

Minority Status, Cumulative Disadvantage, and Health Consequences

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ABSTRACT. Health disparities between minorities and non-minorities in the United States were explored using secondary data from the 2012 National Survey on Drug Use and Health (n=37,869) and supplemented by interviews with eight knowledgeable professionals. Effects of cumulative disadvantage (resources and social stability) on health status were different for minorities and non-minorities. The findings were supported by Berger's expectation states theory and Cockerham's Health Lifestyle, grounded in Durkheim and Merton's theories of integration and added to the body of literature on minority health inequalities.

INTRODUCTION

Racial and ethnic disparities in the healthy lifestyles and accessibility to quality health care are long standing social issues within the United States. However, in recent years the U.S. has focused on modifying the health care system in an attempt to close this gap. In this context, this paper will examine some of the critical factors that contribute to these racially related health disparities. Pinpointing the sources of these inequalities is essential if meaningful reforms in health care are to be achieved.

LITERATURE REVIEW

A review of some of the past research on health and ethnicity presented below identified a variety of factors that have contributed to racial differences in health and health care. Some factors included in the research reviewed for this analysis were: disadvantages related to socioeconomic status, ethnicity and gender as well as drug usage and religiosity.

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Hierarchies of Social Disadvantage and Health

Most studies of adult health have come to similar conclusions about the “links between hierarchies of social advantage and health” (Braveman, Cubbin, Egerter, Williams, and Pamuk 2010:186). For example, Braveman et al. used national data on child and adult health status to explore socioeconomic and racial and ethnic (Black, White, Hispanic) disparities in conjunction with several physical and mental health issues (life expectancy, chronic disease, coronary heart disease, diabetes, and obesity). Respondents who had low to average levels of educational attainment and income were less healthy than their most educated and wealthiest counterparts. Those who had the lowest educational attainment and the highest rates of poverty were Blacks and Hispanics.

Other researchers have expanded on the health-socioeconomic advantage linkage by identifying intervening health practices of individuals. A 2015 study by Williams and Bradboy Jackson (2005) used national health statistics and found that health practices, stress, and limited access to medical care negatively impacted, net of income and education, the health of minorities in the U.S. Poor dietary practices, limited physical activity, and abuse of alcohol and tobacco increased African Americans’ risk for heart disease and cancer. Additionally, the psychosocial distress associated with persistent discrimination and segregation not only caused health problems, but also restricted African Americans from equal access to medical care.

Taking a different approach, Bamshad (2015) sought to add a genetic racial component to the analyses of poor health. However, this study, like that of Williams and his colleague (2005), found that risk factors that often lead to disease and health complications came not only from ancestry, but also geographical location. In fact, rather than biological variances being the root cause of the race-health discrepancies, environmental settings and contexts proved to be significant players.

If environmental settings are critical for health, it is critical to understand the nature of these environments. Residential segregation and related disadvantages, an example of the environmental context, have been relevant in discussions of health. According to Williams and Collins (2001), who used national data on racial disparities in causes of suicide and death, geographical segregation was a strong determinant of poor health of African Americans. Living in distressed areas that did not have active community facilities, lacked quality food enterprises and medical care, but had an abundance of social stressors ensuing from financial difficulties, violence, and family separation, contributed to poor health of its residents.

Another line of research on the racial and ethnic health disparities explored policies and programmatic avenues for reducing health inequalities and improving overall health. For example, Thomas, Fine, and Ibrahim (2004) recognized the necessity of alleviating social disadvantages. Based on a national forum that measured the annual progress of

eliminating health disparities, their study identified key issues, such as poverty, access to quality health care, and residential hazards, that need to be resolved in order to improve racial health disparities. Similarly, to Brach and Fraserrirector (2000) the most effective route to improving minority health status was to specifically target cultural disadvantages. Based on their review of United States Census data, cultural, competency techniques such as cultural training, adopting traditional healers, offering interpreter services, and hiring minority staff, have the potential to reduce the gap in health conditions between minority and non-minority groups.

An added layer to the health related social disadvantage problem is gender. Leach, Christensen, Mackinnon, Windsor, and Butterworth's (2008) documented higher levels of mental health issues among females than males in a representative community sample. Elaborating on the connections between gender, socio-economic disadvantage, and physical and psychological health, Leach and her colleagues found the following differences between males and females: females participated in fewer physical activities, had higher rates of neuroticism and interpersonal problems, as well as lower levels of education; males were the exact opposite. It was the relative absence of positive physical and psychological mediators that posed greater risks of depression and anxiety for females.

Social stability, another critical component of social disadvantage, has also been associated with health disparities. German and Latkins (2011) measured social stability using data on housing and residential conditions, employment, income, criminal history, and partner relationships. In their interviews with African American women of lower socioeconomic status, German and Latkin found social stability to be strongly associated with good mental health; women who had more socially stable backgrounds were less likely to be at risk of chronic mental illnesses, such as depression.

Social Disadvantage, a Gateway to Drug Use and Poor Health

Social disadvantages associated with racial and gender inequalities have been identified as a gateway into drug use and dependence, and ultimately poor health. For example, Patrick, Wightman, Schoeni, and Schulenberg (2012) compared drug use of young adults aged over 18 years old (from a national sample of families across the United States) who grew up in homes of wealth to those from less advantaged families. Wealthier 18 year olds were more likely, than those from households with fewer economic resources, to use alcohol and marijuana; cigarette use was more common among young adults who grew up in households with few resources. However, non-white young adults and women were less likely to smoke cigarettes; alcohol and marijuana use was more common among white young males (Patrick et al. 2012: 780).

Moreover, drug abuse, particularly of illicit drugs (amphetamines, cannabis, cocaine, and opioids) has also been connected to disease. Degenhardt and Hall (2012), who reviewed national studies of illicit drug use, identified several associated mental and physical health problems. More specifically, cannabis use was linked to mental

disorders such as psychosis. Frequent opioid use was found to not only cause diseases such as HIV and hepatitis C and B, but also to frequently lead to overdoses that end in death. Those with higher socioeconomic status were more likely to use illicit drugs (cannabis, cocaine, and amphetamine) and suffered from associated mental disorders, such as psychosis, and crime.

Religion and Health

In contrast to the environmental risks for poor health, researchers have noted positive associations between health, religion and spirituality. Seybold and Hill (2001) reviewed 139 studies from around the world that had gathered quantified measures of religious commitment (documented by relative relationships to God, participation in religious ceremonies, church attendance, and prayer). They found that religiosity was beneficial to both physical and psychological health. The more religious individuals tended to have fewer encounters with a variety of physical illnesses (cirrhosis and heart disease). Negative associations were also found between religiosity and suicide, crime, drug use, delinquency and health status. One intervening explanation offered for the religiosity-good health connections was healthy lifestyles: those who were more religiously active often adopted healthier habits that ultimately lead to longevity (Seybold and Hill 2001: 22). Besides, social networks accessed through religious involvement created a space for integration, participation and camaraderie that eased health stressors. In short, participating in religious activities allowed the development of an optimistic lifestyle that promoted positivity and hope as a coping mechanism.

Summary and Moving Forward

The researchers reviewed above, while providing valuable insights into the complicated connections between among social, race/ethnic disadvantage and health, acknowledged their narrow research foci. For example, Leach et al. (2008) advised expanding coverage of different types of mental health issues (such as depression, anxiety, and neuroticism) in the exploration of connections between health and socio-economic disadvantages. Braveman et al. (2010) suggested using a sample that was a more realistic reflection of the range of social classes in the U.S. And Williams et al. (2001) recommended widening the scope of the race/ethnic disparities to include not only African Americans, but other minority groups. In doing so, the goal would be to identify more universal sources and patterns of racial and ethnic health disparities. It is in the spirit of these methodological suggestions that this research was conducted.

RESEARCH QUESTION

This paper will build upon current knowledge on the health differences between minority and non-minority groups by re-focusing on the connections between health, risk factors

(such as drug use and criminal history) and stable social environments (socioeconomic status and religiosity). Stated formally, the research question asked: what are the racial disparities in the health consequences of criminal behavior, socioeconomic resources, and stable social environment? Gender, age, and available health care options (Medicare) will be controlled for.

THEORETICAL FRAMEWORK

A set of theoretical concepts, expectation states theory (Berger) and Cockerham's Health Lifestyle, grounded in Durkheim and Merton's theories of integration, set the theoretical stage for this analysis. Integration into society and participation in social institutions are essential for a healthy lifestyle. For example, Emile Durkheim, in his theory of integration, posited that societies establish systems and organizations through which they channel individual's access to social institutions (Durkheim 1951:208-16). The more integrated, the more socially stable one's life is. On the other hand, when individuals are not socially integrated, there is a weakening of social bonds and detachment from larger society. One consequence of social detachment is a deviant and less stable lifestyle (Merton 1975:76).

Social stability as defined by German and Latkin (2011: 21), is "a state of life structure and constancy that functions in a protective way against further hazards and helps to maintain one's connection with societal expectations." Fulfilling social roles, a set of established standards of societal expectations, are critical markers of social stability. For example, being employed, married, having a stable residence, and no criminal history, represents a socially stable life. The sense of instability, uncertainty, and constant change that result from not fulfilling these social roles are expected to impede attempts to gain upward social mobility.

An intervening factor in this social roles-stability model is the power and prestige hierarchy used to anticipate the quality of contribution one might have in society. In Berger's expectation states theory (Correll 2003), society creates hierarchies of status that are used to guide patterns of interaction. These hierarches are developed using a system of evaluation referred to as the "power and prestige structure." The socially constructed identifies certain statuses or characteristics, such as race, age, gender, physical attractiveness, occupation, and patterns of behavior in order to predict one's quality and aptitude to contribute to society. Anticipation of one's ability to fulfill expectations based on statuses is used to determine social relationships and influence, and access to institutional participation (Correll 2003: 30).

Race in American society has been a potent status that has been used to predict performance expectations. For example, widely shared cultural views on race and ethnicity indicate that Americans often presume that the institutional contributions of whites will be of higher quality than that of minority and non-white groups (Kerbo 2012: 328). These unequal expectations have the unfortunate consequences (in a Mertonian

Self-fulfilling prophecy way) of resulting in minorities being limited in their access to resources necessary for fuller participation and stable lifestyles.

One realm in which unequal expectations and access is played out cumulatively is the health-related choices that people make. As articulated in Cockerham's Health Lifestyle model (influenced by Weber and Bourdieu), structural conditions, defined by class circumstances, age/gender/race/ethnicity, collectives or norms and values, and living conditions, play important roles in health. These structural conditions and associated socialization processes cumulatively influence health-related life choices and actions. For example, minorities living in resource poor communities have limited options to lead healthy lifestyles. It is considered normative for the poor to opt for less expensive food even if that means jeopardizing health. As per the expectation states model, the lack of resources would not impact whites as severely as minorities.

In this theoretical context that linked cumulative disadvantages to health, the following hypotheses was posed: Criminal behavior, socio-economic disadvantages, and social instability will be more detrimental to the health of minorities than non-minorities, net of lifecycle status (Medicare access, age, and gender).

METHODS AND DATA SOURCES

This research utilized a mixed methods approach. Survey data from a national study of drugs and health represented the quantitative dimension of the methods. Observations from interviews with eight professionals were used to elaborate on statistical analyses of the survey data.

Quantitative Secondary Survey Data

The hypothesis and associated theories about the health consequences of cumulative disadvantage were tested using secondary data from the 2012 National Survey of Drug Use and Health (NSDUH); the NSDUH was conducted by the United States Department of Health and Human Services (National Survey on Drug Use and Health 2012). In addition to documenting the frequency and amount of drug use within the United States, the survey also had information on the general health of the country's population. Using online questionnaires, a sample of 68,309 randomly selected Americans, from across the United States, completed the survey; the response rate was 86.07% (National Survey on Drug Use and Health 2012).

For the purposes of this study, only a sub-sample of 37,869 adults, 18 to 56 years of age who had complete information on health and other relevant predictors were selected. Minorities in the sample averaged 30 years of age (sd=12.4); non-minorities were older at an average age of 34 (sd= 27.5). There were slightly more females (53.1%) than males (46.9%) in the sample and slightly more female minorities (53.7%)

than female non-minorities (52.7%)¹⁷. These demographics were controlled for in the multivariate analyses to isolate the unique effects of crime, stability, and socioeconomic resources on health.

Primary Qualitative Methodology

To shed professional experiential light on the quantitative findings, eight qualitative interviews were conducted with professionals who had backgrounds in the fields of health and delinquency. These professionals were: An intensive supervision specialist (Interviewee #1), a clinical services administrator at a behavioral and mental health center (Interviewee #2); two physician/medical directors (Interviewees #3 and #7); a Lieutenant in a Sheriff's Office (Interviewee #4); a director of case management at a health plan (Interviewee #5); a police officer (Interviewee #6); and a college sociology professor (Interviewee #8). Interviews were conducted in person or over email using the interview protocol presented in Appendix B.

QUANTITATIVE DATA ANALYSIS AND INSIGHTS FROM QUALITATIVE INTERVIEWS

Three levels of statistical analyses were conducted for this paper: descriptive univariate, bivariate, and multivariate. In keeping with the racial differences in the research design, the analyses were disaggregated for minorities and non-minorities. The goal was to identify potential racial divergences in health because of drug usage, crime, socioeconomic status, and social environment.

Operationalization and Univariate Analyses

Descriptive portraits of the sample using indicators of health and associated predictors were presented below in Tables 1.A-E.

Health Status

The dependent concept, Health Status, was measured through self-reports of the count of the number and types of illnesses, as well as use of mental health treatment during 2012 (the year of the NSDUH survey).

As seen in Table 1.A., the sample was relatively healthy; the mean of the index of illnesses was only 0.42 (sd= 0.8 on a range from 0-10). However, when the respondents did suffer illnesses, the most common were depression (8.1%), anxiety (6.8%), and asthma (6.8%). Racial differences in illness showed that whites had slightly more (=

¹⁷ For more demographic information about the sample, please refer to Appendix A. Table.

0.48) illnesses than non-white (=0.33). Similarly, more whites (17.8%) sought mental health treatment than minorities (8.9%).

**TABLE 1.A. Descriptive Statistics for Health Status
The National Survey for Drug Use and Health, 2012**

Concept	Dimensions	Variables	Values	Minority (n=14,393)	Non-Minority (n=23,476)
Health Status in 2012	Illnesses	Anxiety	1= Yes	3.8%	8.6% ^{***}
		Asthma	1= Yes	7.4%	6.4% ^{***}
		Depression	1= Yes	5.2%	9.9% ^{***}
		Diabetes	1= Yes	4.2%	3.7% ^{***}
		High Blood Pressure	1= Yes	9.4%	11.4% ^{***}
		Index of Illnesses ²	Mean (SD) Min-Max	0.33 (.68) 0-10	0.48 ^{***} (.85) 0-10
	Mental Health Treatment	1=Yes	8.9%	17.8% ^{***}	

^{***} p ≤ .001; ^{**} p ≤ .01; ^{*} p ≤ .05.

¹ Additional illnesses included: Bronchitis, Cirrhosis, Heart Disease, Hepatitis, HIV/AIDS, Lung Cancer, Pancreatitis, Pneumonia, STD, Sinusitis, Sleep Apnea, Stroke, Tinnitus, Tuberculosis and Ulcer(s) (1.1%);

² The index of Illnesses (dependent concept) = Count of the number of the following illnesses they experienced: Anxiety, Asthma, Bronchitis, Cirrhosis, Depression, Diabetes, Heart Disease, Hepatitis, HIV, Lung Cancer, Pancreatitis, Pneumonia, STD, Sinusitis, Sleep Apnea, Stroke, Tinnitus, Tuberculosis. Ulcer.

Criminal Behavior

In this study, criminal behavior was defined by anti-social and illegal behavior including drug usage and criminal actions (two independent concepts).

Drug Use. Drug usage is known to contribute to poor health among adults. Drug use was measured through self-reports of specific drugs used during 2012 and were categorized into hard and soft drugs (Table 1.B). As seen in the drug index, on a scale from 0 to 13 drugs used, whites (= 0.33), reported using more drugs than non-whites (= 0.22).

Some details about the specific drugs involved. The most commonly used narcotics in order of frequency were marijuana/hashish (8.2%), pain relievers (4.3%), hallucinogens (2.5%), tranquilizers (2.2%), and cocaine (2.1%). Minority respondents (8.5%) reported using marijuana/hashish more than non-minority respondents (7.7%). On the other hand, non-minorities were more frequent users of pain relievers (4.7%), hallucinogens (2.7%), tranquilizers (2.6%), and cocaine (2.3%).

TABLE 1.B. Drug Use
The National Survey for Drug Use and Health, 2012

Concepts	Dimensions	Variables	Values	Minority (n=14,393)	Non-Minority (n=23,476)
Drug Use	Hard Drugs in 2012	Cocaine	1=Yes	1.7%	2.3%***
		Hallucinogens	1=Yes	2.0%	2.7%***
		Pain Reliever	1=Yes	3.6%	4.7%***
		Tranquilizers ¹	1=Yes	1.5%	2.6%***
	Soft Drugs in 2012	Marijuana	1=Yes	8.5%***	7.7%***
		Adderall	1=Yes	0.5%	1.1%***
		LSD ²	1=Yes	0.4%	0.9%***
		Index of Drug Use ³	Mean (sd) Min-Max	0.22(.65) 0-13	0.33(.85)*** 0-13

*** p ≤ .001; ** p ≤ .01; * p ≤ .05.

¹Additional hard drugs included: Chew, Crack, Ecstasy, Heroin, PCP, Inhalants, Oxycodone, Stimulants, Sedatives, Snuff, Methamphetamine, Ketamine;

²Additional soft drugs included: Ambien, DMT/AMT, and Salvia;

³The index of Drug Use= Count of how many of the following were used: Chew, cocaine, crack, ecstasy, hallucinogens, heroine, PCP, inhalants, pain relievers, oxycodone, tranquilizers, stimulants, sedatives, snuff, methamphetamine, ketamine, Adderall, ambien, DMT/AMT, LSD, marijuana/hashish, salvia.

Criminal History. Drug use has frequently been associated with criminal activity (the second independent concept used in this study). Criminal history was measured using two indicators: respondents' arrest record as well as the specific crimes that were committed in the year of 2012. Crimes were split into two categories, summary (less severe) and indictable offences (more severe), to assess the intensity of the violation.

As for specific offences, as seen in the index of offences presented in Table 1.C., ethnic minority respondents (=0.07, sd=.38 on a range from 0 to 12) were more likely, even if only slightly, to be arrested anywhere from 1 to 3 or more times than non-minority (=0.05, sd=.33). Among summary offences, driving under the influence was most the commonly reported infraction; Minority (.09%) and non-minority (.09%) reported equal instances of driving under the influence. The second frequently reported offense was the possession and/or the sale of drugs, which was slightly more common among minority (.09%) than non-minority (.07%) groups. Among indictable offences, assault and larceny were the commonly reported violations. A few more minorities (1.0%) reported committing assault than non-minorities (.06%); but about the same proportion of minorities (.05%) and non-minorities (.06%) were convicted of larceny.

On balance, the summative index of criminal history (on a range from 1 to 44) demonstrated that minority respondents (=1.3, sd= 1.4 and non-minority respondents (=1.2, sd=1.1) had similar levels of involvement in crime.

TABLE 1.C. Criminal History
The National Survey for Drug Use and Health, 2012

Concept	Dimensions	Variables	Values	Minority (n=14,393)	Non-Minority (n=23,476)
Criminal History	Arrest Record	# times arrested & booked past 12 months	0= Never	94.5%	96.1% ^{***}
			1= Once	3.9	3.1
			2= Twice	1.0	0.6
			3= 3+ times	0.6	0.3
	Summary Offences past 12 months	DUI Drunkenness Possession/Sale of Drugs Other	1= Yes	0.9%	0.9%
			1= Yes	0.8%	0.7%
			1= Yes	0.9%	0.7% ^{***}
			1= Yes	1.6%	1.1% ^{***}
	Indictable Offences past 12 months	Assault Serious Violent Offense	1= Yes	1.0%	0.6% ^{***}
			1= Yes	0.4%	0.2% ^{***}
		Index of Offences ³	Mean (sd) Min-Max	.07(.38) 0-12	.05(.33) ^{***} 0-11
		Index of Criminal History ⁴	Mean (SD) Min-Max	1.3(1.4) 1-44	1.2(1.1) 1-48

^{***} p ≤ .001; ^{**} p ≤ .01; ^{*} p ≤ .05.

¹ Additional Summary Offenses Included: Drunkenness;

² Additional Indictable Offenses Included: Burglary, Larceny, Fraud, Motor Vehicle Theft, Sex Offense and Robbery;

³ The Index of Offences= Count of number of the following offences: (DUI, Drunkenness, Possession/Sale of Drugs, Other Assault, Burglary, Fraud, Larceny, MV Theft, Probation, Parole, Robbery, Sex Offense, Violent Offense);

⁴ The index of Criminal History= NOBOOKY2 * Index of Offences (Summary + Indictable).

Resources

Resources, in this analysis, were defined as social and economic resources that are used to provide life's necessities and support.

Socioeconomic Status. Socioeconomic status has been found to negatively impact an individual's health condition, along with criminal behavior (Braveman et al. 2010). A racial divide between minority and non-minority socioeconomic standing in this sample was revealed when examining their educational attainment and total family income (Table 1.D). Minorities had relatively lower (=18.4; sd=11.3) socioeconomic standing (on a range of 1 to 44) than non-minorities (=23.4; sd=12.3).

Medicaid was chosen as an additional indicator of socioeconomic status. Minimum eligibility to become a beneficiary of Medicaid is a household income that is 133% (or less) of the federal poverty level (Medicaid.gov). Those who reported having access to Medicaid, 20.9% of minorities and 10.0% of non-minorities, can be inferred to be lower socioeconomic standing. But, here too minorities had fewer socio-economic resources

than non-minorities.

TABLE 1.D. Resources
The National Survey for Drug Use and Health, 2012

Concept	Dimensions	Variables	Values	Minority (n=14,393)	Non-Minority (n=23,476)
SES	Education	Level of education	Mean (SD) Min-Max	8.4(2.1) 1-11	9.0(1.7) 1-11
	Income	Total Family Income	1= Less than \$20 K 2= \$20,000-\$49,999 3= \$50,000-\$74,999 4= \$75,000 or more	32.7% 38.5 12.5 16.3	22.0%*** 32.2*** 16.8*** 29.0***
		Index of SES ¹	Mean (SD) Min-Max	18.4 (11.3) 1-44	23.4*** (12.3) 1-44
	Medicaid Access		1= Yes	20.9%	10.0%

*** p ≤ .001; ** p ≤ .01; * p ≤ .05.

¹ Index of SES = IREDUC2 Education * INCOME Total Family Income (positive correlation between two variables was statistically significant).

Social Stability

A fourth dynamic in health status is the stability of one's social environment. Social environment for this study was measured both through self-reports of the number of times respondents moved during the past five years, as well as how important religion was to them. Frequent moves can prohibit the development of a stable life structure. In this sample (see Table 1.E), more minorities were significantly more mobile (1-2 times in five years) than non-minorities. For example, a plurality (42.2%) of minorities reported moving at least twice; the corresponding percentage for non-minorities was 33.2%. More frequent movers (3 or more times) were equally represented in both groups. The mean on the Index of Social Stability (a scale from 0-6) showed that overall minorities (=1.4; sd= 1.5) and non-minorities (= 1.4; sd= 1.7) had similar rates of moving households.

Religion is another important source of stability (Seybold and Hill 2001). Measured through personal religious beliefs and practices and the religiosity of associated peers, the index of religiosity (a scale from 4 to 18) showed: minorities (=10.9; sd=3.7) were slightly more involved in religious practices and activities than whites (=10.1; sd= 0.4).

TABLE 1.E. Stable Social Environment
The National Survey for Drug Use and Health, 2012

Concepts	Dimension	Variables	Values	Minority (n=14,393)	Non-Minority (n=23,476)
Social Environment	Moves	# times moved past 5 years	1= Once	25.0%	19.9% ^{***}
			2= Twice	17.2	13.3
			3= Three	11.3	10.2
			4= Four	4.9	5.5
			5= Five	2.3	3.4
			6= Six+	3.1	4.0
		# times moved	Mean (SD)	1.4(1.5)	1.4 (1.7)
			Min-Max	0-6	0-6
	Religiosity	My religious beliefs are very important	Strongly Disagree	13.1%	17.7% ^{***}
Disagree			10.7	17.1	
		My religious beliefs influence my decisions	Agree	37.2	35.7
			Strongly Agree	39.0	29.5
	Friends same religious beliefs		Strongly Disagree	13.4%	18.7% ^{***}
			Disagree	16.2	20.1
			Agree	38.3	35.8
			Strongly Agree	32.0	25.4
	How many religious services past 12 months		Strongly Disagree	26.5%	35.0% ^{***}
			Disagree	38.0	40.8
			Agree	24.0	18.5
			Strongly Agree	11.5	5.7
			0 times	38.7%	43.6% ^{***}
			1-2 times	13.0	11.4
	How many religious services past 12 months		3-5 times	11.1	9.3
			6-24 times	14.6	12.5
			25-52 times	9.9	12.6
			52+	12.6	10.6
	Index of Religiosity ¹		Mean (SD)	10.9(3.7)	10.1(0.4) ^{***}
			Min-Max	4-18	4-18

^{***} p ≤ .001; ^{**} p ≤ .01; ^{*} p ≤ .05.

¹ Index of Religiosity= My religious beliefs are very important + My religious beliefs influence my decisions + Friends same religious beliefs + How many religious services past 12 months (positive correlations among index variables were statistically significant).

In summary, among the respondents in this study, non-minorities had more illnesses; more frequently received more mental health treatment and had higher drug usage than minority respondents. Non-minorities were also of lower socioeconomic status than minorities. However, both groups were comparable in terms of social stability (number of times moved and religiosity).

Bivariate Associations

A preliminary assessment of the correlational relationships between health status and well relevant predictors (criminal behavior, resources and social stability) and controls (Medicare access, age and gender) are presented in Appendix C. To outline the racial differences, the analysis was disaggregated by minorities and non-minorities.

Initial correlations revealed several equivalent health effects criminal behavior in minority and non-minority groups: both minorities and non-minorities who used drugs ($r = .07^{***}$), and minorities and non-minorities with criminal histories ($r = .06^{***}$) most commonly used mental health treatment.

However, when variations between racial groups were observed, the strongest correlations were found for non-minorities implying a more privileged status. Some examples: non-minorities ($r = .41^{***}$) with illnesses were substantially more likely to have received mental health treatment than minorities ($r = .33^{***}$) with illnesses. Similarly Non-minorities with access to Medicaid ($r = .12^{***}$) retrieved mental health treatment slightly more often than minorities with access to Medicaid ($r = .08^{***}$).

On the hand, minorities who frequently changed residences in the past five years ($r = .07^{***}$) were more likely to have received mental health treatment than non-minorities who relocated at similar rates. Males, be they non-minorities or minorities, accessed mental health treatment more frequently than females in their race group. But, non-minority males ($r = .13^{***}$) were the most privileged in mental health care access, followed by minority males ($r = .08^{***}$).

In terms of illnesses, both ethnic groups had similar associations with criminal behavior (drug use and criminal history), socioeconomic resources, and social stability. One example: Both non-minorities ($r = -.04^{***}$) and minorities ($r = -.03^{***}$) with lower socioeconomic status had more illnesses than those of higher socioeconomic status. Moreover, non-minorities and minorities with access to Medicaid ($r = .09^{***}$) or Medicare access ($r = .23^{***}$) experienced more illnesses than those without access to Medicaid.

Linear Regression Analysis and Interviewee Insights

In the final analytical step, a two-step linear regression analysis was used to test the hypothesized impacts of criminal behavior, resources, and social stability first illnesses and second on mental health treatment, net of lifecycle status (Medicare, age and sex). Model 1 assessed the impact of the three main predictors on the number of illnesses experienced by respondents. In Model 2, usage of mental health treatment was regressed on illnesses, criminal behavior, resources, and social stability, net of lifecycle status. The results in Table 2 and modelled in Figure 1 were disaggregated by minority and non-minority groups.

Table 2 Regression Analysis of Health Status on Criminal Behavior, Social Stability and Resources
The National Survey on Drug Use and Health 2012 (US DHHS; Beta (β) Coefficients

	Model 1		Model 2	
	Illnesses		Mental Health Treatment	
	Minority	Non-Minority	Minority	Non-Minority
Illnesses ¹	---	---	.33***	.41***
<u>Criminal Behavior</u> ²	.06***	.06***	.06***	.07***
<u>Resources</u>				
Socioeconomic Status ³	NS	-.03***	.03***	.04***
Medicaid Access ⁴	.08***	.08***	.04***	.06***
<u>Social Stability</u>				
# Times Moved ⁵	.07***	.03***	.06***	.02***
Religiosity ⁶	NS	NS	-.03***	NS
<u>Lifecycle Status</u>				
Medicare Access ⁷	.11***	.10***	.03***	NS
Age ⁸	.25***	.22***	-.05***	-.07***
Gender ⁹	.08***	.10***	.05***	.10***
Constant	.04***	.04***	.02***	.02***
Adjusted R ²	.12	.09	.13	.19
DF 1 & 2	8 & 13711	8 & 22806	9 & 13693	9 & 22769

*** p <=.001; ** p <=.01; * p <=.05

¹ Index of Illnesses= Count of Anxiety, Asthma, Bronchitis, Cirrhosis, Depression, Diabetes, Heart Disease, Hepatitis, HIV, Lung Cancer, Pancreatitis, Pneumonia, STD, Sinusitis, Sleep Apnea, Stroke, Tinnitus, Tuberculosis, Ulcer;

² Index of Criminal Behavior= Index of Criminal History + Index of Drug Use;

³ Index of SES (IREduc2 Education * INCOME Total Family Income);

⁴ Medicaid (1= Yes; 0=No);

⁵ # Times Moved (On a scale from 1-6);

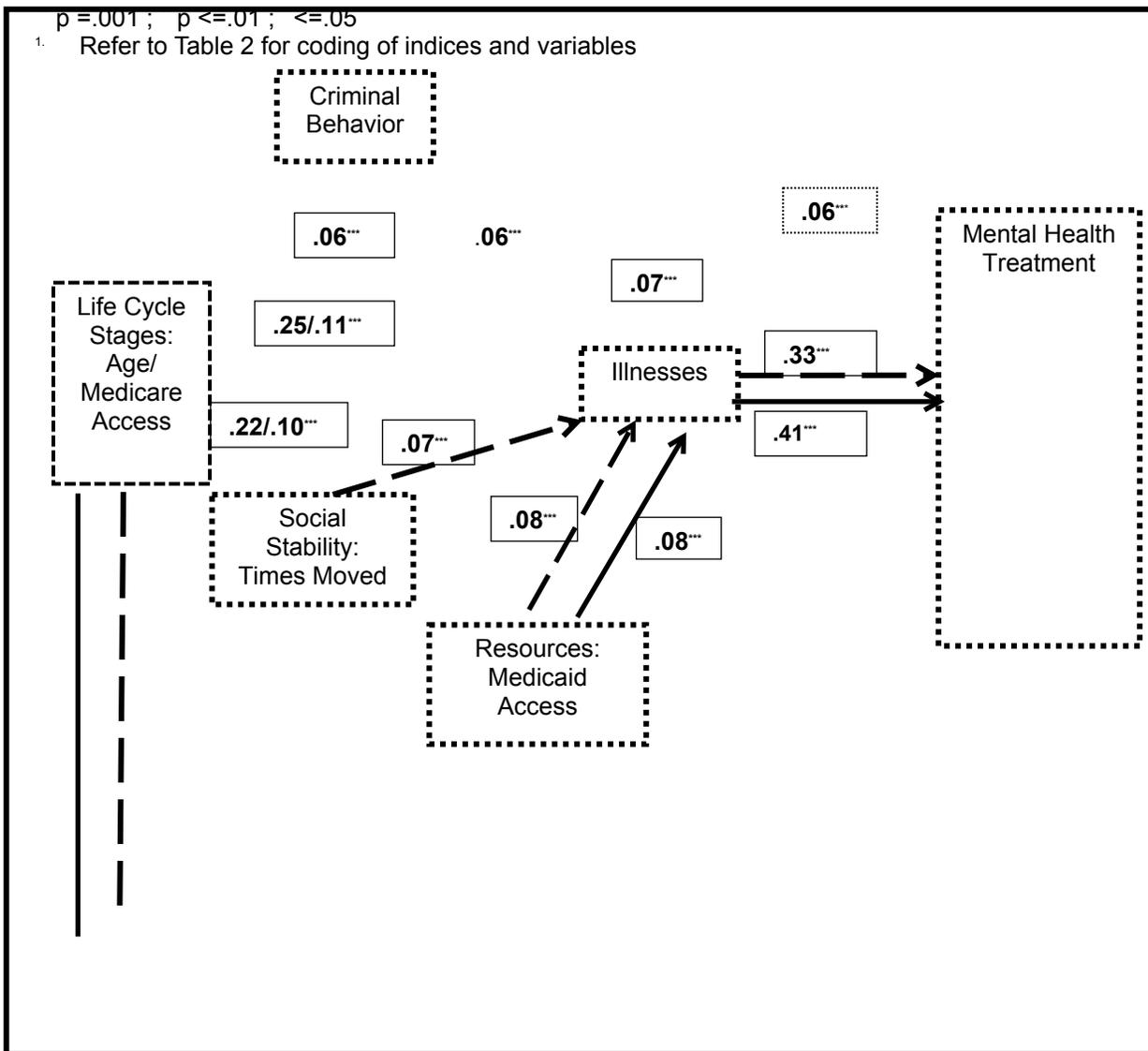
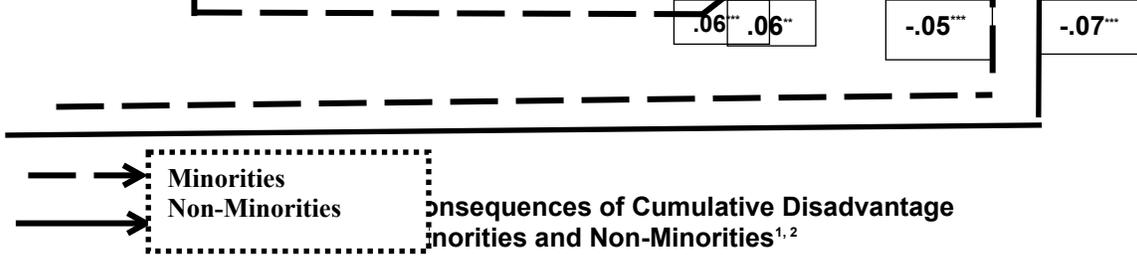
⁶ Index of Religiosity (My religious beliefs are very important; My religious beliefs influence my decisions; Friends same religious beliefs; How many religious services past 12 months);

⁷ Medicare (1= Yes; 0=No);

⁸ Age (Range 18-65);

⁹ Gender (1= Female, 0= Male).

There were some differences, but more similarities, between Whites and non-whites in the predictors that affected illness. Whites with lower socioeconomic status ($\beta = -.03^{***}$) had slightly more illnesses than comparable minorities (not significant). On the other hand, frequent relocation was a somewhat better predictor of illness for minorities ($\beta = .07^{***}$) than for non-minorities ($\beta = .03^{***}$). On the remaining predictors, including criminal history, the illness connections were small and did not vary by majority-minority status.



2. For brevity and clarity, only Beta effects larger than a fifth of the strongest Beta effect are shown. For example, the strongest Beta effect in the illness model was .25***; hence only Beta effects greater than .05 are modelled in Figure 1. For full details on Beta effects, please refer to Table 2.

Insights from the clinical services administrator (Interviewee #2) of a behavioral and mental health center confirmed the importance of both financial and social stability for health. Based on her experience, poverty directly decreased one's ability for health self-care. Because those of lower socioeconomic status are not often able to live healthfully, such as eating nutrient rich foods or attending regular doctor's visits, they tend to be less healthy than those with stronger financial stability. In this study, minorities (=18.4;

sd=11.3) were of lower socioeconomic status than non-minorities (=23.4; sd=12.3). In other words, minority respondents in this sample were less likely living a healthy lifestyle.

Interviewee #2 also shed light on the importance of social connectedness on health status for both minority and non-minority groups: "Those who are more concerned about their overall contribution to the community are less likely to engage in unhealthy activities." Crowder and South (2003) spoke about the importance of community cohesion for health. In exploring the effects of residential segregation, community cohesion was found to vary substantially by race and ethnicity. Racial minority groups were more likely to have closer-knit neighborhoods as a result of common experience with isolation. Therefore, minority social networks are likely to be stronger than those of non-minorities, which might heighten the traumatic experience of being separated from close relationships. This might account for why frequent relocation has a stronger negative impact on health of minority groups.

Explanations for criminal behavior equally jeopardizing the health of minorities and non-minorities were offered by other interviewees. Interviewee #7, a former ER Doctor/Current Medical Director noted that criminal behavior should have the same consequences no matter an individual's ethnicity. If someone of minority status commits a crime or uses a certain drug and someone of non-minority status commits the same crime or uses the same drug, they should both experience the same health consequences from these actions. Furthermore, the police officer (Interviewee #6) added that no single group based on race or ethnicity exhibits more or less criminal behavior. The effect of criminal behavior on the health of minorities versus non-minorities would stem from being a habitual or one time offender. However, in this case, the health implications from the severity of criminal behavior would be independent from the offender's racial status.

Similarly, lifecycle status played a similar role for both minorities and non-minorities in the amount of illnesses experienced by each group. Minorities ($\beta=.11^{***}$) and non-minorities ($\beta=.10^{***}$) with Medicare access generally had more illnesses; Older minorities ($\beta=.25^{***}$) and non-minorities ($\beta=.22^{***}$) were ill more frequently than the younger cohorts. And male minorities ($\beta=.08^{***}$) and male non-minorities ($\beta=.10^{***}$) had more health issues than females.

However, regression effects in Model 2, where mental health treatment was regressed on illnesses and other predictors revealed two poignant ways in which racial disadvantages in health status might be manifested. One, the most powerful difference between minorities and non-minorities was found in the mediating inequalities in the access to health care if they were ill. At one level it is not surprising that the most important predictor of seeking treatment was illness. But, whites who were ill were much more likely to have received mental health treatment ($\beta=.41^{***}$) than non-whites ($\beta=.33^{***}$). The probability of receiving treatment depending on socio-economic resources criminal behavior, or stability did not differ whether minority or non-minority.

A second important racial difference was in the cumulative disadvantages in health care access that minorities faced. The following three examples of cumulative disadvantages in health of minorities are noteworthy. One, not only was social stability more detrimental to the health of non-minorities ($\beta=.07^{***}$) than non-whites ($\beta=.03^{***}$), once they got sick, minorities were more disadvantaged in getting treatment ($\beta=.33^{***}$) than whites ($\beta=.41^{***}$). Second, not only were older minorities more susceptible to illnesses ($\beta=.25^{***}$) than whites ($\beta=.22^{***}$), once they got sick the minorities ($\beta=.33^{***}$) had a harder time than whites ($\beta=.41^{***}$) getting treatment. Third, even when criminal behavior similarly led to more illnesses for both minorities and non-minorities alike ($\beta=.06^{***}$), once they got sick, minorities were less likely to get treatment.

Other professionals interviewed for this research elaborated on the cumulative disadvantages minorities face. They touched on the limitations that often deter individuals from accessing mental health treatment. For example, one of the physicians (Interviewee #3) claimed, “those with fewer social supports and economically disadvantaged, of which a high proportion are minorities, will struggle to access better treatment programs.” Lack of access to a quality care facility and the absence of funds to seek out valuable medical care were other illustrations of the cumulative health disadvantages.

CONCLUDING REMARKS

Empirical Reflections

This study has contributed to existing bodies of research on health status of minorities. Non-minorities had cumulative advantages in receiving health care when they got ill, irrespective of activities (their criminal behavior and social instability) that might have contributed to the illnesses. However, for minorities, the illness probability associated with criminal behavior and social instability were compounded by the difficulty of receiving health care. These cumulative disadvantages in health care access were poignant illustration of the overall racial disparities in health.

Theoretical Reflections

The findings about cumulative racial disadvantages in the health of minorities were grounded in Durkheim and Merton’s theories of integration, expectation states theory, and the health lifestyle model. It was initially proposed that criminal behavior, socio-economic disadvantages, and social instability (risk factors) would be more detrimental to the health of minorities than non-minorities, net of lifecycle status (Medicare access, age, and gender). But, not only are minorities disadvantaged in the illness consequences of risk factors, but their inability to access care compounded their health or lack thereof. Theoretically speaking, integration, expectation states and health life styles cumulatively constraint minorities from receiving health care access much more than whites.

Future Research

On balance, both quantitative and qualitative methods revealed distinct theoretical and empirical insights into the critical issue of cumulative racial health disparities. However, as evidenced by the low adjusted R^2 (between .09 to .19) for both groups, much more needs to be explored and expanded upon in order to provide deeper explanations.

Two main limitations were encountered in this study. One issue was the use of secondary survey data. The study was confined to measures that were not uniquely tailored to the research question. Future research should expand on the measurement of health care beyond mental health treatment and have fuller accounts of the illnesses. The term minority group should be disaggregated to get more detailed comparisons of different minority groups (African American, Latinos, Asians) and immigrants can estimate differential cumulative disadvantages within minority communities. Finally, many interviewees used for this study were hesitant to speak about racial lines; understanding such resistance might also be worthwhile if the health care needs of minorities are to be fully addressed.

APPENDICES

Appendix A. Table

Lifecycle Status
The National Survey for Drug Use and Health, 2012

Concepts	Variables	Values	Minority (n=14,393)	Non-Minority (n=23,476)
Lifecycle Status	Medicare Access	1= Yes	94.4%	89.7%***
	Age	Mean (SD) Min-Max	30.0 (12.4) 18-65	33.6 (27.5)*** 18-65
	Gender	0= Male 1=Female	46.3% 53.7	47.3%*** 52.7

Appendix B Consent Form and Qualitative Interview Protocol

Letter of Consent

Dear ____:

I am a Sociology Senior working on my Research Capstone Paper under the direction of Professor Marilyn Fernandez in the Department of Sociology at Santa Clara University. I am conducting my research on minority status and the health consequences of criminal behavior, social stability and resources.

You were selected for this interview, because of your knowledge of and experience working in the area of health and/or crime.

I am requesting your participation, which will involve responding to questions about factors that influence health status of people who are (or not) involved in crime and drug use. The interview will last about 20 minutes. Your participation in this study is voluntary. You have the right to choose to not participate or to withdraw from the interview at any time. The results of the research study may be presented at SCU's Annual Anthropology/Sociology Undergraduate Research Conference and published (in a Sociology department publication). Pseudonyms will be used in lieu of your name and the name of your organization in the written paper. You will also not be asked (nor recorded) questions about your specific characteristics, such as age, race, sex, religion.

If you have any questions concerning the research study, please call/email me at ____ or Dr. Fernandez at ____

Sincerely,
Leslie Sapon

By signing below you are giving consent to participate in the above study. (If the interviewee was contacted by email or phone, request an electronic message denoting consent).

Signature

Printed Name

Date

If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Committee, through Office of Research Compliance and Integrity at (408) 554-5591.

Interview Protocol

26. What is the Name of the Agency/Organization/Association/Institution where you learned about (and/or worked) with this issue?
27. What is your position in this organization?
28. How long have you been in this position and in this organization?
29. How common is it for adults including young adults (18+):
 - a. To be dependent on drugs?
 - b. How about crime and criminal histories?
 - c. Have you observed differences between people of different race/ethnic groups?
 - d. How about men and women? Could you expand a bit more?
30. In your opinion, what are some reasons that lead people to:
 - a. Drug use, for the first time and become dependent on drugs?
 - b. How about crime and criminal histories?
 - c. Have you seen racial/ethnic differences?
 - d. How about differences between males and females?
31. Based on what you know of the health of those involved in drugs and crime:
 - a. How would you describe the health consequences of drug use and criminal histories? Can you give me some examples?
 - b. Does race/ethnicity matter and if so, how? Can you give some examples?
 - c. Do resources (how much education or income) make a difference in the roles that drug/crime play in health issues? That is, have you seen differences in the health effects of drug use and criminal history among those who have resources and those who don't? Can you give some examples?
 - d. How about religion (and health, drugs, and crime)? Can you give some examples?
 - e. What about age?
32. Is there anything else about the issue of the health consequences of drug use that I should know more about?

Thank you very much for your time. If you wish to see a copy of my final paper, I would be glad to share it with you at the end of the winter quarter. If you have any further questions or comments for me, I can be contacted at _____. Or if you wish to speak to my faculty advisor, Dr. Marilyn Fernandez, she can be reached at _____.

Appendix C

Correlation Matrix Indices of Health Status, Drug Use, Criminal History, SES and Social Environment:
The National Survey on Drug Use and Health 2012, The US Department of Health and Human Services
[Top half above the diagonal of 1 are minorities (n=14,393); bottom half non-minorities/whites (n=23,476)]

	Mental Health Treatment	Illnesses	Drug Use	Criminal History	SES	Medicaid Access	# Times Moved	Religiosity	Medicare Access	Age	Gender
Health Status											
Mental Health Treatment ¹	1	.33***	.07***	.06***	NS	.08***	.07***	-.02***	.07***	.03***	.08***
Illnesses ²	.41***	1	.03***	NS	-.03***	.09***	NS	.06***	.23***	.18***	.10***
Criminal Behavior											
Drug Use ³	.07***	NS	1	.15***	-.01***	NS	.12***	-.14***	-.06***	-.15***	-.07***
Criminal History ⁴	.06***	.03***	.22***	1	-.08***	.05***	.08***	-.04***	NS	-.07***	-.09***
Resources											
SES ⁵	NS	-.04***	-.09***	-.09***	1	-.26***	-.14***	NS	-.08***	.08***	-.04***
Medicaid Access ⁶	.12***	.09***	.02***	.07***	-.26***	1	.06***	NS	.10***	-.07***	.14***
Social Stability											
# Times Moved ⁷	.05***	-.03***	.15***	.09***	-.21***	.12***	1	-.08***	-.09***	-.23***	NS
Religiosity ⁸	NS	.04***	-.19***	-.06***	-.08***	-.06***	-.12***	1	.07***	.16***	.12***
Lifecycle Status											
Medicare ⁹	.03***	.23***	-.11***	-.03***	-.10***	.05***	-.18***	.13***	1	.14***	NS
Age ¹⁰	NS	.24***	-.23***	-.09***	.14***	-.09***	-.36***	.17***	.61***	1	.04***
Gender ¹¹	.13***	.11***	-.10***	-.07***	NS	.10***	.04***	.11***	NS	.02***	1

*** p <=.001; ** p <=.01; * p <=.05

¹ Mental Health Treatment= (Past 12 months; 1=Yes);

² Index of Illnesses= (Anxiety; Asthma; Bronchitis; Cirrhosis; Depression; Diabetes; Heart Disease; Hepatitis; HIV; Lung Cancer; Pancreatitis; Pneumonia; STD; Sinusitis; Sleep Apnea; Stroke; Tinnitus; Tuberculosis; Ulcer);

³ Index of Drug Use= (Chew; cocaine; crack; ecstasy; hallucinogens; heroine; PCP; inhalants; pain relievers; oxycodone; tranquilizers; stimulants; sedatives; snuff; methamphetamine; ketamine; adderall; ambien; DMT/AMT; LSD; marijuana/hashish; salvia);

⁴ Index of Criminal History= (NOBOOKY2 * Index of Offences (Summary + Indictable));

⁵ Index of SES= (IREduc2 Education * INCOME Total Family Income);

⁶ Medicaid Access= (1=Yes; 0=No);

⁷ Index of # Times Moved= (On a scale from 1-6);

⁸ Index of Religiosity= (My religious beliefs are very important; My religious beliefs influence my decisions; Friends same religious beliefs; How many religious services past 12 months);

⁹ Medicare Access= (1= Yes; 0=No)

¹⁰ Age= Range 18-65;

¹¹ Gender (1= Female, 0= Male).

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- Interviewee #7. 2015. Former ER Doctor/Current Medical Director.
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