

Social Stress, SES status and Elderly Health

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Extended Abstract:

Researchers in the field of sociology have done a lot on health inequality since 1970s. Meanwhile, the disease spectrum in modern society has undergone fundamental changes. Chronic diseases have replaced epidemic diseases as the main threat to people's health in modern society. And for different disease spectrum, the formation mechanism of health inequality will be different. Therefore, the path of interpretation of health inequalities should be reexamined. In recent years, with the rapid development of interdisciplinary approach, medical research has been taken for reference by sociological researchers. In the field of medical research on chronic diseases, the impact of stress on chronic diseases has long been valued by medical researchers, while sociologists have noticed the relationship between socioeconomic status and social pressure. Therefore, "social pressure" provides us a new perspective to understand and explain health inequalities.

Regarding of this background, this study discusses the impacts of social stress on elderly health inequalities from two aspects by proving two research hypotheses. Research hypothesis 1: The distribution of social pressure in different socioeconomic groups is unequal, social pressure inclines to lower socioeconomic groups. Research Hypothesis 2: Social pressure impacts differently on the health of each socioeconomic status groups, and social pressures impacts more negatively on the health of lower socioeconomic status groups. In addition, the research method of this paper also contributes to the study of "health inequality" by distinguishing two confusing concepts of "health inequality" and "health difference" through the fixed effect model.

The results of this study are presented in two aspects, one is the correlation between social pressure and socioeconomic status, while the other is how differently social pressure impacts on the health status of each socioeconomic status groups.

Figure 1 presents the crosstab of social pressure variable and socioeconomic status variable. It apparently shows that social pressure inclines to the side of lower socioeconomic status group. Additionally, the Pearson correlation coefficient turns out to be " $-0.26(p<0.001)$ ", which means social pressure and socioeconomic status are negatively correlated, and it is stastically significant. The result supports research hypothesis 1, which hypothesizes that the lower socioeconomic status, the greater social pressure, and vice versa.

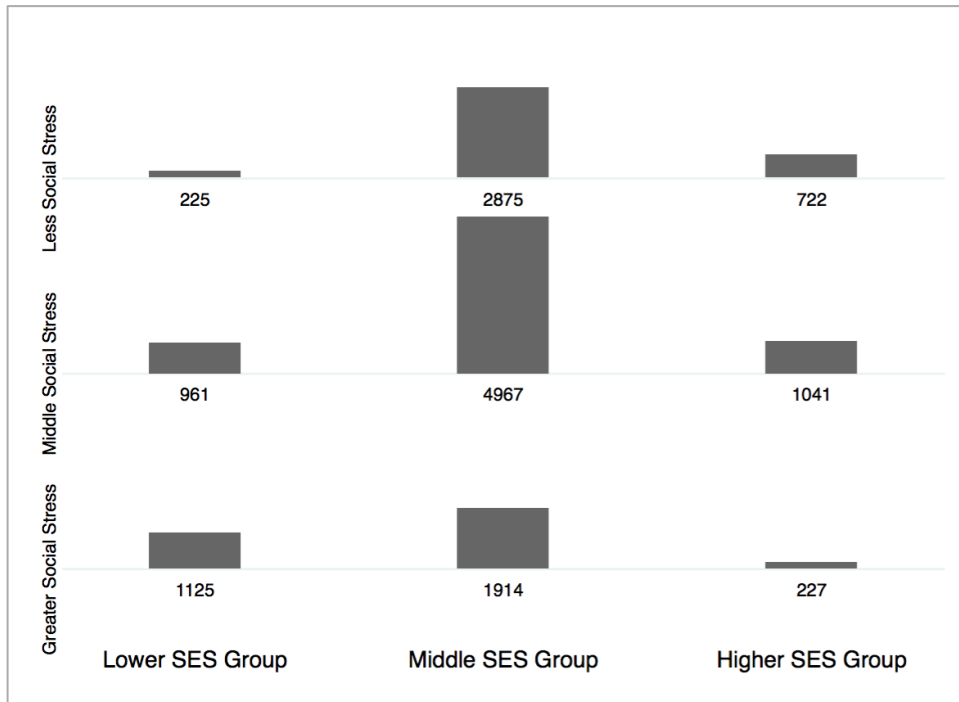


Figure 1. Crosstab of Social Stress Levels and SES Groups (Data Source: CLHLS 2008, N=14057)

Table 1 shows the results of the fixed effect model. This study examined the effects of social stress both on depression and frailty index. Nested models and interaction terms have been applied to examine whether social stress can explain health inequalities caused by socioeconomic status. The dependent variable in model 1 and model 2 is depression level and frailty index, respectively. Within the models, independent variables are included by groups with three steps: Firstly, include socioeconomic status variable only; Secondly, social pressure variables are added; Lastly, complete the whole model with socioeconomic status, social pressure, and their interaction terms, age and its interaction term is also included as control variables.

The results of the fixed effect model can be summarized into three points. Firstly, social pressure has a significant impact on mental health and general health of the elderly. As is shown in the CES-D score model and frailty index model, social stress is statistically significant. Which means the higher the social pressure, the higher the CES-D score and frailty index will be. Previous research mostly focused on the impact of social stress on mental health, and the results of this study complement the impact of social stress on general health. Moreover, social pressure impact more significantly on the general health. Secondly, social pressure can explain the differences in general health status of each socioeconomic groups. By using nested models, we find that socioeconomic status variable is not statistically significant anymore after including the social stress variable (see Model 2-2). Which means the health disparities among different socioeconomic status groups may be explained by social stress. In this sense, social stress can be regarded as a vital factor leading to health inequalities. Lastly, compared with higher socioeconomic status group, social pressure has a greater negative impact on the

general health status of the lower socioeconomic status group. Figure 3 shows social stress impact differently on the general health status among each socioeconomic status groups. And the gap of frailty index among different socioeconomic status groups increases when social pressure increases. Therefore, the result of the fixed effect model responds and supports the hypothesis 2.

Table 1. Results of Fixed Effect Models of Social Stress, SES Status and Health Status.

| | Dependent: CES-D Score | | | Dependent: Frailty Index | | |
|-------------------------------|------------------------|---------------------|---------------------|--------------------------|---------------------|----------------------|
| | Model 1-1 | model1-2 | Model1-3 | Model 2-1 | Model 2-2 | Model2-3 |
| SES Status | -0.04*** (-12.98) | -0.03*** (-9.98) | -0.03*** (-5.70) | -0.01** (-2.89) | -0.01 (-1.44) | -0.01* (-2.01) |
| Social Stress | | 0.02*** (-6.15) | 0.03** (3.24) | | 0.04*** (-11.13) | 0.05*** (-4.62) |
| Age | | | 0.001 (1.01) | | | 0.01*** (-18.38) |
| SES Status* Social Stress | | | -0.002 (-1.36) | | | -0.13*** (-9.14) |
| SES Status* Social Stress*age | | | — | | | 0.001*** (-9.25) |
| Cons | 0.57*** (-98.04) | 0.54*** (-69.79) | 0.49*** (-13.15) | 0.23*** (-29.41) | 0.19*** (-17.48) | -0.67*** (-14.46) |
| N | 21917 | 18385 | 18385 | 20936 | 17552 | 17552 |

* p<0.05, ** p<0.01, *** p<0.001

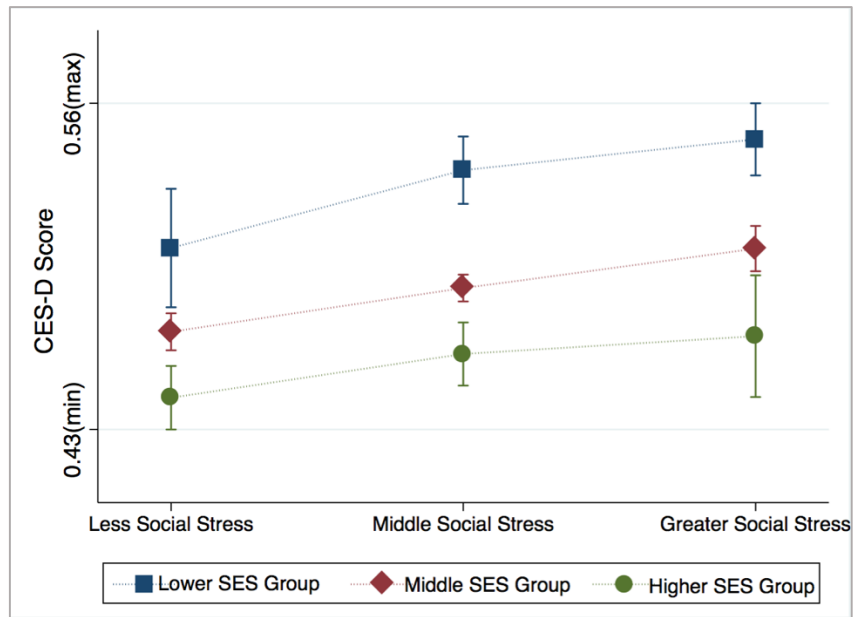


Figure 2. The Impacts of Social Stress on CES-D Score of Different SES Groups

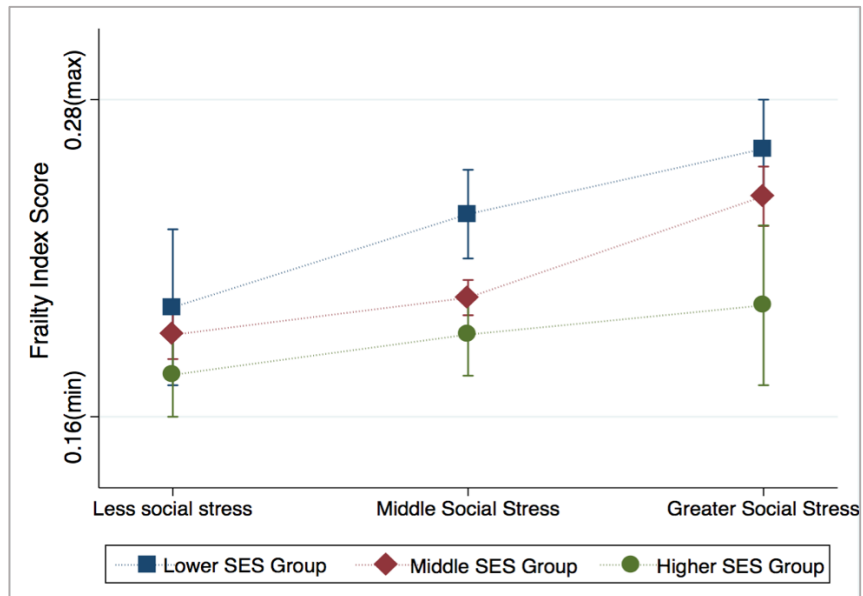


Figure 3 The Impacts of Social Stress on Frailty Index of Different SES Groups