Research Background

Given that the population is aging, an increasing number of people in the society are expected to experience physical strains. The mind and body connection concept tells us that mental health and physical health are related. A sizeable number of studies have demonstrated the association of chronic conditions with mental distress and identified physical health constraint as a critical risk to mental well-being in later life. Building upon this connection, many studies have identified some the factors protecting older adults from the negative mental health outcomes due to functional difficulties. Social support is among the protective factors. However, less is known about the mechanism of how social support might buffer functional difficulties related negative mental health impact among diverse racial/ethnic groups. Considering that different racial/ethnic groups are heterogeneous between each other and variabilities exist within each racial/ethnic group, whether the social support could protect older adults from negative mental health related to functional difficulties in a consistent way is worthy more investigation, which would inform how to design interventions to use social support more effectively to help older adults from diverse racial/ethnic groups to cope negative mental health impact related to functional difficulties.

Research Questions

Using three rounds of data from the National Social Life, Health, and Aging Project (NSHAP), we hope to investigate (1) whether functional difficulties (difficulties in activities of daily living) would contribute to negative mental health outcome (depressive symptoms in our data); (2) whether social support would contribute to positive mental health outcome; (3) whether social support would modify the relationship between functional difficulties and mental health outcome; (4) whether the findings to the aforementioned (1) (2) (3) questions would keep consistent in older adults from diverse racial/ethnic groups.

Structure of Data

Level 1: individuals; Level 2: repeated measurements

Plan of Analysis

We plan to use time-varying model as our modeling strategy. We would use depressive symptoms as the dependent variable and run a set of multivariate regressions including: (1) Model 1: check the relationship between background variables and depressive symptoms; (2) Model 2: Model 1 + functional difficulties + social support; (3) Model 3: Model 2 + functional difficulties × social support; (4) If we find a significant interaction between functional difficulties and social support in Model 3, we would either include a three way interaction term, which is functional difficulties × social support × race/ethnicity in Model 4, or stratify the full sample into subsamples based on race/ethnicity to see if the interaction between functional difficulties and social support stay consistent in stratified subsample. If we do not find a significant interaction between functional difficulties and social support in Model 3, our analysis would end at Model 3.

Variables

The outcome variable **depressive symptoms** in the three rounds of NSHAP data is measured by an existing 11-item short form of the Center for Epidemiologic Studies Depression Scale (CES-D).

Scale: 1 = rarely or none of the time to 4 = most of the time

Cronbach's alpha: 0.80 (round 1), 0.79 (round 2), 0.82 (round3)

Coding: Adding the score of each item together .

The variables we used are deptot1 (round 1), deptot2 (round 2), deptot3 (round 3)

The major independent variable **functional difficulties** in activities of daily living in the three rounds of NSHAP data is measured by the degree of difficulty completing the following ADL activities: (a) walking one block, (b) walking across a room, (c) dressing, including putting on shoes and socks, (d) bathing or showering, (e) eating, such as cutting up food, (f) getting in or out of bed, and (g) using the toilet, including getting up and down.

Scale: 0 = no difficulty to 3 = unable to do

Coding: After checking previous literature on how this scales has been used, we binarized the response to each question as "0 = no difficulty", "1 = have some difficulty", and then added up the value of the response to each question together so the total score can indicate how many difficulties the respondent has in terms of ADL.

Cronbach's alpha: 0.81 (round 1), 0.83 (round 2), 0.83 (round 3)

The variables we used are adltotb1 (round 1), adltotb2 (round 2), adltotb3 (round 3)

The major independent variable **social support** is measured from three dimensions including partner support, family support, and friend support. The questions include (a) How often can you open up to partner if you need to talk about your worries? (b) How often can you rely on partner for help if you have a problem? (c) How often can you open up to members of your family if you need to talk about your worries? (d) How often can you rely on family for help if you have a problem? (e) How often can you open up to your friends if you need to talk about your worries? (f) How often can you rely on friends for help if you have a problem?

Scale: 1 = hardly ever or never to 3 = often

Coding: We found previous studies have added partner support, family support, and friends support together to indicate the total amount of social support. Thus, we added the 6 questions together to indicate total social support.

Cronbach's alpha: 0.64 (round 1), 0.63 (round 2), 0.66 (round 3)

The variables we used are socsuptot1 (round 1), socsuptot2 (round 2), socsuptot3 (round 3)

Covariates:

Age: age1, age2, age3; mean age1 = 69, mean age2 = 73, mean age3 = 68 Since NSHAP recruits new research participants in each round, the mean age is not in a increasing pattern.

Gender: female1, female2, female3; 1 = Female, 0 = Male

Race/Ethnicity: race1, race2, race3; 1= non-Hispanic White, 2 = non-Hispanic, Black, 3 = Hispanic, 4 = Other

Marital Status: marital1, marital2, marital3; 1= Married, 0 = Unmarried

Education level: edulevel1, edulevel2, edulevel3; 1 = >12 years, 0 = <or=12 years

Preliminary Analysis

In our preliminary analysis, we transformed the data from wide format into long format, explored the correlation between major variables, examined the ICC of depressive symptoms over time, and investigated the relationship between depressive symptoms and functional difficulties in regression analysis using time-varying model strategy.