Supportive Communities: How Practical and Emotional Neighbor Relationships Vary by Individual Health Status in 29 Countries with Different Healthcare Resources

Extended Abstract

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Background and Research Framework

Neighbor relationships are essential components of personal networks. It has been shown that neighbor relationships make up 7%-19% of a personal network (see, e.g., Van der Poel, 1993; Völker & Flap, 2007). Nevertheless, we still know little about whether there are different types of neighbor relationships and how neighbor relationships are established. Some personal characteristics have been found to influence neighbor relationships, such as home ownership (Mollenhorst et al., 2009) and immigrant background (Wierzbicki, 2001). One argument is that people with disadvantages may have more needs and thus more rely on their neighbors who are the closest provider of assistance geographically (Völker & Flap, 2007). Following this argument, we extend the literature on how personal characteristics predict neighbor relationships by focusing on personal health status which has not received enough attention in previous studies.

We also contribute to the existing literature by going beyond the single-country case studies, aiming to explore the role of institutional effects. Given that individuals have different access to public welfare in different countries, a cross-national study is crucial to portray the association between health status and neighbor relationships in countries with different levels of public healthcare resources. In addition to health status and public healthcare resources, we also pay attention to individual financial difficulties. We examine whether facing multiple disadvantages, namely poor health status, inadequate healthcare resources, and a high level of financial difficulties, influences individuals' neighbor relationships. Overall, in this paper, we ask (1) how does personal health status predict individuals' neighbor relationships, (2) how do country-level public healthcare resources influence the association between health status and neighbor relationships, and (3) how do financial difficulties exert additional effects on such an association? We specifically distinguish between neighbor relationships as practical relationships and emotional relationships. Although previous studies suggested that neighbor relationships are usually observed as practical help (Fischer, 1982), such as borrowing small items, we can also find some people have emotional interactions with neighbors, such as discussing family problems.

We propose that people with poor health have more needs in daily life and thus tend to establish relationships with neighbors. However, living in countries with adequate healthcare resources, they may have more opportunities to turn to public resources, which leads to less dependence on neighbors. Our conceptual model is shown in Figure 1. We also expect that the positive association between poor health and neighbor relationships is the strongest for people facing high levels of financial difficulties and inadequate healthcare resources. Our expected effect strength of poor health is shown in Table 1.

Figure 1: Conceptual model

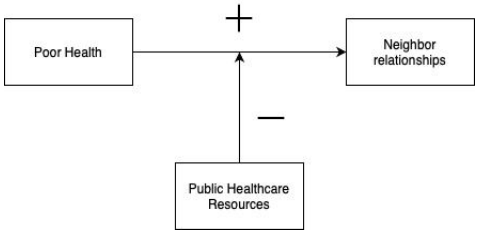


Table 1: Expected effect strength of poor health status on neighbor relationships.

		Public healthcare resources	
		Inadequate	Adequate
Financial difficulties	Lower	In-between	Weakest
	Higher	Strongest	In-between

Data and Measures

We use data from the 2017 International Social Survey Program (ISSP Research Group, 2019) module on "social networks and resources", which consists of random samples of 47027 respondents from 32 countries and regions. We derived information on the public healthcare resources in different countries from the four indicators including "Domestic General Government health expenditure", "Number of Medical Doctors (per 10,000 population)", "Number of Pharmacists (per 10,000 population)", and "Number of Nursing and Midwifering personnel (per 10,000 population)" from the Global Health Observatory database (see https://www.who.int/data/gho/info/about-the-observatory). After deleting all missing values, there are 37549 individuals from 29 countries in our sample.

Our two dependent variables, namely practical neighbor relationships and emotional neighbor relationships are measured with the five questions in the section "Who would you turn to first?". In this section, the respondents are required to choose whom they would turn to first in the five different situations: (a) Help you with a household or a garden job that you can't do yourself; (b) Help you around your home if you were sick and had to stay in bed; (c) Be there for you if you felt depressed and wanted to talk about it; (d) Give you advice about family problems; (e) Enjoy a pleasant social occasion with. Based on this question section, we distinguished two types of neighbor relationships. In situations (a) and (b), the respondents turn to others for practical help in their daily life. While in situations (c), (d), and (e), the respondents turn to others out of their emotional needs. These two dependent variables are constructed as binary variables, indicating whether the respondents have practical relationships and emotional relationships with their neighbors.

Personal health status was measured by the question "In general would you say your health is …?". A 5-point scale ranging from "excellent" to "poor" was used to gather responses. Higher scores indicate worse personal health status.

The level of financial difficulty is measured by the question "How difficult it is to make ends meet from total household's income". The respondents answered the question on a 5-point Likert scale ranging from "very easy" to "very difficult". We coded this variable as a continuous

variable and higher scores indicate more financial difficulties.

Method

Considering the hierarchical structure of our data, with individuals nested in countries, we adopted multilevel modeling in this study. Given that the dependent variables are dichotomous, we used the two-level multilevel logistic models. We estimated multilevel models for the two dependent variables separately. To examine the effect of financial difficulties, we estimated two models including the three-way interactions in terms of personal health status, financial difficulties, and public healthcare resources. We plotted the significant interaction, and by comparing the slopes of the above four situations, we can examine in which situations the effect of poor health on neighbor relationships is the weakest and the strongest.

Results

Table 2: Multilevel Logistic Regression Results (Dependent Variable: Emotional Neighbor Relationships; N = 37549; Country-level Units = 29)

	Model 1b	Model 2b	Model 3b
Individual-level variables			
Poor health		0.11*	0.14**
		(0.05)	(0.04)
Country-level variables and cross-level interaction terms			
Public healthcare resources		-0.99***	-1.14***
		(0.16)	(0.17)
Poor health * Public healthcare resources			0.13**
			(0.05)
Intercept	-3.41***	-3.71***	-3.77***
	(0.20)	(0.22)	(0.22)
Variance Component			
Variance at level 1	3.29	3.29	3.29
Variance at level 2	1.13***	0.53***	0.50***
	(0.32)	(0.17)	(0.16)
Variance from the fixed part		0.03*	0.02*
		(0.01)	(0.01)
Model Fit			
-2 log likelihood	-7049.26	-6822.65	-6819.21
AIC	14102.52	13677.30	13672.41

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

Variance at level-1 follows from the standard logistic distribution: σ^2=π^2/3≈3.14^2/3≈3.29

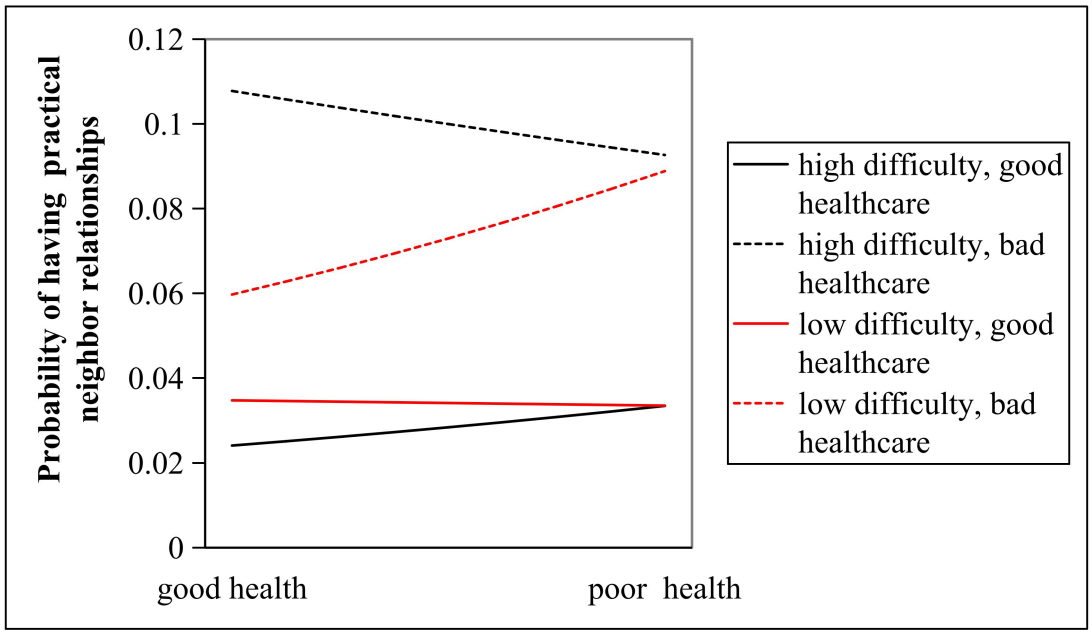
We included the following control variables in the model but omitted them in the table: age; female; education; work status; financial difficulties; urbanization of the living place; number of children in household; number of persons in household other than child; migration background; social network diversity

We did not find significant results for the direct effect of health status or the interaction with public healthcare resources in the model predicting practical neighbor relationships, therefore only the results predicting emotional relationships are shown in Table 2. We found that that poor health status is positively associated with emotional neighbor relationships ($\beta = 0.14$, $p = 0.001$), which indicates that the odds of having emotional neighbor relationships are 1.15 times (exp (0.14) = 1.15) higher as the poor health status increases by one unit. We also found that the coefficient of the cross-level interaction term (poor health * public health care resources) is significantly positive ($\beta = 0.13$, $p = 0.005$), which indicates that as public health care resources become more adequate, the positive association between poor health status and emotional neighbor relationship becomes stronger.

Next, we move to the results of three-way interaction model. We found that the coefficient of

the three-way interaction term in the model predicting practical neighbor relationships is significant (β = 0.044, p = 0.019), we did not find the three-way interaction for emotional neighbor relationships. We plot the results in Figure 2. In general, the results indicate that the effect of poor health status on practical neighbor relationships is weakest if the individuals have a lower level of financial difficulties and live in countries with adequate public health care resources. However, we found that the effect of poor health on practical neighbor relationships is not the strongest for the group who has a higher level of financial difficulties and live in countries with inadequate public health care resources, which is inconsistent with our expectation.

Figure 2: The plot of three-way interaction multilevel logistic regression model predicting weak neighbor relationships.



Conclusion

To conclude, we found that poor health status directly predicts a higher probability of having emotional neighbor relationships but does not directly predict a higher probability of having practical neighbor relationships. Moreover, we found that for people in poor health who are living in countries with adequate public healthcare resources, their tendency to establish emotional relationships with neighbors is stronger than those having health problems and living in countries with inadequate public healthcare resources. Finally, we found that compared with the most advantaged group, which has a lower level of financial difficulties and lives in countries with adequate public healthcare resources, the association between poor health and practical neighbor relationships is stronger if people are faced with a higher level of financial difficulties or living in countries with inadequate public healthcare resources. In the full paper, we will discuss why poor health does not predict a higher probability of practical neighbor relationships but practical neighbor relationships are influenced only when people have multiple disadvantages, namely poor health status, inadequate public healthcare resources, and financial difficulties. In general, our study highlights the importance of neighbors and a well-functioning welfare system, especially for those in dire straits.

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