). However, most of those who lack a USOC are minorities
and/or residents of isolated rural areas (National Association of Community Health Centers, 2004). USOC has been found to be associated with better preventive care, higher healthcare utilization and better health outcomes (e.g. Lewin-Epstein, 1991; Ettner, 1999; DeVoe, 2003; De Maeseneer et al. 2003; Starfield and Shi 2004). Monitoring trends in racial/ethnic disparities in having a USOC is a significant policy issue because to eliminate disparities in having a USOC may help decrease disparities in healthcare access and use as well as disparities in health status.

The proportion of subjects having a USOC is lower in this dissertation than in the NHIS (NHIS, 1997-2001). It may be because the NHIS study included all elderly (both HMO and FFS participants), and HMO participants are more likely to have a USOC compared with FFS participants. Compared with results from the NHIS, the proportion of people having a doctor’s office as their USOC is higher for this dissertation for each racial/ethnic group (non-Hispanic whites: 86% as compared to 82%; non-Hispanic blacks: 81% versus 71%; Hispanics: 77% versus 72%).

The results from this dissertation indicate that disparities in having a USOC across racial/ethnic groups remain among Medicare beneficiaries, especially between Hispanics and non-Hispanic whites. In general, Hispanics are younger, less educated, more likely to be unemployed, and poorer compared with non-Hispanic whites (US Census Bureau, 2001). Older Hispanics are more likely to lack Medicare supplemental insurance compared with non-Hispanic whites because they are significantly less likely to have had employer-based health insurance when they were young (Doty, 2003). Medicare supplemental insurance is significantly associated with having a USOC among FFS Medicare beneficiaries (Crystal et al., 2003).
**Strengths and limitations**

This dissertation provides information on racial/ethnic disparities in having a USOC among FFS Medicare beneficiaries at the national level. Most previous studies on racial/ethnic disparities in having a USOC are for the general population (all ages) (Weinick et al., 2000; Zuvekas et al., 2003) or adolescents (Fox et al., 2007). Few studies have focused on the elderly (Shih et al., 2006).

There are some limitations for this dissertation. First, no information about people’s knowledge about the healthcare delivery system or resource availability is available in the present study. There may be differences in such information across racial/ethnic groups. Such differences may contribute to differences in people’s probability of having a USOC. For example, people may avoid formal healthcare agencies because of their unfamiliarity with the “culture of medicine and lack of cultural sensitivity of medical professionals” (Corbin and Strauss, 1988). Without such information, there could be omitted-variable bias (Greene, 2003).

Second, no information about individual preferences or health beliefs is available in the datasets used. These factors may affect people’s propensity to have a USOC given that other things are equal. For example, racial and ethnic minorities may prefer acculturated healthcare to usual care. Lack of cultural relevance and inability to meet unique culturally defined needs of patients and caregivers may cause difficulties for minorities in accessing healthcare (Gallagher-Thompson, 2003).

Such information is helpful for interpreting disparities in having a USOC across racial/ethnic groups. For example, I found that non-Hispanic blacks are more likely to
live in an area with a primary care physician shortage compared with non-Hispanic whites (88.6% vs. 77.3%), while no significant difference is found between Hispanics and non-Hispanic whites (80.7% vs. 77.3%). Hispanics are significantly more likely to lack a USOC than non-Hispanic whites, and non-Hispanic blacks are as likely as non-Hispanic whites to have a USOC. Such differences may be due to differences in individual preferences or in knowledge about the healthcare delivery system.

**Summary**

Only about 4.8% of the study sample does not have a USOC. The primary reason for this is that Medicare provides virtually universal health insurance for the elderly. The 4.8% of the study sample represents a large number of people (n = 3,223,345), most of whom are racial/ethnic minorities and people of low socioeconomic status. It is an important policy issue to eliminate such disparities among community-dwelling Medicare beneficiaries since having a USOC has been found to be associated with better preventive care, fewer delays in healthcare, higher quality of health services and better health outcomes (Moy et al., 1995; O’Malley et al., 1997; Sox et al., 1998; Weinick et al., 1998; Ettner, 1999; DeVoe, 2003; Xu, 2002; Starfield and Shi, 2005).

**Further studies**

In this dissertation, no information is available on individuals’ health beliefs, preferences, and knowledge about healthcare delivery system. Further studies are needed to examine the effect of such factors on having a USOC and whether these factors help
explain racial/ethnic disparities in having a USOC. Such information would be valuable for policy interventions to improve people’s access to care (i.e., having a USOC).

**Effect of a USOC on the Prevalence of Screened Depression among the Elderly**

**Research Question 3:** What is the effect of having a usual source of care on depression prevalence among Medicare beneficiaries?

This dissertation finds a negative relationship between usual source of care and screened depression among elderly community-dwelling Medicare beneficiaries. Having a USOC is found to be significantly associated with more healthcare utilization and better health outcomes (lower prevalence of screened depression). I also find that the simultaneous-equations model is a better choice to test the hypothesis of this study and provides more accurate estimation than a single-equation model. The latter seriously underestimates the effect of having a usual source of care on screened depression compared with the more complex simultaneous-equations model ($\beta = -0.12$ vs. $\beta = -0.18$).

Further, the coefficient of USOC is significant in the depression equation of the trivariate probit model but not in the ordinary probit model. In the latter no statistically significant effect of ambulatory care use is found on the prevalence of screened depression.

There are several potential explanations for the association between USOC and the lower prevalence of screened depression among the elderly. First, people with a USOC may have lower levels of stress compared with those without. Evidence has been found that people are concerned with barriers to access care (such as health insurance coverage). A report from the Kaiser Family Foundation (2008) found that Hispanics are more concerned about the loss of employer-based health insurance and more likely not to
visit physicians due to cost. In addition, they have a higher financial burden (out-of-pocket expenditures on health care) compared with whites. Non-Hispanic whites are significantly more likely to have Medicare supplemental insurance, higher income, and a relatively lower percentage of income spent on health care compared with minorities. Similar concerns are expected to exist about having a USOC among the elderly. People who have a USOC are expected to feel more secure and have less stress, thereby being less likely to have screened depression. However, this only applies to people who perceive they need a USOC but experience barriers to having it.

Second, having a USOC has been widely found to be associated with better access, fewer delays in receiving care, and higher quality of care (Moy et al., 1995; O’Malley et al., 1997; Sox et al., 1998; Weinick et al., 1998; Ettner, 1999; DeVoe, 2003; Xu, 2002). Having a USOC may suggest a continuous relationship with healthcare providers, thus better communication and more appropriate care (Starfield and Shi, 2005). Timing and appropriate treatment for physical and mental diseases may be associated with lower prevalence of screened depression. USOC may be associated with fewer unmet healthcare needs. Theoretically, people would be stressed when the expected did not occur and the level of stress would increase with time (Kaplan, 1996). For example, it has been found that unmet needs among minorities are associated with depression and depressive symptoms (Plant and Sachs-Ericsson, 2004).

Third, having a USOC has been found to be associated with health behavior change (Ettner, 1999). Having a usual source of care can double the likelihood of a physician giving preventive advice on diet, tobacco cessation, and physical activity among Medicare beneficiaries (Christenson and Shinogle, 1997). Similarly, patients with
a USOC have been found to be more likely to disclose behavioral risks for disease compared with those without (Gentry et al., 1999). Among people with a USOC, physicians may help patients change their health behaviors to prevent stressful events.

This dissertation is consistent with previous studies that found that social support is associated with less depression in older adults (Norris and Murrell, 1984; Brummett et al., 2000). Social support may independently protect older adults from depression (e.g. McCrae et al., 2005). Most previous studies have measured social support as social interactions limited to spouse, children, friends, and relatives (Dean et al., 1990). Elderly people have high healthcare demand due to increasing vulnerability (e.g. declining functional status and higher prevalence of chronic conditions). Healthcare professionals may act as a resource of social support for the elderly. It has been found that social care practitioners work as a social intervention to improve the impaired social support often experienced by elders in the community (McCrae et al., 2005). It can be argued that a usual source of care should be counted as a resource for social support because older adults rely more on healthcare services compared with other age groups.

It is not surprising that having any ambulatory care use is found to have no significant effect on the prevalence of screened depression in this dissertation. First, ambulatory care use is measured as a dummy variable. The prevalence of screened depression is compared between users and non-users. The effect of ambulatory care use on health outcomes may be non-linear. It is possible that no significant effect can be detected until the amount of use reaches a certain threshold. For example, in this dissertation, no significant relationship is found between ambulatory care use and physician recognition of depression when ambulatory care use is defined as a dummy
variable. People with 13-18 (OR = 1.41) or 19 or more (OR = 2.30) ambulatory care visits are statistically significantly more likely to be recognized as having depression compared with those with 12 or fewer visits. Second, ambulatory care visits in the present study included any outpatient visits and physician office visits, not exclusively restricted to primary care and mental health visits. The other limitation of visits is that it represents a crude proxy for severity of morbidity which might in turn be correlated with depression. So the estimated effects of ambulatory care visits may be offsetting benefits and suppression effects from greater unmeasured morbidity. Third, depression is measured by a two-item screen. People who screened positive for having depression by the two-item screen may not meet the diagnostic criteria for depression, and may be less responsive to healthcare utilization compared with those who have severe mental health problems. For example, medical care treatments (such as antidepressant use) have been established as effective among people with major depression, but not among people with minor or subsyndromal depression (Oxman et al., 2002; Lyness et al., 2004).

**Strengths and limitations**

To the author’s knowledge, this is the first study that has applied a simultaneous-equations model to examine the effect of USOC on depression prevalence using a nationally representative sample of community-dwelling elderly. The simultaneous-equations model provides more accurate estimation of the effect of USOC on depression prevalence compared with a single-equation model, controlling for USOC and healthcare use as covariates. The single-equation model fails to control for endogeneity among
USOC, healthcare utilization and/or health status, and the coefficients of USOC and healthcare utilization estimated in such a model are biased.

This study has several limitations. First, for a number of reasons estimation of the effect of usual source of care on depression may be limited. The outcomes of interest (a usual source of care and screened depression in the MCBS) were measured only once a year. Information on the trajectory of depressive symptoms was not available for the study sample.

Second, older adults may experience multiple stressful events at the same time, including chronic life stresses, major life events, racism-related stresses and age-related stresses. The effect of having a usual source of care may differ among people with different levels of stress (Kaplan, 1996). In the present study, there is no information on stress-related variables such as major life events (e.g. loss of loved ones), which are prevalent among older adults. This may lead to a larger standard error for the coefficient for usual source of care.

Third, the incremental effects of a usual source of care and any ambulatory care visits were estimated at population means using the delta method. To make the results more applicable for policy implications, marginal effects should be calculated using a standardized population since effects will vary with different distributions of population characteristics.

Fourth, screened depression was measured using the two-item screen based on self-reported depressive symptoms. There could be recall-bias, which may underestimate or overestimate the effect of having a usual source of care on depression among the elderly.
Fifth, the results from this study are not generalizable to all Medicare beneficiaries. Medicare HMO participants are excluded from the study sample analyzed. Medicare HMO enrollees are generally younger and healthier than FFS enrollees, so the effect of USOC may differ among HMO enrollees as compared with FFS enrollees.

Sixth, there is potential reverse causality between screened depression and USOC, i.e. depressed/distressed patients are less likely to seek out a USOC. I did some explorations of reverse causality using a set of simultaneous-equations models. When including a dummy variable for screened depression in the USOC equation, its coefficient was not statistically significant ($\beta = -0.04$, $p = 0.56$). The full simultaneous-equations model failed to converge due to limitations in the dataset used. Further studies are needed to examine whether such a relationship could be applied to other datasets.

**Summary**

Given the above potential limitations, this dissertation provides valuable information that has important policy implications. First, having a usual source of care is found to be associated with a significant decrease in the prevalence of screened depression among the elderly. Tudor and colleagues (1998) found that Medicare beneficiaries in HMOs are more likely to be very satisfied obtaining care at one location compared with those who participated in the FFS system (Tudor et al., 1998). Enhancing better access to care (having a USOC) for older adults in the Medicare FFS system may help decrease associated stress, prevent people from becoming depressed and improve quality of life.
Second, health professional shortages are found to be significantly associated with not having a usual source of care in the present study. Enhancing health professional training in shortage areas or relocating health professionals to shortage areas is expected to improve people’s prevalence of having a USOC in such areas. Health professional shortage areas (HPSA) are used by Federal programs to allocate resources or provide benefits, such as training or bonus payments for physician services under Medicare (GAO, 2006). However, due to shortcomings in the methodology of HPSA designation, many health centers and rural health clinics do not benefit from automatic HPSA designation (GAO, 2006). Improving the HPSA designation system may help improve allocation of resources and health professionals and increase people’s probability of having a USOC.

**Further studies**

Additional research is needed to confirm several of the findings of this dissertation, namely, the relationship between USOC and the prevalence of screened depression, whether the effect of USOC varies among subpopulations such as racial/ethnic groups, and whether the effect may vary by the type of USOC (doctor’s office, clinic, etc.).

The results from this dissertation are limited to the elderly under the Medicare FFS system since the study sample analyzed in this study excluded people who participated in a Medicare risk HMO any time during the year. Studies are needed to examine whether the effect of USOC on the prevalence of screened depression applies to HMO participants. Compared with FFS participants, the relationship between USOC and
depression prevalence is expected to be weaker among HMO participants due to the following reasons: (1) People enrolled in HMOs are attitudinally and behaviorally different from those participating in the FFS system. For example, some studies have found HMO enrollees to be better educated, healthier, and more optimistic about the benefits of preventive care than their FFS counterparts (e.g. Lichtenstein et al., 1992); (2) The favorable organizational, infrastructural, or cultural characteristics of managed care systems may help increase the probability of having a USOC. HMOs encourage patients to have a primary care provider and they perform better in providing preventive services compared with FFS (Greene et al., 2001).

In addition, this dissertation is a multiple-year cross-sectional study based on observational data. It is difficult to draw causal conclusions in such studies. Longitudinal analysis would be especially helpful to examine the effect of access to care on health outcomes over time.

Racial/Ethnic Disparities in Quality of Mental Healthcare among the Elderly

Research Question 4: Are there racial/ethnic disparities in quality of mental healthcare among people who screened positive for depression, in terms of physician recognition and communication?

Depression is significantly underdiagnosed and undertreated (Sheehan, 2004). Studies on disparities in diagnosis and treatment of mental disorders have expanded during the past decade. Most studies on physician recognition or clinical diagnosis use convenience samples of clinic patients or standardized patients (Kales et al., 2005).
dissertation examines disparities in physician recognition and communication about mental disorders at the national level.

Even though depression is significantly underdiagnosed, the probability of underdiagnosis is similar across racial/ethnic groups. No significant differences in clinical diagnosis of depression (ICD-9 codes) are found in the present study across racial/ethnic groups among people who screened positive for depression and had at least one ambulatory care visit in the past year. This finding is consistent with studies using patients with standard symptoms (Kales et al., 2005). This suggests that there is no clinician bias against minorities or a differential effect of competing demands on depression recognition between non-Hispanic whites and minorities at the national level.

In this dissertation, non-Hispanic blacks are found to be significantly less likely to use antidepressants than non-Hispanic whites among people who screened positive for depression. This finding is consistent with previous studies that have reported that non-Hispanic blacks prefer psychotherapy to antidepressants (Cooper-Patrick et al., 1998). Non-Hispanic blacks are much less likely to take antidepressants, and the difference in antidepressant use between non-Hispanic blacks and whites increased over time in the Duke Established Populations for Epidemiologic Studies of the Elderly (EPESE) (Blazer et al., 2000). Furthermore, cost is a significant barrier to any care among the non-Hispanic black elderly (Blazer et al., 1995).

The present study found that there is no significant difference in physician communication about mental disorders among people recognized by physicians as having depression. This suggests that physicians have little incentive to avoid telling patients about their mental disorders once the physician recognized them. That is to say, there is
little stigma on the physician’s side. The present study excludes people without a clinical
diagnosis of depression for this research question. This exclusion may result in an
underestimation for physician communication about mental disorders in general. Some
literature suggests that physicians may talk about mental disorders with patients but do
not document diagnosis (ICD-9 codes) due to financial incentives (Bellows & Halpin,
2007; Rost et al., 2000).

Strengths and limitations

This dissertation provides evidence at the national level about racial/ethnic
disparities in quality of mental healthcare in terms of physician recognition and
communication.

A number of limitations must be acknowledged. First, the question about
physician communication is about mental disorders in general, not specifically about
depression. This may result in an overestimation of physician communication among
people recognized by physicians as having depression. Second, there may be recall bias
for this question and such bias may or may not be systematically different across
racial/ethnic groups (McGuire et al., 2008). Third, antidepressant use is identified by
prescription receipts or bottles. It is possible that patients failed to fill physician
prescriptions (due to economic burden or personal preference) and this may be more
prevalent among minorities. Physician recognition defined by antidepressant use may
thus be underestimated and disparities in physician recognition between minorities and
non-Hispanic whites may be overestimated. Fourth, no information at the clinical level
(patient-physician interaction) is available, which is important for the interpretation of
disparities in physician recognition and communication. Fifth, the two-item screen is a screening tool and not a clinical diagnosis. People who screened positive for depression using the two-item screen do not necessarily have an affective disorder. At the population level, the two-item screen is found to have clinically similar validity in identifying major depression compared with the DSM-IV criteria across racial/ethnic groups (Li et al., 2007). People who screened positive for depression and had at least one ambulatory care visit in the past year may differ systematically in depression severity across racial/ethnic groups. If this is the case, estimation of disparities in physician recognition in the present study maybe biased.

**Summary**

Depression is highly prevalent and correlates with the trajectories of physical health conditions (Yang, 2006). It is a significant public health problem among the elderly. Early diagnosis and treatment is critical for better prognosis, lower total healthcare expenditures and improved quality of life. It is important to identify reasons for underdiagnosis and undertreatment of depression in the elderly. Finally, this dissertation suggests no physician bias in clinical diagnosis among this high risk population.

**Further studies**

Further studies are needed to examine the effectiveness of different types of treatment (e.g. antidepressant, psychotherapy, both, or ECT) across racial/ethnic groups and explore reasons (such as financial barriers, cultural background, and knowledge about
treatment) for differences in depression treatment preferences and/or beliefs across racial/ethnic groups in order to enhance acceptance and adherence to treatment and improve treatment effectiveness. Additional research is required to examine whether physician recognition and communication of depression differs across characteristics at the physician (age, experience, added qualifications in geriatrics), practice (solo, group, multi-specialty), and service system levels (FFS vs. HMO).

5.4 Implications for the Bigger Picture

This dissertation provides implications for the bigger picture of studies on racial and ethnic disparities in health and healthcare: (1) Why do disparities in mental health and healthcare exist among the elderly? (2) Are all Hispanics alike? (3) What are disparities? Are we measuring them correctly? (4) How do we improve access from the supply side?

Why Do Disparities in Mental Health and Healthcare Exist among the Elderly?

Racial and ethnic disparities in health, access and quality of healthcare have been widely found in the U.S. (NHDR, 2003-2005; IOM, 2002). However, there rarely is information to help explain ‘why’ such disparities exist.

To make reasonable and applicable policy recommendations to decrease or eliminate such disparities, we need not only estimate ‘how much’ such disparities are, but we also need to ascertain ‘what’ is occurring behind the scenes, ‘how’ to interpret the results, and ‘why’ there are differences due to unobserved factors. It is difficult to extract such information from observational quantitative studies. Qualitative studies are
especially helpful in seeking answers to questions about the ‘what’, ‘how’ or ‘why’ of a phenomenon.

For example, directly observed visits between depressed elderly and their physicians could provide information on whether physicians are behaving differently based on race or not, and why they may be doing so. This would help explain the disparities in physician recognition of depression observed in the present study.

Are All Hispanics and Blacks Alike?

In this dissertation, race/ethnicity is categorized into non-Hispanic whites, non-Hispanic blacks, Hispanics and other. Results are reported only for the first three groups since the ‘other’ group is not homogeneous and no valid inference could be drawn. In fact, each of the first three groups mentioned above include several subgroups. For example, Hispanics include Mexican Americans, Cuban Americans, Puerto Ricans, Central and South Americans, and other Hispanics. Each Hispanic subgroup has its own pattern of migration and political history, socioeconomic bounds, and cultural background (Baruth & Manning, 1999). All these factors may affect their access and quality of healthcare and health outcomes. Studies have found differences in healthcare use and health status by Hispanic subtype (Weinick et al., 2004). Although this dissertation treated Hispanics as one racial/ethnic group, the results may not apply to its subgroups. For example, Lincoln and colleagues found that the Black population in the U.S. is heterogeneous and each subgroup has its distinct sociodemographic, family network and stress correlates of depressive symptoms (Lincoln et al., 2007).
Over the past decade, there has been an explosion of interest in the relationship between race/ethnicity and health. Studies are being applied to racial/ethnic groups other than blacks/whites. Large surveys at the national level such as the National Latino and Asian American Study (NLAAS) and the National Survey of American Life (NSAL) have been conducted to gather information on mental health and healthcare use among minorities. These surveys provide opportunities for research on disparities in mental health and healthcare access and use among more homogeneous racial/ethnic subgroups.

What Are Disparities? Are We Measuring Them Right?

Previous studies that examined disparities in health and healthcare considered inequalities to be disparities. These are horizontal disparities, i.e. the absence of the allocation of equal or equivalent resources for equal need (Culyer, 1995). In this dissertation, all disparities estimated are horizontal disparities.

Vertical disparities, i.e. the absence of the allocation of different resources for different levels of need, are also important (Culyer, 1995). To allocate healthcare services corresponding to different levels of healthcare needs is essential to maximize the efficiency of the health care delivery system and social welfare. Studies are needed to explore vertical disparities in access and quality of healthcare as applied in other areas such as taxation (Benson, 1997) and school finance (Rodriguez, 2004).

The current approach to identifying depression is a “yes/no” measure. Based on depressive symptoms, people are identified as having depression or not. A valid severity measure of depression, similar to that of the Severity of Addiction Index (SAI) (McLellan
et al., 1992), would be valuable to estimate vertical disparities in depression prevalence and quality of mental healthcare.

**How Do We Improve Access from the Supply Side?**

In this dissertation a shortage of health professionals is found to be significantly associated with a lack of USOC among the elderly. Local shortages of healthcare professionals have been found to be a significant barrier to accessing healthcare among the elderly (Pathman et al., 2006). It is an important policy issue to determine whether such a shortage is absolute or relative at the national level. An absolute shortage is defined as occurring when the number of health professionals is smaller than needed based on the population’s health needs (GAO, 2007). Relative shortage occurs when health professionals are disproportionately located in certain areas rather than in other areas, given that the total number of health professionals is large enough to care for the total population.

If there is an absolute shortage at the national level, enhancing training of health professionals is needed. Training of mental health professionals is warranted to meet the upcoming crisis in geriatric mental health due to the anticipated significant increase in the prevalence of mental disorders (Jeste et al., 1999). In terms of general health professionals, non-physician primary care clinicians and family physicians have been found to have a higher propensity to care for the underserved population compared with primary care physicians in other specialties (Grumbach et al., 2003). However, community health centers face substantial challenges in recruitment of clinical staff.
(especially family physicians), particularly in rural areas (Rosenblatt et al., 2006). This suggests an absolute shortage of family physicians.

If the shortage is relative, then policy interventions to relocate health professionals should be considered. Some evidence has been found that there may be a maldistribution of primary care physicians, especially in areas that are already underserved and are characterized by high numbers of minorities and poor patients (Simon et al., 2007).

Based on the evidence in previous studies, there may be an absolute shortage of health professionals in certain specialties (such as family physicians) and a relative shortage of professionals in other specialties. It is an important policy issue to ensure the equitable distribution of health professionals in underserved areas (Ricketts, 2005) as well as to enhance training of certain health professionals to meet expected increasing demand, thus improving the population’s access to healthcare and quality of life.

5.5 Conclusions and Policy Implications

This dissertation is an empirical exploration of the equity, access and quality of healthcare in the field of behavioral health of the elderly (Aday et al., 1999). Disparities in depression prevalence, access to care, and quality of mental healthcare across racial and ethnic groups are found to remain significant policy concerns at the national level.

The results of this dissertation suggest the opportunity to use the two-item screen in large national surveys to examine racial and ethnic disparities in depression prevalence. This dissertation suggests that expanding the proportion of older people with a USOC should lead to an increase in the detection of depression and a reduction in the
prevalence of affective illness in the population (i.e., “screened depression”). Also, having a USOC is found to be directly associated with lower prevalence of screened depression. Thus, enhancing people’s prevalence of having a USOC (better access to care) may help decrease the prevalence of screened depression and improve quality of life. Furthermore, Hispanics are found to have the highest prevalence of depression based on the SCID diagnosis and the two-item screen and the highest barriers to accessing care in terms of having a USOC. Improving the prevalence of having a USOC among Hispanics may help decrease racial and ethnic disparities in depression prevalence. Racial and ethnic disparities in quality of mental healthcare are found in terms of physician recognition. Among people who screen positive for depression, non-Hispanic blacks are less likely to use antidepressants, while no difference in the diagnosis of depression is found. Further studies are needed to explore how to improve the acceptance and adherence to antidepressant treatment among non-Hispanic blacks to maximize treatment effectiveness.

In conclusion, factors at the individual, clinical and system levels should be considered jointly for potential policy interventions to improve people’s ability to access healthcare, eliminate racial and ethnic disparities in depression prevalence, and improve quality of life among the elderly.