# Social Capital and Psychological Distress*

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**Social Capital and Psychological Distress**


## Abstract

This study proposes a conceptual model to explain the diverse roles of social capital—resources embedded in social networks—in the social production of health. Using a unique national U.S. sample, I estimated a path analysis model to examine the direct and indirect effects of social capital on psychological distress and its intervening effects on the relationships between other structural antecedents and psychological distress. The results show that social capital is inversely associated with psychological distress, and part of that effect is indirect through subjective social status. Social capital also acts as an intervening mechanism to link seven social factors (age, gender, race/ethnicity, education, occupational prestige, annual family income, and voluntary participation) with psychological distress. This study develops the theory of social capital as network resources and demonstrates the complex functions of social capital as a distinct social determinant of health.



Key words: social capital, network resources, psychological distress

## Social Capital and Psychological Distress

Since Durkheim's pioneering study on social integration and suicide ([1897] 1951), scientists have investigated the associations of diverse aspects of social relationships with various health outcomes (for reviews see House, Landis, and Umberson 1988; Lin and Peek 1999; Pescosolido and Levy 2002; Smith and Christakis 2008). We now face three major challenges in advancing existing knowledge of the health effect of social relationships (Berkman et al. 2000; House et al. 1988; Umberson and Montez 2010): the theoretical distinctions among relationship-based concepts that are used interchangeably, exploration of social mechanisms in the linkage of social relationships to health, and the embeddedness of that linkage within a broader social structure. I argue that social capital conceived as network resources represents a sociological theory that will help us meet these challenges from a social network perspective (Lin 2001).

Over the last two decades social capital has grown into one of the most popular theoretical tools in the social sciences (for reviews see Lin 1999; Portes 1998; Song, Son, and Lin 2010). Three sociologists, Pierre Bourdieu (1986 [1983]), James S. Coleman (1990), and Nan Lin (2001), and one political scientist, Robert D. Putnam (2000), have contributed substantially to the theoretical popularity and development of the concept of social capital. This study does not attempt to resolve current debates on these different approaches to social capital (Song et al. 2010); instead, it focuses on the network-based approach to social capital as network resources (Lin 2001). Despite our deep understanding of its social sources and socioeconomic impacts, the heuristic value of social capital as network resources for health maintenance and promotion has been

underexplored (Cockerham 2007; Pevalin 2003; Song et al. 2010; Webber and Huxley 2004). In this study I refine the theoretical utility of social capital as network resources for health and examine its multiple roles in the social production of psychological distress, one dimension of mental health.

This paper is organized as follows. First, I review the existing literature on the network-based approach to social capital, its theoretical distinction from other relationship-based concepts, and its association with health, and also identify gaps in existing research. I then propose hypotheses on the diverse roles of social capital: its direct effect, its indirect effect through subjective social status, and its intervening effects on the associations of age, gender, race/ethnicity, objective social status, and social integration with health. Next, I test these hypotheses through path analysis of unique data from a national U.S. sample of adults; the outcome is psychological distress. I conclude with theoretical and methodological implications of this study for future research.

## SOCIAL CAPITAL AS NETWORK RESOURCES

As an old axiom states, it is not what you know, but whom you know. Catching the substance of "whom you know," the network-based approach defines social capital as "resources embedded in a social structure that are accessed and/or mobilized in purposive actions" (Lin 2001: 29). It operationalizes social capital as resources available from egos' network members. Three network instruments are available for capturing egos' social capital: the name generator, which asks respondents to list contacts with whom they discuss important matters (Burt 1984; McCallister and Fischer 1978); the position generator, which asks respondents to identify contacts associated with a sample of

occupational positions (Lin and Dumin 1986; Lin, Fu, and Hsung 2001); and the resource generator, which asks respondents about access to a list of social resources through network members (Snijders 1999; Van der Gaag and Snijders 2005). Social capital is measured by socioeconomic positions or valuable assets of named network members. Social capital theory distinguishes social capital from its sources and returns (Lin 2000, 2001). Social capital depends on structural sources such as previous social positions and social roles, both ascribed and achieved. It also generates instrumental (e.g., wealth, power, and reputation) and expressive returns (e.g., health and life satisfaction).

The network-based approach conceptualizes social capital narrowly and strictly as resources of network members, and conceives it as a relational stratifier from a conflict perspective. Social capital thus framed and operationalized enables us to distinguish it from other relationship-based concepts that tend to be used interchangeably without discrimination—social cohesion, social integration, and social support—from a social network perspective, and to understand their causal relationships (Song and Lin 2009; Song et al. 2010; Song, Son, and Lin 2011). In brief, social cohesion reflects norms of trust and reciprocity among network members (Kawachi and Berkman 2000); social integration refers to involvement in social roles, networks, and activities (Brissette, Cohen, and Seeman 2000); and social support represents various forms of aid individuals receive or perceive from their network members such as emotional support (e.g., liking, love, and care), instrumental support (e.g., goods and services) and informational support (e.g., knowledge and skills) (Berkman 1984; House 1981). In contrast, social capital as network resources uniquely captures socioeconomic assets that network members

actually possess. In this study the available data allow me to investigate whether social capital links social integration to health.

A substantial body of empirical research has systematically examined and verified the theory of social capital across cultures and societies over the past three decades (for reviews see Marsden and Gorman 2001; Lin 1999; Portes 1998). Social capital varies with diverse social factors, such as gender, race/ethnicity, family origin, prior achieved socioeconomic status, marital status, parental status, and voluntary participation (Campbell 1988; Erickson 2004; Lin and Dumin 1986; Lin 2001; Lin et al. 2001; Lin, Ao, and Song 2009; Song 2008; Song and Lin 2008). Social capital also advances objective socioeconomic status attainment and subjective class identification (Campbell, Marsden, and Hurlbert 1986; De Graaf and Flap 1988; Lai, Lin, and Leung 1998; Lin and Ao 2008; Lin, Ensel, and Vaughn 1981; Lin, Vaughn, and Ensel 1981; Marsden and Hurlbert 1988; Song 2006; Wegener 1991).

Despite this vast literature on social capital's social determinants and instrumental returns, theoretical and empirical attention to health returns to social capital has been incomplete. Four quantitative studies are available, three of which are cross-sectional. One U.S. study (Acock and Hurlbert 1993) reports that social capital—the mean educational level of egos' network members identified through a name generator—is positively associated with life satisfaction and negatively related to anomie. A study in the United Kingdom (Webber and Huxley 2007) finds that social capital—the access to domestic resources, expert advice, personal skills, and problem-solving resources from network members measured through the resource generator—is negatively associated with the incidence of common mental disorders. The third study (Song and Lin 2009)

analyzes data from Taiwan, and shows that social capital—a latent factor derived from three observed characteristics of network members' occupational positions (i.e., the total number of occupations in which respondents identify one network member, the highest prestige score of accessed occupations, and the difference between the highest and lowest prestige scores of accessed occupations) measured through the position generator instead of name generators—is negatively associated with psychological distress and positively related to self-reported health net of social support and personal capital. An additional important finding is that the negative impact of social capital on psychological distress is greater for those with less education. Finally, one longitudinal U.S. study (Christakis and Fowler 2008) demonstrates that individuals are more likely to quit smoking if their friends with more education stop smoking, implying that social capital indicated by friends' education enhances smoking cessation.

In sum, there is a scarcity of research on the role of social capital in the social dynamics of disease and illness in spite of its potential health implications. Also, despite its significant associations with multiple social antecedents of health, it is not clear why and how social capital interplays with other social causes to influence health. Next, I propose hypotheses on the direct and indirect health impacts of social capital and its intervening effects on the relationships between other structural determinants and health.

## SOCIAL CAPITAL AND HEALTH

Drawing on the previous literature on social causes and returns of social capital as network resources, I hypothesize that social capital plays three roles in the social production of health as shown in Figure 1: direct effect on health (path a), indirect effect

on health (path b), and intervening effect on the relationships between other social factors and health (path c).

Insert Figure 1 about here

*Direct effect*. Social capital shapes health directly as a unique resource locator at the relational level. It supplements personal capital, one major resource locator at the individual level. Personal capital refers to resources under the control of individuals themselves, primarily indicated by their socioeconomic status. Social capital is the personal capital of individuals' network members. Most actors' personal capital, however, is not sufficient for them to maintain and promote health. Social capital represents resources available from social networks that are nonredundant with personal capital at the individual level. It influences health through diverse mechanisms. First, the five mechanisms linking social capital to instrumental purposive actions apply to health outcomes (Erickson 2003; Song and Lin 2009; Song et al. 2010). Social capital protects health through 1) influencing macrolevel health policy decision-making, microlevel sense of control, and microlevel access to health resources, 2) providing valuable health-related informational support, 3) acting as social credentials in accessing health resources, 4) reinforcing psychological resources such as self-esteem, and 5) supplying emotional support. Five additional mechanisms also link social capital to health. Social capital maintains and strengthens health through 6) delivering health-related material support, 7) encouraging engagement in healthy norms and behaviors (Christakis and Fowler 2008), 8) decreasing exposure to stressors such as involuntary job disruptions, 9) increasing the

use of quality health services, such as strengthening access to health care and insurance, and 10) reinforcing subjective social status. A qualitative study, for example, exemplifies three of these pathways through which social capital determines health: influence on access to health resources, social credentials, and improved quality health care. "Marie Jones, a 50-year-old church member, described a time when she was hospitalized and near death from an IUD infection. She told the nurses that her ex-husband, a physician, would be calling to consult, but the nurses thought she was hallucinating, not believing that Sister Jones, a black woman, could be married to a doctor. Her care changed dramatically when her ex-husband, a physician, advocated for her" (Abrums 2000: 101).

H1: Social capital has a direct positive effect on health.

*Indirect effect*. Social capital affects health status indirectly through multiple pathways as explicated earlier. Available data allow me to test only one of these ten proposed mechanisms that link social capital to health: subjective social status. Subjective social status is a psychological determinant of health. It exerts direct positive effects on various physical and mental health outcomes net of objective social status through diverse possible pathways, including tempering relative deprivation and status anxiety (Schnittker and McLeod 2005). Social capital directly enhances subjective social status (Hodge and Treiman 1968; Song 2006). The higher the occupational positions that their network members possess, the higher the social class that individuals identify themselves with.

H2: Subjective social status links social capital with health.

*Intervening effects on the relationships between other social factors and health*. Social capital is an endogenous social factor. It acts as a linking mechanism between its social antecedents and health. Due to the limits of available data, this study considers only three groups of social precursors of social capital: three demographic factors (age, gender, and race/ethnicity), three indicators of objective social status (education, occupational prestige, and annual family income), and two indicators of social integration (marital status and voluntary participation). The cumulative advantage theory from the life course perspective argues that individuals accumulate valuable resources over time, which produce, reproduce, and increase various forms of social inequality (Dannefer 2003; O'Rand 2001). To extend this theory to adults' access to social capital, I speculate that over the course of adulthood individuals are able to develop more social skills, take part in more social interaction, establish more new ties, and maintain more old ties. Consequently individuals accumulate more social capital from expanding social networks over their adult life course.

H3: Social capital links age with health as a positive function of age.

The distribution of social capital differs across gender and racial/ethnic groups due to structural constraints such as unequal contact opportunity structures and the principle of homophily (Campbell 1988; Erickson 2004; Lin 2000). Because of structural

forces such as occupational segregation, disadvantaged social groups such as women and minorities not only possess lower social positions and fewer resources than advantaged social groups such as men and whites, but also have fewer opportunities of encountering high-status individuals in their daily social interactions. Also, as the homophily principle predicts, individuals tend to interact with others like themselves. Women and minorities are more likely to interact with people in the same gender and racial/ethnic groups; they are therefore disadvantaged in reaching contacts of high status.

H4: Social capital links gender with health as a negative function of being female.

H5: Social capital links race/ethnicity to health as a positive function of being white (versus being black or Latino).

Objective social status is convertible to social capital (Bourdieu 1986 [1983]; Lin 2001). There are three mechanisms for the conversion. First, the collection of social capital involves investment of various resources in social networking. Individuals with higher objective social status possess more personal capital, are more able to afford such investments, and are more likely to succeed in attaining social capital. Also, individuals with higher objective social status have greater ability to attract social contacts. People perceive high-status individuals as possessing more valuable resources (Thye 2000), and prefer to interact closely with those of higher status than those of comparable status (Laumann and Senter 1976; Thye 2000). Furthermore, as the principle of homophily predicts, individuals with higher achieved positions tend to socialize with others with similar achievements.

H6: Social capital links objective social status with health as a positive function of objective social status.

Finally, social capital is a function of another network-based factor, social integration (Erickson 2004; Lin and Ao 2008; Song and Lin 2008, 2009). As explicated earlier, social integration determines opportunity structures for access to social capital. A higher degree of social integration increases the probability of finding and recruiting more ties, enlarging networks, maintaining existing social relationships, and increasing network resources.

H7: Social capital links social integration to health as a positive function of social integration.

## DATA AND METHODS

### *Data*

Data were drawn from the research project "Social Capital: Its Origins and Consequences" (for a detailed survey procedure, see Lin and Ao 2008). A random-digit dialing telephone survey was conducted from November 2004 to April 2005 from a U.S. national sample of adults ages twenty-one to sixty-four, currently or previously employed. During the survey process when it became clear that the response rates from minorities (especially African Americans and Latinos) were lower than that from whites, an additional sampling criterion was imposed in order to seek out qualified African Americans and Latinos to approximate the census distribution. A dummy variable, quota,

was created to identify respondents sampled after the recruitment change (value=1). All analyses in this study controlled for this variable, and found that the potential bias due to such a sampling modification was not significant. The sample consists of 3000 respondents, a response rate of 43 percent which is comparable to other recent national RDD surveys (Groves et al. 2004; McDonald and Mair 2010). The listwise deletion of cases with missing values on the variables of interest would incur a loss of 19 percent of the total sample. I used a multiple imputation method to correct missing-data bias. I imputed missing values in exogenous variables based on ten imputations using one Stata user-written program, Ice (Royston 2005). Each of these ten imputed data sets included 2,857 respondents. Table 1 shows the summary of sample characteristics averaged over these ten imputed data sets.

Insert Table 1 about here

***Endogenous Variables***

*Psychological distress* was measured by thirteen items from the CES-D scale (Radloff 1977). Each respondent was asked, "Please tell me how often you have felt this way during the past week." The thirteen items were: "I did not feel like eating; my appetite was poor," "I felt like everything I did was an effort," "My sleep was restless," "I felt depressed," "I felt lonely," "People are unfriendly," "I felt sad," "I could not get going," "I was bothered by things that usually do not bother me," "I felt I could not shake off the blues even with the help of my family/friends," "I felt fearful," "I had crying spells," and " I felt that people disliked me." These indicators were rated on a four-point scale (0=

rarely or none of the time: less than 1 day in the past week; 1=some or little of the time: 1-2 days in the past week; 2=occasionally or moderate amount of time: 3-4 days in the past week; 3=most or all of the time: 5-7 days in the past week). The summed total score ranged from 0 to 39, with higher values indicating higher levels of psychological distress. Its distribution was rightly skewed. I applied a logarithmic transformation to normalize this variable.

*Social capital* was measured using the position generator (Lin and Dumin 1986; Lin et al. 2001). This instrument samples and assesses occupational prestige of one's social contacts. Each respondent was asked, "Next, I am going to ask some general questions about jobs some people you know may **now** have. These people include your relatives, friends, and acquaintances (acquaintances are people who know each other by face and name). If there are several people you know who have that kind of job, please tell me the one that occurs to you first." As Table 2 shows, a list of twenty-two occupations representing systematic sampled positions in the hierarchical occupational structure of the United States was presented to respondents (Lin and Dumin 1986; Lin and Ao 2008; U.S. Census Bureau 2003). I used the 1989 NORC/GSS Occupational Prestige scores to code the prestige of each job (Nakao and Treas 1990). The occupational prestige scores for the listed jobs range from 22 (janitor) to 75 (lawyer). I used one traditional social capital index: average accessed prestige (Campbell et al. 1986). It equaled the summed prestige scores of identified occupations divided by the total number of accessed occupations. Theoretically, this index estimates the best resources embedded in social networks and the average quality of social capital; statistically it has the advantage of a less-skewed distribution (Van der Gaag et al. 2008).

Insert Table 2 about here

*Subjective social status* was indicated by self-reported class, an ordinal variable. Each respondent was asked, "If the society is divided into upper class, upper-middle class, middle class, middle-lower class, and lower class, which one do you think you belong to?" Possible responses were (1) Upper class, (2) Upper-middle class, (3) Middle class, (4) Middle-lower class, and (5) Lower class. I reversed the order of these five responses so that the higher the score, the higher the respondent's subjective social status.

***Exogenous Variables***

*Demographic factors* included three variables: age, gender (1= female, 0= male), and race/ethnicity (1= white, 2= black, 3= Latino, and 4= other race/ethnicity). I created a dummy variable for each racial/ethnic category, and used white as the reference group. *Objective social status* had three socioeconomic indicators: education, occupational prestige, and annual family income. Education was a continuous variable indicated by years of schooling. Occupational prestige of the current or the last job was a continuous variable, coded through the 1989 NORC/GSS Occupational Prestige scores (Nakao and Treas 1990). Annual family income had twenty-eight ordinal ranges. I calculated medians of all ranges, and took their square roots for a normal distribution of income as the ladder of power transformations suggested (Tukey 1977). *Social integration* had two dummy indicators: marital status (1= married, 0= not married), and voluntary participation (1= memberships in voluntary organizations such as political parties; labor unions; religious groups; leisure, sports, or culture groups; professional organizations; charities;

neighborhood organizations; school and PTA; ethnic or civil rights organizations, 0= no memberships in these voluntary organizations).

***Analytic Strategy***

I examined social capital's diverse roles through estimating a path analysis model using the Mplus program (Muthén and Muthén: 1998-2007). This model included three equations respectively for three endogenous variables: social capital ($Y_1$), subjective social status ($Y_2$), and psychological distress ($Y_3$). The first equation was an OLS regression of social capital on all exogenous variables, including demographic variables ($X_1$) (i.e., age, gender, race/ethnicity, and quota), objective social status ($X_2$) (i.e., education, occupational prestige, and annual family income), and social integration ($X_3$) (i.e., marital status and voluntary participation) (see Equation 1). The second equation was an ordinal logistic regression of subjective social status on social capital, and all exogenous variables (see Equation 2). The third equation was an OLS regression of psychological distress on social capital, subjective social status, and all exogenous variables (see Equation 3). Parameter estimates were averaged across these ten imputed data sets.

$$Y_1 = f(X_1 + X_2 + X_3) \quad (1)$$

$$Y_2 = f(X_1 + X_2 + X_3 + Y_1) \quad (2)$$

$$Y_3 = f(X_1 + X_2 + X_3 + Y_1 + Y_2) \quad (3)$$

I also used multiple approaches to test the hypothesized intervening effect of subjective social status on the association between social capital and psychological distress and that of social capital on the relationships between exogenous variables and psychological distress. I employed two approaches in Mplus (i.e., the Sobel test and the bootstrapping method) and one approach in Stata (i.e., the Sobel-Goodman test) to evaluate intervening pathways (Bollen 1990; Ender 2010; Goodman 1960; Sobel 1982).

## RESULTS

I estimated a path analysis model to examine the multiple roles of social capital. Table 3 reports the raw parameter estimates. Figure 2 shows standardized parameter estimates (fully standardized parameter estimates for continuous variables and Y-standardized parameter estimates for non-continuous variables) of only significant paths.

Insert Table 3 about here

Insert Figure 2 about here

### *Direct Effect*

According with the direct-effect hypothesis, social capital exerted an independent negative effect (-.014) on psychological distress net of all the exogenous variables. Also consistent with previous studies, Table 3 shows that women (.123) had higher levels of psychological distress than men; older adults (-.005), Latinos (-.141), those with higher annual family income (-.001), married persons (-.196), and those with higher subjective social status (-.087) reported lower levels of psychological distress than younger adults,

whites, those with lower annual family income, nonmarried persons, and those with lower subjective social status. Using the standardized coefficients (see Figure 2), I compared the magnitudes of these significant coefficients. The effect of social capital (-.094) was greater than the effects of age (-.053) and annual family income (-.086), but weaker than those of marital status (-.202), gender (.126), being Latino versus being white (-.144), and subjective social status (-127).

***Indirect Effect***

As Table 3 shows, social capital was positively associated with subjective social status (.013), and subjective social status in turn was negatively related to psychological distress (-.087). I compared the standardized coefficients of these significant explanatory variables for subjective social status (see Figure 2). The effect of social capital (.076) was greater than those of age (.040) and education (.038, $p<.10$), and smaller than those of occupational prestige (.084), but smaller than those of gender (.108), race/ethnicity (being black versus being white: -.125, $p<.10$; being Latino versus being white: -.118), marriage (.083), and annual family income (.385). Results from both the Sobel test and the bootstrapping method in Mplus indicated that the effect of social capital on psychological distress through subjective social status were significant ($p<.01$). Results from the Sobel-Goodman mediation tests in Stata showed that subjective social status mediated a small proportion of the total health effect of social capital (7 percent). These findings supported the indirect-effect hypothesis.

### *Intervening Effects*

As Table 3 shows, six variables—age, gender, education, occupational prestige, annual family income, and voluntary participation—had significant direct effects on social capital, and another two variables—being black versus being white and marital status—exerted marginally significant direct effects on social capital. Older adults (.044), people with more years of education (.285), people with higher-prestige occupations (.031), people with higher annual family income (.004), and people with memberships in voluntary organizations (.837) reported more social capital than younger adults, those with fewer years of education, those with lower-prestige occupations, those with less annual family income, and people who were not members of voluntary associations. Women (-.538), blacks (-.786), and the married (-.437) had less social capital than men, whites, and the unmarried. As the standardized coefficients of these significant explanatory variables for social capital indicate (see Figure 2), education exerted the greatest effect (.151), followed by voluntary participation (.127), being black versus being white (-.122), gender (-.082), age (.071), occupational prestige (.067), marital status (-.067), and annual family income (.047).

As results from both the Sobel test and the bootstrapping method in Mplus indicated, social capital intervened the relationships of six exogenous variables (i.e., age, gender, education, occupational prestige, annual family income, and voluntary participation) to psychological distress significantly ($p<.05$) and that of being black versus being white to psychological distress marginally significantly ($p<.10$). The intervening effect of social capital on the relationship between marital status and psychological distress was not significant.

## CONCLUSION AND DISCUSSION

This study systematically theorizes the multiple roles of social capital as network resources in the social distribution of mental health. Its empirical analyses focus on psychological distress, one mental health outcome. Results from path analysis of data from a recent national survey of U.S. adults show that social capital has a direct negative effect on psychological distress, and part of that effect is indirect through subjective social status. Social capital also acts as an intervening mechanism, and links seven structural antecedents—age, gender, race/ethnicity (being black versus being white), education, occupational prestige, annual family income, and voluntary participation—with psychological distress.

This study extends theoretical work on social capital and mental health in four ways. First, it demonstrates that social capital exerts a direct negative effect on psychological distress, and that its effect size is larger than those of two structural factors including age and annual family income. This suggests that a high-SES network context protects our mental health. Social capital has potential to be viewed as a fundamental cause of health. The theory of fundamental causes of health has four principal elements: such causes are resource locators; they influence multiple health outcomes; their effects come through multiple mechanisms; and their effects are persistent over time even when intervening mechanisms change (Link and Phelan 1995). Personal capital as a resource locator at the individual level has proved to be one fundamental cause. This study reports theoretical and empirical evidence on the direct effect of social capital as a distinctive resource locator at the relational level on psychological distress net of individual capital, and also proposes ten possible mechanisms for the impact of social capital on

psychological distress. In order to explore the potential of social capital as a fundamental cause (Link and Phelan 1995), future studies need to examine whether social capital is persistently associated with various mental health outcomes through different mechanisms over time. This study focuses on psychological distress due to data limitations. However, note that the direct health impact of social capital may be outcome specific. Social capital reflects resources that are potentially available from network members. It may be more directly and strongly associated with mental health than with physical health due to individuals' subjective evaluation of social capital they can access (Song and Lin 2009).

Second, this study theorizes social capital as an indirect social determinant of health through diverse mechanisms, and empirically demonstrates subjective social status as one pathway linking social capital to psychological distress. The more social capital people accumulate, the higher status individuals they identify themselves with and, in turn, the less distressed they feel. Considering the fact that subjective social status explains only 6 percent of the impact of social capital on psychological distress, future studies need to explore other proposed pathways, social support in particular, for a more complete understanding of how social capital protects mental health.

Third, this study embeds social capital within a broader sociological framework of health, and empirically confirms social capital as a mechanism linking other structural factors including age, gender, race/ethnicity, socioeconomic status, and voluntary participation to psychological distress. This study adds to the life course, aging, and mental health literature (Mirowsky and Ross 1992), and indicates that older adults feel less distressed than younger adults partly because they possess more social capital.

Expanding the gender and mental health literature (Mirowsky and Ross 1995), the present study implies that women's persistently higher levels of psychological distress in part reflect their disadvantages in access to social capital. Broadening the literature on race/ethnicity and mental health (Williams and Collins 1995), while this study does not report a significant difference in psychological distress between whites and blacks, it reports marginal evidence that being black versus being white is positively associated with psychological distress indirectly because of blacks' access to less social capital. Extending the literature of objective social status as a fundamental cause of health (Link and Phelan 1995), this study suggests that education, annual family income, and occupational prestige can influence psychological distress indirectly through their translation to social capital while among them only annual family income directly impacts psychological distress. Enriching the social integration and mental health literature (Thoits and Hewitt 2001), this study signifies that voluntary participation is not directly associated with psychological distress, but indirectly through its conversion to social capital. Note that this study finds marginal evidence for an unexpected negative association between marriage and social capital. This may suggest that marriage as a social institution constrains networking activities of the married outside the family. Future research should further assess this speculation empirically. Future studies also need to analyze whether these structural factors further moderate the relationship between social capital and psychological distress in order to achieve a fuller picture of the social production of mental health.

Fourth, this study adds to the social network tradition in medical sociology. This study demonstrates the theoretical utility of social capital in meeting three major

challenges in the social network and health literature (Berkman et al. 2000; House et al. 1988): it emphasizes the distinction of social capital from other relationship-based antecedents of health; it theorizes social capital as a significant social mechanism in the linkage of social relationships to health; and it empirically examines diverse pathways between social capital and other social forces in the production process of psychological distress. This study bridges the research gap addressing whether access to resources is a mechanism through which social networks shape health outcomes (Berkman et al. 2000). Occupation is one central indicator of hierarchical social locations in the stratification literature (Blau and Duncan 1967). Social capital measured through the position generator as the occupational distribution of network members reflects resources available from social networks. My findings here report that network resources have a direct negative association with psychological distress. Furthermore, this study examines the association of social capital with another network-based concept, social integration. Social integration indicated by voluntary participation rather than marriage is related to psychological distress indirectly through its positive association with social capital. Future studies need to comprehensively explore the relationships between social capital and other network-based social antecedents of health.

Beyond the substantive findings, this study has methodological implications for the measurement of social capital. The network instrument, the position generator, can capture social capital as network resources and explain economic well-being across societies (Lin 1999). The present findings suggest that the position generator is suited to capturing information regarding social capital that is negatively associated with psychological distress in the U.S. population. They further indicate that mapping

hierarchical structural positions people's network members occupy is important for mental health research. Note that the position generator was originally developed to capture the relationship between social capital and socioeconomic status attainment (Lin and Dumin 1986), and the data I used were collected in a survey that was primarily designed to study that relationship. Most listed positions in the position generator examined in this study are not directly relevant to the allocation of mental health-related resources. Social capital thus measured may underestimate the quantity and quality of mental health-related resources embedded in social networks. My empirical results may understate the effect of social capital on psychological distress. Revising the position generator in order to be maximally useful for mental health studies will be a challenge for future research.

This study is only a starting point for examining the potential added value of social capital for understanding the social dynamics of psychological distress. Two data limitations should be kept in mind. First, this study is based on cross-sectional data. Variables of interest in this study were all measured at the time of the survey. A process of social selection is possible. Mental distress may prevent individuals from knowing or contacting others with higher social positions. The same causal problem also applies to the associations of social capital with objective social status, social integration, and subjective social status. People with more social capital may be able to achieve higher socioeconomic status; they may have greater chances to find a desired mate and get married; they may be more attractive to or more likely to be recruited by social organizations, or be more willing to participate in voluntary activities, or be more able to afford the cost of social participation; and people who identify with higher class positions

may be more motivated to interact with people with higher social status and accumulate more social capital. A process of social homophily is also possible. The established positive association between social capital and economic status attainment may be spurious if this association does not reflect a social capital effect but rather a homophily effect (i.e., people tend to interact with others with similar characteristics) (Mouw 2006). To extend this argument into health outcomes, the negative relationship between social capital and psychological distress may represent a homophily effect in that people prefer to socialize with those with similar mental health conditions. For purposes of stronger causal inference, future studies should examine the competing arguments of social selection, social causation, and social homophily through collecting and analyzing longitudinal data on social capital, mental health, and network members' mental health.

Second, the data I used are from a national sample of respondents ages twenty-one to sixty-four who were currently or previously employed. Data are not available from the elderly and adults who were never employed. The elderly have fewer opportunities to interact with others due to retirement or physical limitations, and consequently their social capital may decrease over time (Erickson 2004; McDonald and Mair 2010). Individuals without employment histories are likely to possess fewer socioeconomic resources and thus less social capital. For purposes of generalizability, future studies need to collect data from a national sample of respondents of all ages and employment backgrounds in order to examine these issues.

This study represents the first effort to theorize the diverse functions of social capital as network resources in the social production process of mental health, and to further empirically examine these functions with the focus on psychological distress.

Using social capital as the crucial structural integrator, this study contributes to picturing a more complete framework for the social causation of mental health where social factors act in sequence and together to shape the social pattern of psychological distress. Social capital is inherently sociological, with social causes and social consequences. It is one of the most important theoretical contributions from sociologists to the social sciences (Portes 1998). Sociologists will and must play a crucial role in advancing our understanding of the complex roles of social capital in the social organization of mental health.

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Table 1. Summary of Sample Characteristics (N=2,875)

| | Mean or Percent | SD |
|---|---|---|
| Health Outcome | | |
| Psychological Distress | 7.22 | 6.70 |
| Demographic Variables | | |
| Age | 41.40 | 10.51 |
| Gender (1=Female) | 54.18 | |
| Race/Ethnicity | | |
| White | 69.72 | |
| Black | 11.59 | |
| Latino | 12.99 | |
| Other Race/Ethnicity | 5.71 | |
| Quota | 43.19 | |
| Objective Social Status | | |
| Education (Years) | 14.67 | 3.48 |
| Occupational Prestige (Last/Current Job) | 45.65 | 13.40 |
| Annual Family Income | | |
| Less Than $35,000 | 24.70 | |
| $35,000-60,000 | 27.60 | |
| $60,000-90,000 | 24.17 | |
| $90,000 and More | 23.52 | |
| Social Integration | | |
| Marital Status (1=Married) | 64.19 | |
| Voluntary Participation | 74.60 | |
| Subjective Social Status | | |
| Lower Class | 5.74 | |
| Middle-Lower Class | 16.03 | |
| Middle Class | 58.07 | |
| Upper-Middle Class | 17.78 | |
| Upper Class | 2.38 | |

*Note*: I reported the distribution of non-normalized annual family income after dividing it from the original twenty-eight ordinal ranges into four categories based on the raw data (N=2,453).

Table 2. Distribution of Occupational Positions in the Position Generator and Social Capital Index (N=2,875)

| Position (NORC) | Respondent Accessing (Percent) |
|---|---|
| Lawyer (75) | 55.41 |
| Professor (74) | 37.03 |
| CEO (70) | 20.06 |
| Nurse (66) | 70.32 |
| Middle School Teacher (66) | 49.04 |
| Writer (63) | 21.49 |
| Computer Programmer (61) | 48.83 |
| Congressman (61) | 12.04 |
| Policeman (60) | 50.68 |
| Personnel Manager (54) | 33.01 |
| Administrative Assistant (49) | 31.47 |
| Production Manager (47) | 16.91 |
| Bookkeeper (47) | 31.19 |
| Security Guard (42) | 24.61 |
| Farmer (40) | 42.60 |
| Receptionist (39) | 38.78 |
| Hairdresser (36) | 60.03 |
| Operator in a Factory (33) | 25.34 |
| Full-Time Babysitter (29) | 27.48 |
| Taxi Driver (28) | 8.68 |
| Hotel Bellboy (27) | 2.66 |
| Janitor (22) | 28.91 |
| | |
| Social Capital Index | |
| Average Accessed Prestige | |
| Mean | 53.04 |
| S. D. | 6.54 |
| Range of Scores | 22-75 |

*Note*: NORC= the 1989 NORC/GSS Occupational Prestige (Nakao and Treas 1990).

Table 3. Parameter Estimates of the Path Analysis Model of Social Capital, Demographic Variables, Objective Social Status, Social Integration, Subjective Social Status, and Psychological Distress (N=2,875)

| Independent Variables | Dependent Variables | | |
|---|---|---|---|
| | Social Capital | Subjective Social Status | Psychological Distress |
| Demographic Variables | | | |
| Age | .044*** | .004* | -.005** |
| | (.011) | (.002) | (.002) |
| Gender (1=Female) | -.538* | .124** | .123*** |
| | (.244) | (.043) | (.036) |
| Race/Ethnicity (Reference: White) | | | |
| Black | -.786† | -.125† | .061 |
| | (.409) | (.064) | (.059) |
| Latino | -.255 | -.136* | -.141* |
| | (.388) | (.069) | (.058) |
| Other Race/Ethnicity | .438 | -.035 | -.022 |
| | (.463) | (.089) | (.078) |
| Quota | .334 | -.010 | -.010 |
| | (.270) | (.048) | (.040) |
| Objective Social Status | | | |
| Education (Years) | .285*** | .013† | -.009 |
| | (.040) | (.007) | (.006) |
| Occupational Prestige (Last/Current Job) | .031*** | .007*** | -.001 |
| | (.010) | (.002) | (.001) |
| Annual Family Income (Square Root) | .004* | .005*** | -.001*** |
| | (.002) | (.000) | (.000) |
| Social Integration | | | |
| Married | -.437† | .096* | -.196*** |
| | (.260) | (.046) | (.040) |
| Voluntary Participation | .837** | .068 | .056 |
| | (.267) | (.049) | (.042) |
| Social Capital | | .013*** | -.014*** |

| | | | |
|---|---|---|---|
| | | (.003) | (.003) |
| Subjective Social Status | | | -.087*** |
| | | | (.018) |
| Intercept | 44.617*** | -- | 3.188*** |
| | (.801) | | (.175) |
| Cut1 | -- | 1.009*** | -- |
| | | (.194) | |
| Cut2 | -- | 1.933*** | -- |
| | | (.193) | |
| Cut3 | -- | 3.805*** | -- |
| | | (.200) | |
| Cut4 | -- | 5.081*** | -- |
| | | (.202) | |
| $R^2$ | .065 | .245 | .074 |

*Notes*: Numbers in parentheses are standard errors; †$p \leq .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$ (two-tailed test).

Figure 1. The Conceptual Path Analysis Model of Social Capital, Demographic Variables, Objective Social Status, Social Integration, Subjective Social Status, and Health

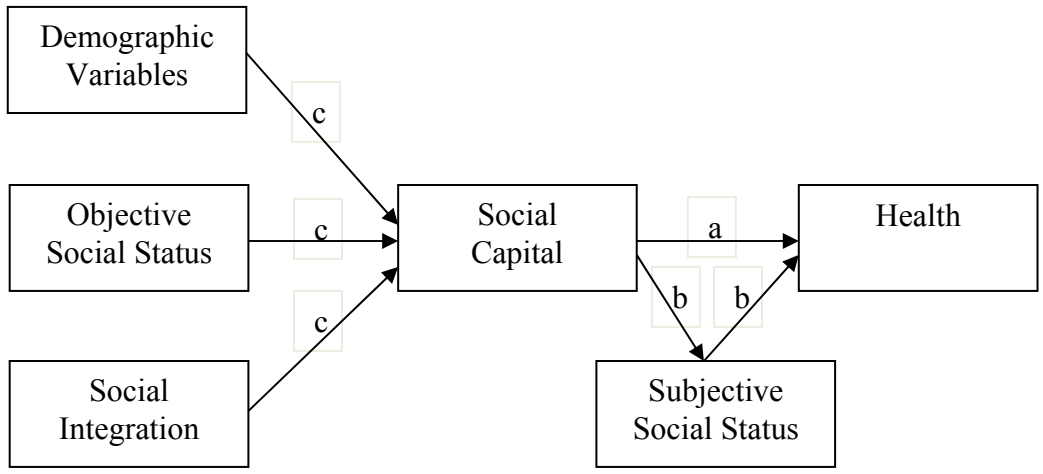
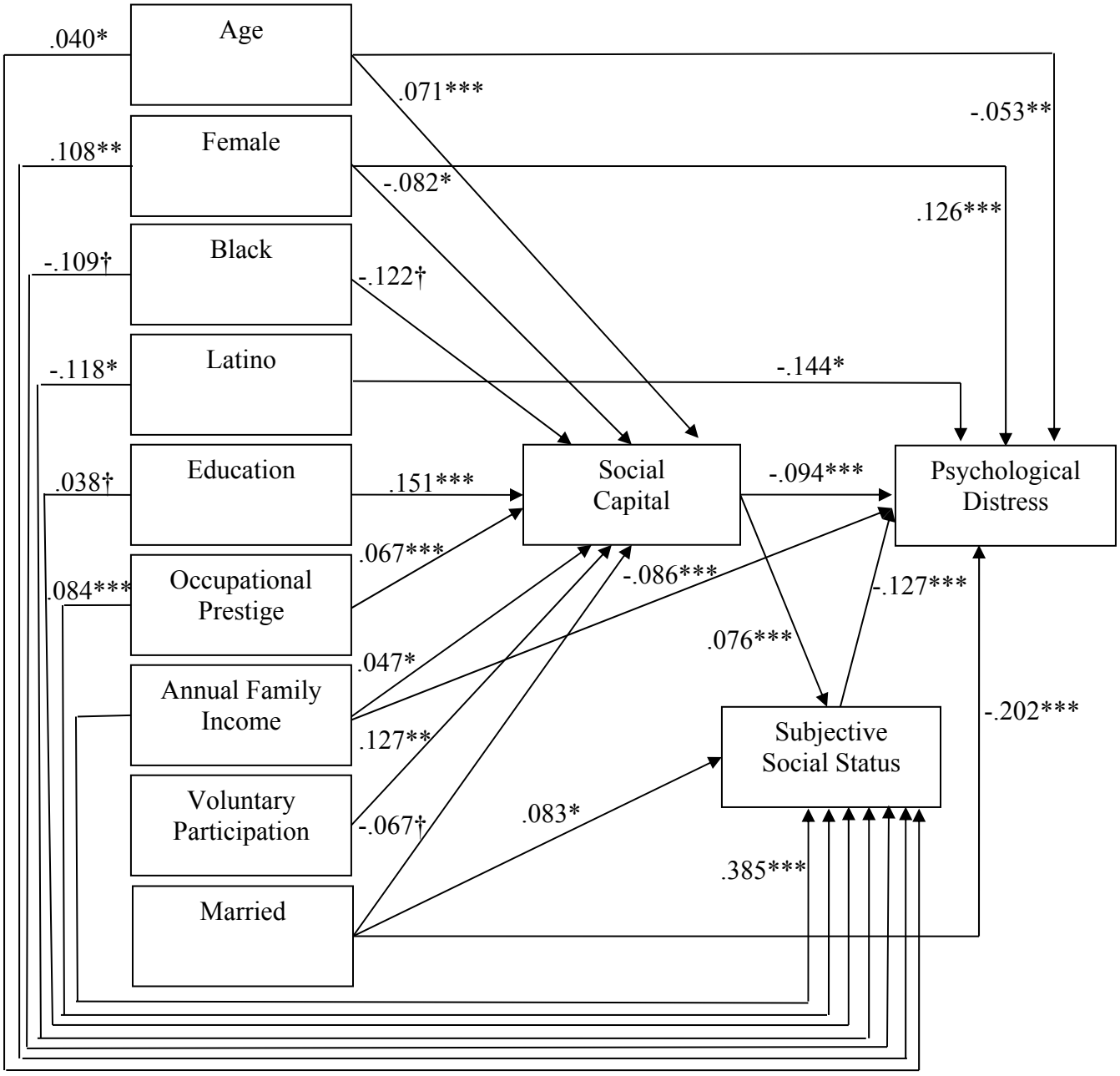


Figure 2. The Path Analysis Model of Social Capital, Demographic Variables, Objective Social Status, Social Integration, Subjective Social Status, and Psychological Distress




*Notes*: Standardized parameter estimates of significant paths (fully standardized parameter estimates for continuous variables and Y-standardized parameter estimates for noncontinuous variables); †$p \leq .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$ (two-tailed test).