

Primary and Secondary Contact and Self-Rated Health

Kaytlin Garrison

Sociology 4308: Quantitative Research Methods

Dr. Seoyoun Kim

A04711412

December 11, 2016

INTRODUCTION

There have been numerous studies over the past decades examining the relationship between one's social embeddedness and their health (Cockerham, 2014; Latkin and Curry, 2003; Meyer, Castro-Schilo, and Aguilar-Gaxiola, 2014; Thoits 2011; Mukerjee, 2013; Fiorillo and Sabatini, 2011). The current body of literature provides multiple explanations of factors linking social interactions and health. Several studies have found that strong social ties can act as a buffer to some mental ailments by balancing the adverse effects of stress (Cockerham, 2014; Thoits, 2011). Conversely, researchers note that the quality of the friendship can determine the effectiveness of the relationship as a buffering mechanism (Fiorillo and Sabatini, 2011). There is also evidence that the frequency of interactions with friends is positively correlated with good health (Fiorillo and Sabatini, 2011). Many terms are used interchangeably to describe social interactions, such as social capital, social ties, social integration, and social support (Thoits, 2011, Cockerham, 2014; Fiorillo and Sabatini, 2011; Berkman, Glass, Brissette, and Seeman 2000; Latkin and Curry 2003; Milner, Krnjacki, and LaMontagne 2016; Ertel et al. 2008). The interpretation of the literature may be clouded by the inconsistencies in terminology, a factor that can directly affect the outcomes of public policies. Using data gathered from individuals in the United States, the purpose of this study is to investigate the empirical association between one's health and their social engagement, which will be conceptualized and defined in the following sections.

LITERATURE REVIEW

Social integration typically refers to the social “embeddedness” of an individual within a community. It is commonly recognized in social research literature as contact with others in setting where face-to-face interactions occur, such as volunteer hours, marital status, frequency of contact with neighbors, and church attendance (Ertel, Glymour, and Berkman 2008; Latkin and Curry 2003; Izenberg and Fullilove 2016). Several studies note that having larger social networks and engagement can buffer against cognitive deterioration and predict lower levels of depression (Ertel et al. 2008; Sani, Herrera, Wakefield, Boroch, and Gulyus 2012). Participating in social interactions with others facilitates social cohesion which, according to Izenberg and Fullilove’s study, is positively correlated with improved mental and physical health (2016). Their study also found an association between the weakening of social ties and increased rates of contracting HIV or being incarcerated (Izenberg and Fullilove 2016). These studies are often conducted in urban neighborhoods due to the easy accessibility of participants for the analysis. A six-year study conducted on adults born before 1948, reported an association between social integration and delayed memory loss (Ertel et al. 2008). The studies collectively suggest that there is an association between health and social embeddedness in neighborhoods (Latkin and Curry 2003; Izenberg and Fullilove 2016). There is also evidence that people’s social environment plays a significant role on health.

The current research available consistently reports a correlation between social integration and health (Berkman, Glass, Brissette, and Seeman 2000; Latkin and Curry 2003; Thoits 2011; Sani et al. 2012; Milner, Krnjacki, and LaMontagne 2016; Ertel et al. 2008). Despite the substantial research on social integration and health, the ways in which social integration is conceptualized varies. The terms used to describe social integration are often used

interchangeably with social interactions, social ties and social support. Social ties can be defined as connections and contact with other individuals (Thoits 2011). This term details similar characteristics to the expression social networks. The variables used to measure social integration are often inquiring about social activities and interactions with people outside the home. Dr. Mukerjee emphasizes a distinction between two kinds of social interactions that take place: personal and impersonal (2013). Personal interactions are those that take place in private settings, such as at a neighbor or relative's house. Impersonal refers to interactions that take place in common areas or within an organization, for instance a church. Social integration is often synonymously exchanged for social engagement in other studies. There are limitations in using only quantifiable social capital as a health predictor, for it lacks consideration for the respondents' subjective experience. Communication technologies and social media platforms have created a whole new sphere where social interactions occur and relationships evolve. Social support is attained through contact with others, which can be in person or online. It is often measured in studies based on the individual's perception of support they are receiving, which has more of an effect on mental health than actually having support (Milner et al. 2016).

METHODS

This following analysis will be utilizing secondary data obtained from the 2014 General Social Survey (GSS), which gathers data on contemporary American society in order to monitor and explain trends and constants regarding attitudes and behaviors. The GSS data set is a nationally representative, in-person survey of individuals who are at least 18 years of age. By providing accessible information covering a range of subjects, it enables social researchers to conduct sophisticated analyses on social integration and health. Because social integration is often defined in terms of contact with others, the variables selected for this study are limited to quantifiable measures of social integration. The three proposed hypothesis will be analyzed based upon a primary sample size of 2538.

The dependent variable, health, was obtained using the General Social Survey (2014) question: “Would you say your own health, in general, is excellent, good, fair, or poor?” The variables that are associated with mental and physical health provided on the database were vague and insufficient for this particular statistical analysis, therefore the variable health was used based upon its prevalence in the literature. The responses were collapsed into a binary variable, which equates to 0 for ‘poor’ and 1 for ‘good’ health. This was a common recode method used in previous studies analyzing self-rated health as the dependent variable.

In order to test whether self-rated health is associated with how often one engages with their primary contacts, three separate variables were recoded and transformed into an index. The variables used were concerned with how often respondents spent time with a neighbor, relative, and friend. These were three individual questions that provided an answer list, consisting of: almost daily, several times a week, several times a month, once a month, several times a year, once a year, never, don’t know, and no answer. I condensed the initial list of frequencies into

‘often’ and ‘rarely,’ where ‘often’ indicates once a month or more and ‘rarely’ denotes several times a year or less. The Primary Contact index is a scale from 0 to 3, where 0 indicates infrequent visits and 3 is very frequent.

The variables that are associated with Secondary Contact are concerned with whether or not the respondent is involved in volunteer work, religious groups, or sports/leisure activities. The survey questions are structured by asking “Does the respondent belong to a church/voluntary association/sports or leisure group” and provides four answer choices: belong and actively participate, belong but don’t participate, used to belong, never belonged. Because this study is concerned with actual contact made within these secondary groups, the variable was recoded dichotomously to denote whether the respondent is ‘active’ or ‘inactive.’ The recoded data was then transformed into an index named Secondary Contact, which will be used as the independent variable in the second hypothesis.

The third hypothesis speculates whether there is an association between health and net contact with others, regardless of it being amongst a primary or secondary group. The third independent variable asked respondents “How many people do you come in contact with in a typical weekday?” The response categories include: 0-4, 5-9, 10-19, 20-49, and 50 or more. Because there were so few respondents who chose “50 or more,” the category was combined with 20-49 to create the category 20 plus.

Once all the recodes were complete, frequencies were used for univariate analysis. Since all the variables are categorical, Chi Square is the appropriate methodology for bivariate analysis. The Chi-square analysis will either confirm or reject the hypothesis of an association between health and social contact.

RESULTS

Table 1 presents the descriptive statistics for the entire sample used for this analysis. The initial sample size is 2538. Of the 1710 people who rated their overall health, 72.2% reported good health and 27.3% poor. The frequency respondents reported interacting with those considered Primary Contacts was transformed into a scale from three binary variables. With consideration for the index scale between 0 and 3, Primary Contact among the valid 1673 cases averaged 1.82. Secondary Contact resulted in a much lower average of 0.77, but the valid sample size was 1207. Net Contact had a sample size of 1253 and an average of 2.53. This variable was ordinal, so 2.53 falls somewhere between the two categories “5-9 persons” and “10-19 persons.”

| Table 1. Descriptive Statistics for Univariate Analysis | | |
|---|-----------|---------|
| Variable | Frequency | Percent |
| <i>Dependent Variable:</i> | | |
| Respondents' self-rated health | 1710 | |
| Poor | 467 | 27.3% |
| Good | 1243 | 72.7% |
| <i>Independent Variables</i> | | |
| Spend evening with relatives | 1673 | |
| Rarely | 499 | 28.8% |
| Often | 1174 | 70.2% |
| Spend evening with neighbors | 1675 | |
| Rarely | 889 | 53.1% |
| Often | 786 | 46.9% |
| Spend evening with friends | 1675 | |
| Rarely | 593 | 35.4% |
| Often | 1082 | 64.6% |
| Primary Contact Index | 1673 | |
| 0.00 | 201 | 12% |
| 1.00 | 388 | 23.2% |
| 2.00 | 600 | 35.9% |
| 3.00 | 484 | 28.9% |
| Involvement in voluntary association | 1230 | |
| Inactive | 960 | 78% |

| | | | |
|--|----------|-----------|-------|
| | Active | 270 | 22% |
| Involvement in recreational activities | | 1245 | |
| | Inactive | 978 | 78.6% |
| | Active | 267 | 21.4% |
| Involvement in religious organization | | 1240 | |
| | Inactive | 816 | 65.8% |
| | Active | 424 | 34.2% |
| Secondary Contact Index | | 1207 | |
| | 0.00 | 581 | 48.1% |
| | 1.00 | 383 | 31.7% |
| | 2.00 | 177 | 14.7% |
| | 3.00 | 66 | 5.5% |
| Net Contact | | 1253 | |
| | 0-4 | 278 | 22.2% |
| | 5-9 | 358 | 28.6% |
| | 10-19 | 286 | 22.8% |
| | 20+ | 331 | 26.4% |
| | Mean | Std. Dev. | |
| Health | 0.73 | 0.45 | |
| Primary Cnt | 1.82 | 0.98 | |
| Secondary Cnt | 0.77 | 0.89 | |
| Net Contact | 1.53 | 1.11 | |

Table 2 presents the relationship between respondents' health and Primary Contact, Secondary Contact, and Net Contact in percentages. Among those who were rarely involved (0.00-1.00) with Primary Contacts, 42.1% reported 'poor' health. As involvement with Primary Contacts increased (2.00-3.00), poor health was still reported among 57.9%. Of those who rarely interacted with Primary Contacts (0.00-1.00), 34.2% reported 'good' health. This is a 7.9% decrease from those who reported having 'poor' health.

Among respondents who were mostly inactive in Secondary Contact (0.00-1.00), 85.4% reported having 'poor' health. Of those who were more active in their community (2.00-3.00), 14.6% reported having 'poor' health. The percentages are distributed similarly for those who

reported ‘good’ health, as well. 79.1% of respondents who were less involved in Secondary Contact (0.00-1.00) reported ‘good’ health, and the remaining 20.9% were more active (2.00-3.00).

The percentage of respondents whose Net Contact ranged from 0 to 4 persons and reporting having ‘poor’ health was 26.4%. Those who had contact with 5 to 9 people in a typical week day reported ‘poor’ health 33.3% of the time. Poor health was reported for 40.2% of respondents who had contact with 10 or more people. With regards to those who interact with 0 to 4 people, 19.7% reported ‘good’ health. Contact ranging from 5 to 9 revealed 27.3% having ‘good’ health. Those who had interactions with 10 or more people reported ‘good’ health 53% of the time.

| Table 2. Bivariate Statistics | | | | | | | |
|---|--------------|--------------|--------------|--------------|-----|---------------------|--------------|
| Primary Contact Index | | | | | | | |
| Health | 0.00 | 1.00 | 2.00 | 3.00 | N | Chi ² | Significance |
| Poor | 32 14.8% | 59 27.3% | 70 32.4% | 55 25.5% | 216 | 5.187 ^a | 0.159 |
| Good | 80 12.7% | 136 21.5% | 215 34% | 201 31.8% | 632 | | |
| Secondary Contact Index | | | | | | | |
| Health | 0.00 | 1.00 | 2.00 | 3.00 | N | Chi ² | Significance |
| Poor | 123 54.4% | 70 21% | 29 12.8% | 4 1.8% | 226 | 10.463 ^b | 0.015 |
| Good | 264 45.9% | 191 33.2% | 81 14.1% | 39 6.8% | 575 | | |
| Net Contact | | | | | | | |
| Health | 0-4 | 5-9 | 10-19 | 20 + | N | Chi ² | Significance |
| Poor | 61 26.4% | 77 33.3% | 40 17.3% | 53 22.9% | 231 | 11.640 ^c | 0.009 |
| Good | 118 19.7% | 164 27.3% | 152 25.3% | 166 27.7% | 600 | | |
| a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 28.53. b. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 12.13. c. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 49.76. | | | | | | | |

A chi-square test of independence was performed to examine whether different social interactions are associated with self-rated health, with the results presented in Table 2. The analysis was conducted at the 0.05 level of significance. The test conducted to compare whether Primary Contact is associated with health found no significant relationship ($p > 0.05$) between the variables. The analysis found an association between Secondary Contact and health ($p < 0.05$) and health and Net Contact ($p < 0.05$). This implies that Secondary Contact and Net Contact is related to health, but it does not tell the strength or direction of the relationship.

Research Questions

RQ1: The percentage of Primary Contact respondents engage in is related to health.

The chi-square test of independence showed no association between the amount of time spent with Primary Contact and one's health. The Pearson Chi-Square was 0.159 (Asymp. Sig), which indicates that there is a significant variation between Primary Contact and health.

RQ2: The percentage of Secondary Contact respondents engage in is related to health.

The chi-square analysis found an association between Secondary Contact and health. This implied that interactions and involvement in community organizations is related to health. The relationship between Secondary Contact and health displayed a Pearson Chi-Square level of 0.015 (Asymp. Sig), indicating a significant association.

RQ3: The amount of Net Contact respondents engage in is related to health.

The relationship between Net Contact and health was found significant when analyzed by Pearson Chi-Square. The Chi-Square level of 0.009 indicates there is a relationship between the two variables.

CONCLUSION

This paper adds to the existing body of research by empirically investigating the association between social engagement and self-rated health. Using the 2014 GSS Data Set, I tested three hypotheses:

- 1) Respondents' self-rated health does not vary by the percentage of time spent with Primary Contacts.
- 2) Respondents' self-rated health does not vary by the percentage of time spent with Secondary Contacts.
- 3) Respondents' self-rated health does not vary by the percentage of time spent with Net Contacts.

The results indicate that there is not an association between health and Primary Contacts, but there is a relationship between the other two variables tested, Secondary Contact and Net Contact. It should be noted that these findings have their limitations. There is the possibility of reverse causality: individuals in poor health are unwillingly limited in their social engagement (Fiorillo and Sabatini, 2011). The available data only allowed for analysis of an association between self-reported health, the frequency of interactions with primary contacts, active involvement with secondary contacts, and overall net contact. More in-depth research should be conducted that accounts for unobservable, individual characteristics that may affect one's health. The quality of relationships is another factor that can influence health outcomes, but was not feasible in this study. Because my results found a significant association between Secondary Contact and Net Contact and health, more sophisticated research should be done as to what specific factors may have influenced this outcome.

References

- Berkman, Lisa F., Thomas Glass, Ian Brissette, and Teresa E. Seeman. 2000. "From Social Integration to Health: Durkheim in the New Millennium." *Social Science & Medicine* 51(6):843-857.
- Ertel, Karen A., Maria Glymour, and Lisa F. Berkman. 2008. "Effects of Social Integration on Preserving Memory Function in a Nationally Representative US Elderly Population." *American Journal Of Public Health* 98(7):1215-1220.
- Fiorillo, Damiano, and Fabio Sabatini. 2011. "Quality and Quantity: The Role of Social Interactions in Self-Reported Individual Health." *Social Science & Medicine* 73: 1644-1652.
- Izenberg, Jacob M., and Mindy Thompson Fullilove. 2016. "Hospitality Invites Sociability, Which Builds Cohesion: a Model for the Role of Main Streets in Population Mental Health." *Journal Of Urban Health* 93(2): 292-311.
- Latkin, Carol A., and Aaron D. Curry. 2003. "Stressful Neighborhoods and Depression: A Prospective Study of the Impact of Neighborhood Disorder". *Journal Of Health And Social Behavior* 44(1): 34-44.
- Milner, A., Krnjacki, L., & LaMontagne, A. D. 2016. "Age and Gender Differences in The Influence of Social Support on Mental Health: A Longitudinal Fixed-Effects Analysis using 13 Annual Waves of the HILDA Cohort." *Public Health*.
- Mukerjee, Swati. 2013. "An Empirical Analysis of the Association Between Social Interaction and Self-Rated Health." *The American Journal of Health Promotion* 27(4): 231-239.

Sani, Fabio, Marina Herrera, Juliet R. H. Wakefield, Olga Boroch, and Csilla Gulyas. 2012.

“Comparing Social Contact and Group Identification as Predictors of Mental Health.”

British Journal Of Social Psychology 51(4): 781-790.

Thoits, Peggy A. 2011. “Mechanisms Linking Social Ties and Support to Physical and Mental

Health.” *The Journal Of Health And Social Behavior* (2): 145-161.

APPENDIX

Statistics

| healthR | | |
|---------|---------|------|
| N | Valid | 1710 |
| | Missing | 828 |
| Mode | | 1.00 |
| Range | | 1.00 |
| Minimum | | .00 |
| Maximum | | 1.00 |

healthR

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | poor | 467 | 18.4 | 27.3 | 27.3 |
| | good | 1243 | 49.0 | 72.7 | 100.0 |
| | Total | 1710 | 67.4 | 100.0 | |
| Missing | System | 828 | 32.6 | | |
| Total | | 2538 | 100.0 | | |

Statistics

| PrimaryContact | | |
|----------------|---------|------|
| N | Valid | 1673 |
| | Missing | 865 |
| Mode | | 2.00 |
| Range | | 3.00 |
| Minimum | | .00 |
| Maximum | | 3.00 |

PrimaryContact

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | .00 | 201 | 7.9 | 12.0 | 12.0 |
| | 1.00 | 388 | 15.3 | 23.2 | 35.2 |
| | 2.00 | 600 | 23.6 | 35.9 | 71.1 |
| | 3.00 | 484 | 19.1 | 28.9 | 100.0 |
| | Total | 1673 | 65.9 | 100.0 | |
| Missing | System | 865 | 34.1 | | |
| Total | | 2538 | 100.0 | | |

Statistics

SecondaryContact

| | | |
|---------|---------|------|
| N | Valid | 1207 |
| | Missing | 1331 |
| Mode | | .00 |
| Range | | 3.00 |
| Minimum | | .00 |
| Maximum | | 3.00 |

SecondaryContact

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | .00 | 581 | 22.9 | 48.1 | 48.1 |
| | 1.00 | 383 | 15.1 | 31.7 | 79.9 |
| | 2.00 | 177 | 7.0 | 14.7 | 94.5 |
| | 3.00 | 66 | 2.6 | 5.5 | 100.0 |
| | Total | 1207 | 47.6 | 100.0 | |
| Missing | System | 1331 | 52.4 | | |
| Total | | 2538 | 100.0 | | |

Statistics

netcnt

| | | |
|---------|---------|------|
| N | Valid | 1253 |
| | Missing | 1285 |
| Mode | | 1.00 |
| Range | | 3.00 |
| Minimum | | .00 |
| Maximum | | 3.00 |

netcnt

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|---------|-----------|---------|---------------|--------------------|
| Valid | 0-4 | 278 | 11.0 | 22.2 | 22.2 |
| | 5-9 | 358 | 14.1 | 28.6 | 50.8 |
| | 10-19 | 286 | 11.3 | 22.8 | 73.6 |
| | 20 plus | 331 | 13.0 | 26.4 | 100.0 |
| | Total | 1253 | 49.4 | 100.0 | |
| Missing | System | 1285 | 50.6 | | |
| Total | | 2538 | 100.0 | | |

healthR * PrimaryContact Crosstabulation

| | | PrimaryContact | | | | | |
|---------|------|------------------|-------|-------|-------|-------|--------|
| | | .00 | 1.00 | 2.00 | 3.00 | | |
| healthR | poor | Count | 32 | 59 | 70 | 55 | 216 |
| | | % within healthR | 14.8% | 27.3% | 32.4% | 25.5% | 100.0% |
| | good | Count | 80 | 136 | 215 | 201 | 632 |
| | | % within healthR | 12.7% | 21.5% | 34.0% | 31.8% | 100.0% |
| Total | | Count | 112 | 195 | 285 | 256 | 848 |
| | | % within healthR | 13.2% | 23.0% | 33.6% | 30.2% | 100.0% |

Chi-Square Tests

| | Value | df | Asymptotic Significance (2-sided) |
|------------------------------|--------------------|----|-----------------------------------|
| Pearson Chi-Square | 5.187 ^a | 3 | .159 |
| Likelihood Ratio | 5.168 | 3 | .160 |
| Linear-by-Linear Association | 4.252 | 1 | .039 |
| N of Valid Cases | 848 | | |

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 28.53.

healthR * SecondaryContact Crosstabulation

| | | SecondaryContact | | | | | |
|---------|------|------------------|-------|-------|-------|------|--------|
| | | .00 | 1.00 | 2.00 | 3.00 | | |
| healthR | poor | Count | 123 | 70 | 29 | 4 | 226 |
| | | % within healthR | 54.4% | 31.0% | 12.8% | 1.8% | 100.0% |
| | good | Count | 264 | 191 | 81 | 39 | 575 |
| | | % within healthR | 45.9% | 33.2% | 14.1% | 6.8% | 100.0% |
| Total | | Count | 387 | 261 | 110 | 43 | 801 |
| | | % within healthR | 48.3% | 32.6% | 13.7% | 5.4% | 100.0% |

Chi-Square Tests

| | Value | df | Asymptotic Significance (2-sided) |
|------------------------------|---------------------|----|-----------------------------------|
| Pearson Chi-Square | 10.463 ^a | 3 | .015 |
| Likelihood Ratio | 12.181 | 3 | .007 |
| Linear-by-Linear Association | 8.155 | 1 | .004 |
| N of Valid Cases | 801 | | |

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 12.13.

healthR * netcnt Crosstabulation

| | | netcnt | | | | | |
|---------|------|------------------|-------|-------|---------|-------|--------|
| | | 0-4 | 5-9 | 10-19 | 20 plus | | |
| healthR | poor | Count | 61 | 77 | 40 | 53 | 231 |
| | | % within healthR | 26.4% | 33.3% | 17.3% | 22.9% | 100.0% |
| | good | Count | 118 | 164 | 152 | 166 | 600 |
| | | % within healthR | 19.7% | 27.3% | 25.3% | 27.7% | 100.0% |
| Total | | Count | 179 | 241 | 192 | 219 | 831 |
| | | % within healthR | 21.5% | 29.0% | 23.1% | 26.4% | 100.0% |

Chi-Square Tests

| | Value | df | Asymptotic Significance (2-sided) |
|------------------------------|---------------------|----|-----------------------------------|
| Pearson Chi-Square | 11.640 ^a | 3 | .009 |
| Likelihood Ratio | 11.762 | 3 | .008 |
| Linear-by-Linear Association | 8.091 | 1 | .004 |
| N of Valid Cases | 831 | | |

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 49.76.