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# Effects of Organizing Voluntary Help on Social Support, Stress and Health of Elderly People\*

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## ABSTRACT

In a district of an urban community an agency arranging for voluntary help was built up within an action research project. Data from a longitudinal study are used to evaluate the effects this agency has on elderly people. The hypothesis formulated is that organized voluntary help is a means to improve social support and reduce social stress. These effects are expected to have indirect positive effects on health. In the first survey a representative, weighted random sample (total N=907, of which 303 were elderly)

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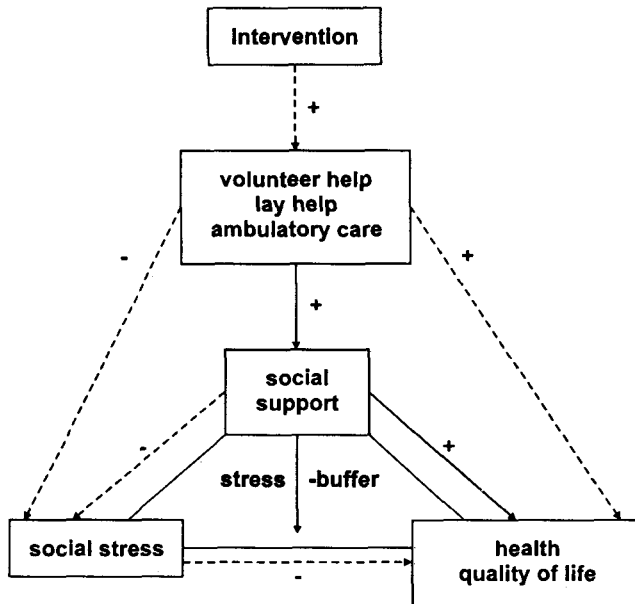
erly, i.e. older than 64 years old) was asked about social stress, social support, health, demand for help in general and use of professional medical help. Thereafter an agency arranging for voluntary neighborhood help was built up and observed. Three years later, the follow-up survey was carried out. An effect-evaluation of the above mentioned program is determined by comparing the panel data of the elderly living in the district where the agency was built up with the data of a control group of elderly living in another district of the same city, where no such action had taken place. Results show unexpected negative effects on social support and on the informal help-system of the elderly people in the district, where voluntary neighborhood help had been organized. At the same time, though, organized voluntary help did reduce social stress and minor health disorders as well as the use of professional medical services. These results demand further analysis and discussion of means able to reduce the negative effect on social support without weakening the relief effect on stress and the positive effect on health.

## Theoretical Model

Figure 1 shows the general theoretical model of our action research project. The lower triangle contains the interdependent variables "social stress", "social support" and "health". The causal relationships between these 3 variables have been analyzed for individuals in many studies (Cohen & Syme 1985; Veiel & Baumann 1992). As the arrows demonstrate, **health** is the dependent variable and **social stress** has a negative effect on health. In this diagram all arrows with interrupted lines symbolize negative effects, whereas uninterrupted lines symbolize positive effects. **Social support** has a direct as well as an indirect positive effect on health. The indirect effect of social support is a stress-buffer effect. This means that good social support can reduce negative effects of stress.

In this paper we take the empirical evidence of negative effects of stress as well as positive effects of social support on health for granted (Aneshensel 1992; Cohen & Syme 1985; Dohrenwend & Dohrenwend 1981; Gottlieb 1983; Kaplan 1983; Lin, Dean & Ensel 1986; Meyer & Suter 1993; Pearlin 1989; Veiel & Baumann 1992). Our focus is directed towards the effects of **organized voluntary help** as an **intervention** to improve social support. The basic idea is, that health and the quality of life can be influenced in a positive way by organized and institutional help. This help can be either lay or professional help. In our study the founding of an agency arranging for help among neighbors is

**Figure 1**  
Theoretical Model

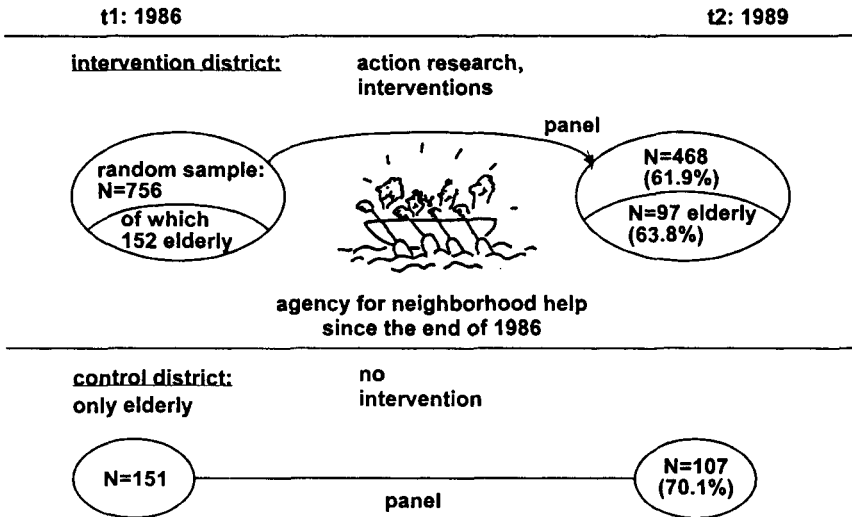


taken as the intervention (Meyer & Budowski 1993; Meyer-Fehr et al. 1990). Expected effects of good voluntary and lay help are shown with the arrows (in figure 1): (1) Organized voluntary help is expected to improve the social support of the target population thereby having indirect positive effects on maintenance of good health as well as on recovery. (2) An organized supply of help is expected to reduce social stress for the target population and to improve its health. Such improvement in health should result from providing relief of stress (through the knowledge that help is available and can be asked for in case of need), and by advice (counseling) for adequate coping and for good health behavior. The goals of the intervention were those theoretically expected beneficial effects. The implementation of these goals will be evaluated in this article.

## Design of the Study

Figure 2 shows the design of the study. We carried out a two-wave panel study in the city of Zürich in two similar districts. In one district, the so-called **intervention** district, we initiated interventions to improve

**Figure 2**  
Design of the Study



neighborhood help and we surveyed a representative, weighted random sample of the adult population. In the other district, the so-called **control** district, no interventions took place and a control group was interviewed. The total sample size of the survey in the intervention district consists of  $n = 756$  completed oral interviews. Of the total sample, 152 interviews were carried out with elderly persons, defined as persons older than 64 years old. To save costs the group interviewed in the control district was restricted to a random sample of  $n = 151$  elderly so that the effect-evaluation of the intervention refers only to this target group.

After completing the first survey (t1) in the intervention district in 1986 an agency arranging for neighborhood help was built up and observed within an action research program (Meyer & Budowski, 1993). Three years later, the follow-up survey (t2) was carried out. The effect-evaluation is determined by comparing the data of elderly living in the intervention district with the data of the control group living in the district, where no such action had taken place.

The sample size of the elderly in the intervention district is reduced to  $n = 97$  at t2 (the follow-up survey), 63.8% of the original  $n = 152$  interviews at t1. The control group consists of  $n = 107$  persons at t2, 70.1% of t1. In the statistical analysis the intervention group is reduced to  $n = 89$  and the control group to  $n = 102$  due to missing values in the main variables.

The agency arranging for neighborhood help actually reached the target group, i.e. persons in need of help, and can therefore be considered successful. During the first two years, 122 persons were helped by 56 volunteers who dedicated an average of eight hours monthly per beneficiary for five months. In 1989 (t2), three years after the agency had taken up its activities, 67% of the survey sample of elderly in the intervention district knew or had heard about the newly founded agency for neighborhood help, though only 4 of them had actually become voluntary helpers or beneficiaries. Ninety-six percent of the whole survey population, though, had not had personal contact with the agency (Meyer-Fehr & Suter, 1992).

## Questions and Hypothesis

The general question is: What effects does the institutionalization of an agency for voluntary neighborhood help have on the population of elderly? The following 4 points will be considered:

1. What are the effects (of the existence of such an agency) on social support, informal help and participation in the community? Two contradictory hypotheses are formulated. One hypothesis assumes an **activation** of informal social support received and of informal help given by elderly people. This would mean that neighborhood help becomes more popular in the population, and spreads out informally, too. The contradicting hypothesis assumes a **disactivating effect** on informal help. It is generally argued, that the institutionalization of human activities in formal organizations can have a **devastating effect** on the corresponding **informal** activities, since what had been done informally, can thereafter be delegated to an organization.
2. What are the effects on social stress? According to the theoretical model (figure 1) it is assumed that the availability of help relieves stress.
3. We expect to find a positive effect on health.
4. If lay help is available, we assume that the elderly make less use of professional help, because the lay system takes over some of its functions.

## Results

**Table 1**  
Description of control group and intervention group  
(Sample size means resp. proportions)

Sample	N	Age	% women	Education	Income Swiss Fr.
Control group	102	72.4	57.8%	2.42	1844
Intervention group	89	72.8	69.7%	2.46	2007
Significance		0	(*)	0	0

### Notes:

Age and income measured in the first survey (t1); samples for longitudinal analysis

Tests of significance: (1) difference of means: T-test, 2-tailed;

(2) difference of proportions: chi-square

Level of significance: 0: not significant ( $p > .10$ ); (\*):  $.10$

Education: highest level of education reached, 5 levels

Income: household-income taking into account the size of the household by using an equivalence scale (scale Leu: Suter & Meyer 1989:532)

In the first survey there were no significant socio-demographic differences between the two samples, that is between the intervention group and the control group, except for the proportion of women (Table 1). In the control group there are 58% women, in the intervention group 68%. However, this difference is only significant at the  $.10$  level.

Besides the variables shown in table 1, the two groups were compared with regard to the central variables of the project. These variables are social support, social stress, health, and helping behavior. These variables do not differ significantly between the two samples in the first survey, either.

To measure the effect of the intervention, changes in values of relevant variables from t1 to t2 in the intervention group were compared with those in the control group. Two tests of significance are applied. One is the T-Test, which tests the difference of means between the in-

tervention and the control group. As mentioned above, no difference was significant at t1. By contrast, at t2 several significant differences can be seen. The second test used is the Wilcoxon test indicating the significance of the change from t1 to t2. Value differences of most variables are greater as well as significant more often for the intervention group than for the control group. An effect of the intervention is considered significant if there is either a significant difference between the two groups at t2 or if there is a significant change from t1 to t2 in one group but not in the other.

In table 2 the measurement of change is shown with 3 variables: The size of the **personal social network** is measured with the amount of contacts in several segments of the network (friends, relatives, colleagues at work, neighbors, activities in associations). There is no significant change from the first to the second survey, neither in the control group nor in the intervention group. The effect size of the change is measured by Cohen's (1988) effect size  $d$  used for the difference of means in dependent samples. The formula for  $d$  is shown in the notes to table 2. The value of  $d$  for the change in network size,  $-.10$  in both samples, is very small. The value  $d = .2$  is considered a "small" effect size,  $d = .5$  is a "medium" effect size and  $d = .8$  is a "large" one (Cohen 1988: 25f.). As expected, the size of the social network is rather stable over time (no change in means, high intercorrelation of  $r = .67$  between t1 and t2). It is not affected by the intervention.

**Social support** is measured with an adapted version of the "Social Support Questionnaire" (Schaefer, Coyne & Lazarus, 1981). Our scale of social support is the sum of practical and emotional support, which can be provided, when needed, by six social networks (partner, relatives, adult children, friends, colleagues at work, neighbors). Social support shows remarkable changes between the first and the follow-up survey. There is no change at all in the control group, but there is a significant decrease in the intervention group ( $d = -.30$ ). This finding is interpreted as a negative effect of the intervention on social support. An interpretation is given below.

The variable "**help given**" measures the amount of informal help given to neighbors during the last 12 months. This variable diminished to a larger extent in the intervention group than in the control group. The decrease is significant only in the intervention group. At t2 the mean amount of help given is slightly lower in the intervention group than in the control group (significant at the  $.10$  level), whereas at t1 the mean values are almost identical in both groups.



**Table 2**

Changes from t1 to t2 in network size, social support and help given  
(Difference of means: (1) t1 to t2; (2) control group  
vs. intervention group)

	m1	m2	s1	r	sig.Wil	d
<b>Size of social network:</b>						
Control group	7.284	7.118	2.802	0.672	0	-0.103
Intervention group	6.933	6.764	2.965	0.666	0	-0.099
<b>Social support:</b>						
Control group	17.970	17.970	6.582	0.554	0	0.000
Intervention group	18.472	16.773	9.295	0.634	*	-0.302
<b>Help given:</b>						
Control group	3.768	3.126	4.345	0.228	0	-0.168
Intervention group	3.831	2.229	4.406	0.311	**	-0.438
sig T-Test	0	(*)				

**Notes:**

m1: mean at t1 (first survey); m2: mean at t2 (2nd survey); s1: standard deviation at t1  
r: pearson correlation t1 with t2

sig. Wil.: significance according to Wilcoxon Matched Pairs Test, 2-tailed  
Levels of sig: 0: not significant ( $p > .10$ ); (\*): .10; \*: .05; \*\*: .01; \*\*\*: .001

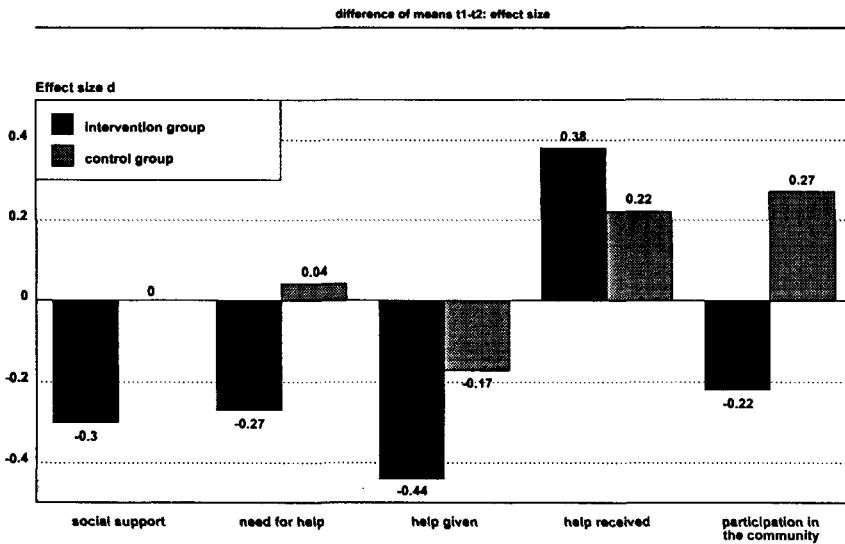
d: effect-size (Cohen 1988:49),  $d = (m2 - m1) / s1 * \sqrt{1 - r^2}$

sig. T-test: cross-section comparison of control group and intervention group, only indicated, if level of significance at t1 or t2 at least .10

In order to reduce the unnecessary complexity of data, the following analysis is based simply on the comparison of the effect size d and limited to variables in which the effect of the intervention is significant according to the criterions mentioned above.

In figure 3 the effects on social support, informal help and participation in the community are shown. The diagram shows the effect size d. All variables are measured by scales that combine several items. The effects in the intervention group are represented by black bars, in the control group by bars with diagonal lines. The results for the variables

**Figure 3**  
Effects on Social Support, Informal Help and  
Participation in the Community



“social support” and “help given” are identical with those shown in table 2.

Three of the five significant effects are consistent with the hypothesis of **disactivation**:

1. The first disactivating effect pertains to **social support**. As mentioned before, in the intervention group the perceived social support decreased with an effect size of  $-0.30$ , whereas in the control group there was no change at all. It seems as if the intervention had a medium negative effect on the notion of the elderly to be able to get informal support if they were in need of it. Possibly at the time of the follow-up survey (t2) they rely more on formally organized help than at the time of the first survey (t1), three years earlier.
2. As shown above, a second disactivating effect is linked to the decrease of the amount of informal **help given** to neighbors during the last 12 months. A possible explanation could be that the elderly in the intervention district might have felt less obliged to help after the agency arranging for neighborhood help had been established. A beneficial aspect of this

otherwise rather undesirable disactivation effect is that those elderly feeling stressed due to the obligation to help, now can feel relieved due to the existence of this agency.

3. Thirdly we consider **participation in public life of the community**. There was a decrease in the intervention group but an increase in the control group. The result is a rather strong negative net effect of the intervention. It seems to be an age-specific effect among elderly, because no such decrease was found among younger people from the intervention district. Possibly the elderly looked at the founding of the agency arranging for neighborhood help as something modern and new from younger people, so they were rather skeptical towards it. The interviewers (qualitative and personal) observations in the field support this interpretation. The elderly often seemed to have an ambiguous attitude towards the new agency, often remarking that neighborhood help was a good thing on the one hand, but that they had doubts about it being organized on the other. By contrast, younger adults rather accepted the idea.

The effect on the variable **help received** is consistent with the hypothesis of **activation**. This variable is measured by the amount of informal help that someone received in the last 12 months, excluding the help of persons living in the same household. For elderly people this kind of help consists mainly in the help from younger relatives, most often from a daughter. This means that younger people were activated to help elderly, usually elder relatives.

It could be argued that some of the presented disactivating effects pertain more to elderly than to younger people. Since we have no control group for the younger people this cannot be evaluated empirically. However most changes among the group of younger people from the intervention district are quite the same as those among the elderly so that it can be considered rather unlikely, that effects are valid only for the elderly (Meyer-Fehr & Suter 1992).

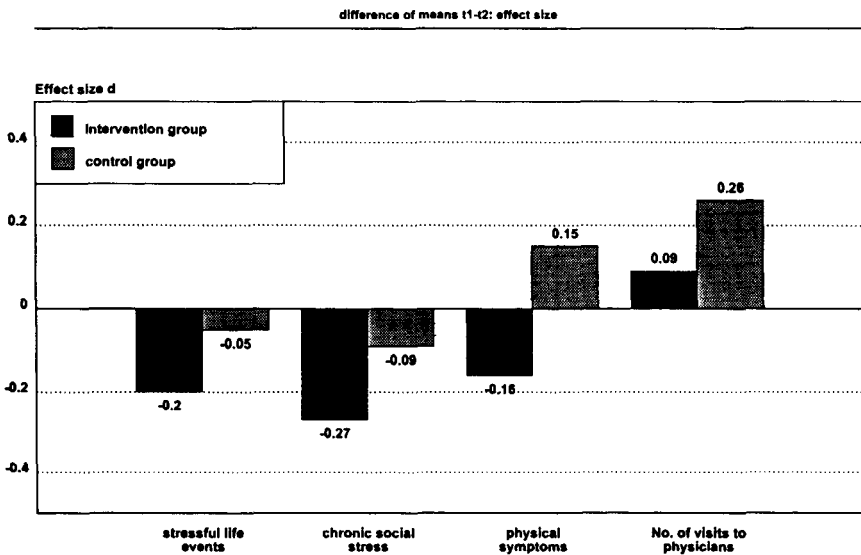
The variable **need for help** has significantly diminished in the intervention group but not in the control group. There are different possible interpretations for this result. One interpretation is that needs are better satisfied as more help is available. This interpretation is consistent with the increase of received help and therefore with the **activation** hypothesis. Another interpretation assumes that more elderly have grown resigned and are frustrated and therefore renounce their expectation for

informal neighborhood help. With this fatalistic attitude they do not articulate their needs for informal help any more. This second interpretation is consistent with the negative effect on social support and with the **disactivation** hypothesis.

Figure 4 shows the effects on social stress, health and the use of physicians. Two aspects of **social stress** have been surveyed: stressful life events and chronic, social stress. To measure **stressful life events** we used a short and modified version of the German life event scale "Inventar zur Erfassung lebensverändernder Ereignisse (ILE)" (Siegrist & Dittmann, 1983) which measures not only the incidence of such events during the last two years but also their subjective significance. **Chronic social stress** is measured with eight items on the daily stress originating from five social networks (partner, relatives, children, friends, neighbors) and from three areas of life (home, work, health).

According to our hypothesis there is a weak but consistent and significant effect of **relief of social stress** among the intervention group. According to both indicators a larger reduction of stress can be observed for the intervention group than for the control group. The intervention with the goal to improve the helping network might have reduced social stress for the elderly because they feel less obliged to help others. This

**Figure 4**  
Effects on Social Stress, Health and the Use of Physicians



interpretation is consistent with the already discussed finding, that the amount of help given and the need for help were reduced.

Two **health-indicators** are used to measure the amount or the intensity of symptoms during the last 12 months. The indicator "psychological symptoms" consists of seven items, e.g. "Was it difficult for you to concentrate?". The indicator "physical symptoms" consists of the frequencies of 19 different symptoms like cough, headache, lack of appetite, back pain, fever, stomachache.

Only one of two indicators was significantly affected by the intervention. The indicator "**physical symptoms**" increased in the control group but decreased in the intervention group. At t1 the elderly of our two samples are on an average 72 years old and at t2 75. The **increase** of physical symptoms in the control group is plausible according to the natural aging process. The **reduction** of symptoms in the intervention group, however small it is, though, is remarkable. The changes in **psychological symptoms**, the other health indicator, were smaller and not significant but point at the same direction as the physical symptoms.

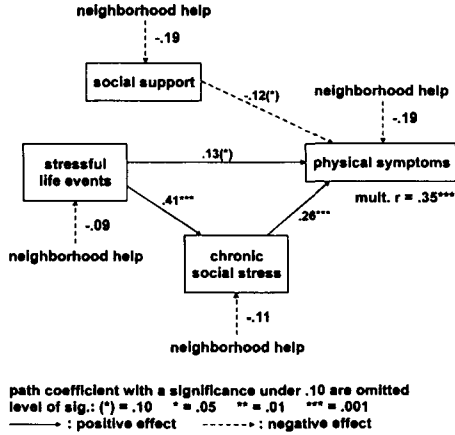
The path analysis of social support and stress indicators on physical symptoms allows the conclusion that part of the beneficial health effect of the intervention can be explained by the relief on social stress.

Finally we examine the **use of physicians**. The number of visits to physicians has significantly increased in the control group in contrast to the intervention group where almost no change can be observed. It is plausible that 75 year old persons visit a physician more often than 72 year old ones. Besides having better health than the control group, possibly the improvement of the lay help system as a result of the intervention could stop the increased use of physicians within the intervention group.

The multiple regression and the path analysis of the number of visits to physicians on social stress, physical symptoms and on other variables allows the conclusion that part of the relative reduction of the use of physicians can be explained by the reduction of physical symptoms. It is trivial that healthier people visit physicians less often than ill people. But even if the health indicators are controlled, strongly stressed people go to physicians more often than weakly stressed people. Their visit to the doctor can be interpreted as a resource for coping with stress. This psychosocial function physicians have might in part be replaceable by a good lay help system. In our analysis, part of the relative reduction of the use of physicians in the intervention group can be explained by the decrease of social stress.

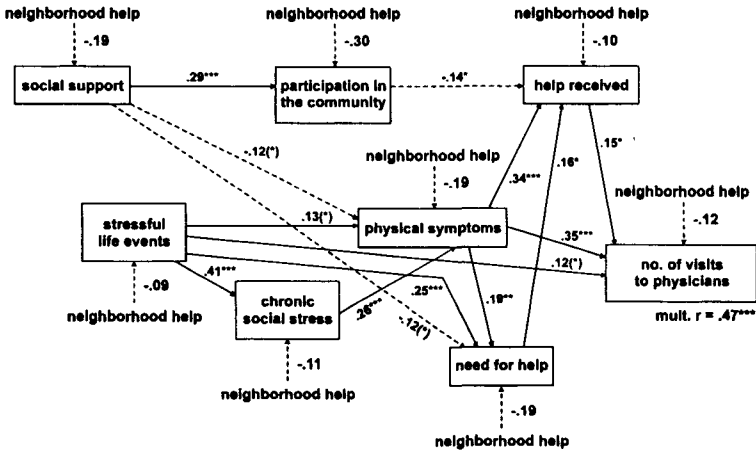
**Figure 5**  
 The Effects of Social Support and Social Stress on Physical Symptoms: A Path Analysis

The effects of organized neighborhood help are not included in the path analysis; elderly (t2), N=184



**Figure 6**  
 Predictors of Number of Visits to Physicians: A Path Analysis

The effects of organized neighborhood help are not included in the path analysis; elderly (t2), N=184



## Summary

The intervention of organizing neighborhood help had **negative effects** on social support and on informal helping among elderly people. At the same time, though, organized neighborhood help had the **beneficial** effect of **reducing** social stress and minor health disorders as well as the use of physicians. These results demand further analysis and discussion of an overall desirability of organized neighborhood help and of means able to reduce the **disactivating effect** without weakening the **relief effect**.

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