

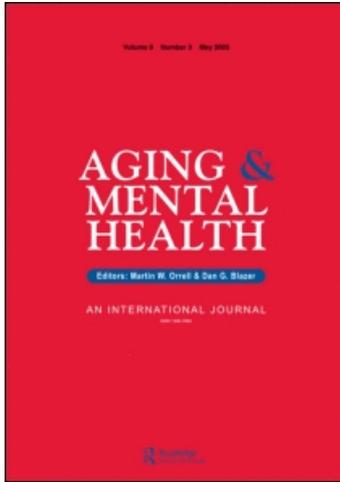
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### Psychological distress and its correlates in older care-dependent persons living at home

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## Psychological distress and its correlates in older care-dependent persons living at home

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**Objectives:** This study examined psychological distress in older people receiving home nursing care. The influence of risk factors and personal resources on their perceived psychological distress was also examined.

**Method:** A linear regression analysis was applied in a cross-sectional sample of 214 patients aged 75 years and older. Psychological distress was measured using the General Health Questionnaire (GHQ). The independent variables were sex, education, age, living arrangement, household composition, reported illnesses, Barthel ADL Index, self-rated health, Subjective Health Complaints, Clinical Dementia Rating Scale, Sense of Coherence and Revised Social Provision Scale.

**Results:** Of the 214 participants, 23 (10.7%) reported experiencing psychological distress using a cutoff point of 4 or more on a GHQ case score. Sense of coherence, education and subjective health complaints were the only factors that were significantly related to psychological distress in the multivariate analysis.

**Conclusion:** The general level of psychological distress was low. Low psychological distress was related to an inner strength conceptualized as sense of coherence. Commonly reported risk factors such as sex, household composition and perceived social support, and objective measures of somatic and mental health and bodily dysfunctions were not related to psychological distress. Suggested reasons for this are greater acceptance of bodily and functional shortcomings and of changes related to goal achievement in old age, according to the model of selective optimization with compensation.

**Keywords:** psychological distress; risk factors; personal resources; care-dependent elderly

### Introduction

The number of older people will increase in the years to come. Older persons often experience a complex situation, undergoing somatic, mental and social changes while adapting to the aging process. Coupled with these developmental tasks, a large proportion of the older population may also be struggling with psychological distress (Blazer, 2003; Riedel-Heller, Busse, & Angermeyer, 2006).

Psychological distress is a construct with no absolute definition (Couture, Lariviere, & Lefrancois, 2005). It has been used to cover very mild to severe disturbances (Riedel-Heller et al., 2006). In this study, the term 'psychological distress' is measured using the General Health Questionnaire (GHQ) (Goldberg, 1972; Goldberg & Williams, 1988) and encompasses several aspects where depression and anxiety are among the most prominent factors (Masse et al., 1998; Preville, Potvin, & Boyer, 1995).

Studies have found that between 27 and 48% of older adults suffer from psychological distress (Blazer, Hughes, & George, 1987; Preville, Hebert, Bravo, & Boyer, 2002). Most investigations of psychological distress in older persons have found that it occurs at a higher rate in institutional settings than in private households (Djernes, 2006), although conflicting results have also been presented (Preville et al., 2002). The institutionalization of an older person is usually

a function of several factors, including substantial nursing care needs (Thygesen, Saevarheid, Lindstrom, Nygaard, & Engedal, in press). However, as institutionalization is extremely expensive, the use of home nursing care services as an alternative to institutionalization has increased. Therefore, a large number of older persons in need of professional care continue to live in their own homes because they receive home nursing care on a permanent basis. The level of distress in this particular large and increasing group has been studied less often.

There is a general consensus that important risk factors for psychological distress in old age are female sex, somatic illness, cognitive impairment, functional impairment in activities connected to daily living, lack or loss of social contacts, and a history of depression (Blazer, 2003; Cohen & Wills, 1985; Djernes, 2006). Apart from female sex, the list of risk factors consists of negative events and conditions. Positive aspects that may serve to counteract psychological distress have not been widely studied. However, literature is now accumulating about the influence of personal resources on psychological distress in older persons (Nygren et al., 2005; Staudinger, Marsiske, & Baltes, 1993; Steunenbergh, Beekman, Deeg, & Kerckhof, 2006).

Personal resources have been conceptualized in various ways; the most prominent include self-efficacy (Bandura, 1977), hardiness (Kobasa, 1979), resilience

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(Luthar, Cicchetti, & Becker, 2000), internal locus of control (Rotter, 1966), coping (Lazarus & Folkman, 1984) and sense of coherence (Antonovsky, 1987). In this study, we selected sense of coherence (SOC) as the resource variable to be measured. 'Personality' itself is not adequate, as it is descriptive, and does not focus on resources *per se*. SOC was coined to describe a person's inner strength, and bears close resemblance to the other personal resources listed, but differs slightly regarding 'control' (Antonovsky 1987). The control component in SOC encompasses both active, direct, personal control, as well as achieving control by relying on others' control (Antonovsky, 1987; Sullivan 1993). This makes SOC particularly appropriate as a resource measure for old, help-dependent people. Finally, the questions in SOC are suitable for old people to answer because they do not refer to concrete situations that are irrelevant for them, work situations for instance. SOC is short and has been used successfully in old populations before.

SOC consists of the following components: comprehensibility (life makes sense), manageability (problems will be bearable) and meaningfulness (life is a challenge). SOC is a general and relatively stable coping resource, influencing how a person will cope with stressful events and threats, and it is assumed to be positively connected to health, including mental health (Schnyder, Buchi, Sensky, & Klaghofer, 2000; Johnson, 2004).

The SOC and the measure of the dependent variable psychological distress (GHQ) are constructed to capture a person's own subjective standards and self-understanding, in contrast to evaluations made by others. The instruments are short, and therefore suitable for use with aged informants. In addition, in this study, the following potential risk factors were measured: age, sex, education, living arrangement (housing), living with someone or not, perceived social support (SPS), functional impairment in activities of daily living (ADL), subjective health complaints (SHC), self-rated health (SRH), reported illnesses (RI) and clinical dementia rating (CDR).

To sum up, this study is original in that it studies an older population that is reasonably cognitively intact, but is neither independent nor institutionalized, as its members receive nursing care in the home. This situation of partial independence and partial dependence on health care services means that these persons have undergone some considerable, and negative, changes in their life situations. It is particularly in these situations of readjustment and life changes that personal resources are presumed to be of vital importance for adaptation and as buffers against psychological distress.

Therefore, the aim of this study is to investigate perceived psychological distress in persons aged 75 years and above, living at home and receiving home nursing care, and the influence of personal resources and risk factors on their perceived psychological distress.

## Method

This study uses a survey and forms part of the European Union's Fifth Framework Programme (FP5): Care for the aged at risk of marginalization (CARMA). Key action 6 of this program is 'The ageing population and disabilities' ([www.cooss.marche.it/Carma](http://www.cooss.marche.it/Carma)).

## Setting

This study was conducted in the context of a Scandinavian welfare model. Norwegian community care services consist of home help care services, home nursing care, sheltered housing facilities and nursing homes. Health care services are either fully tax-funded or partially funded with limited co-payments. In-home nursing services are free of charge, provided around the clock, and aim to enable people to continue living in their own homes. In 2005, of the 354,000 people aged 75 years and older in Norway, 19.7% received in-home nursing care, whereas 10.2% were cared for in nursing homes (Statistics Norway, 2005). During the past two decades, home nursing care has become the most important arena for community care services. All the patients participating in this study received these care services. Nursing care consisted mainly of personal hygiene, dressing, medication, feeding, wound care and general attention. Several of the participants also received home help services.

This study was set in seven municipalities in southern Norway. A random sample of municipalities was drawn, based on a stratified distribution according to representative classifications with regard to industrial activity, population density and urban/rural location (Statistics Norway, 1994). In the two populous municipalities, participants were selected randomly, while in the five rural communities, which had fewer patients, all patients were included in order to secure adequate representation from rural areas.

## Participants and data collection

People were eligible for this study if they were aged 75 years or older, community dwelling, receiving home nursing care, able to understand the purpose of the investigation and able to give their autonomous consent. Persons with severe and moderate cognitive impairment were excluded. Persons without any cognitive impairment are rare in this age-group. Therefore persons with mild impairments were included. Trained interviewers ensured that the participants could comprehend the questions and answer them.

The unit nursing officer (responsible for allocation of home nursing services) in each of the participating offices was asked to identify patients who fulfilled the inclusion criteria. The population comprised of 348 individuals. In all, 78 (22.4%) refused to participate, nine died and nine were permanently institutionalized

before data collection took place. A further 10 interviews were not completed due to fatigue in the participants, resulting in a baseline sample of 242 persons. All participants with missing data were excluded from the sample, leaving a total sample of 214 persons (149 women and 65 men). In this final sample, the mean age was 84.5 years (range 75–98 years); for women the mean age was 84.7 years (range 75–96) and for men 84.2 years (range 75–98). Fifty-nine percent of participants had completed elementary school or less, 33% intermediate school, and 8% grammar school or higher education. One-third of the men and 22% of the women lived with a spouse or others in the household.

Data collection was performed in participants' homes by research assistants and college staff members, all of whom were registered nurses with no previous involvement with the patients. Data collection took the form of an interview, with research assistants entering participants' answers on the questionnaire forms. Interviews lasted about 90 min, with some completed over two or more sessions due to fatigue in participants.

## Measures

### Psychological distress

The General Health Questionnaire (Goldberg, 1972; Goldberg & Williams, 1988; Malt, Mogstad, & Refnir, 1989), a standard 30-item measure designed for use in population studies, was used to measure psychological distress. GHQ is a screening instrument that measures symptoms of depressed mood, anxiety, social inadequacy and hypochondriasis. In particular it captures elements in the interface between psychological illness and psychological health. GHQ is found to be a valid instrument for assessing mental health in older subjects and people with mild cognitive impairment (Cheung, 2002; Goldberg & Williams, 1988; Papassotiropoulos, Heun, & Maier, 1997). GHQ is used both as a quantitative measure of psychological disturbance, and to define 'cases' of psychological distress according to whether or not the score exceeds a threshold. Here, both uses of the GHQ were applied. To define cases the scale was collapsed to yield a case/non-case dichotomy where scores of 0 and 1 were encoded to 0, and scores of 2 and 3 were encoded to 1 (Goldberg & Williams, 1988; Malt et al., 1989). Participants scoring 0–3 points were considered to have good psychological health, and participants with scores of 4 or more points were considered to have psychological distress symptoms. There is no consensus as to what this threshold should be, and previous research has used different threshold values (Goldberg, Oldehinkel, & Ormel, 1998; van Hemert, den Heijer, Vorstenbosch, & Bolk, 1995). The intention in this study was to map symptoms of psychological distress, not psychological disease, and therefore the threshold was lower than that recommended in the majority of studies. In addition, because of the low number of cases, the original Likert scores

were used in the linear regression analyses in order to identify the independent variables affecting the GHQ score. Each question was scored using a Likert scale of 0–3, giving a total range of 0–90. A low score indicates an absence of psychological distress symptoms. Cronbach's alpha in this study was 0.92.

### Demographic variables

The demographic variables recorded were *sex* (men = 1, women = 2), *age* and *education* (less than/or elementary school or continuation school = 1, further education = 2). *Household composition* registered if the patient was living with someone (1) or not (0), and *living arrangement* registered whether the patient was living in his/her own home (1) or in sheltered housing (2).

### Health and functional status

Reported illness is an eight-item checklist covering common physical diseases affecting older people: angina pectoris, congestive heart failure, hypertension, thyroid disease, diabetes, cancer, osteoarthritis and osteoporosis, giving a total score between 0 (no disorders) and 8.

The Barthel ADL index (Mahoney & Barthel, 1965) was used to measure functional impairment in activities connected to daily living. ADL was scored as recommended by Wade and Collin (1988). The instrument includes 10 basic ADL functions: bowel and bladder functioning, feeding, grooming, dressing, transfer from bed to chair, toilet use, mobility, climbing stairs, and bathing. The total score ranges from 0 (dependent in all functions) to 20 (independent in all functions). The Barthel ADL index is a widely used and standard measure of ADL functioning (Collin, Wade, Davies, & Horne, 1988; Wade & Collin, 1988). The reliability of the index has been well documented for stroke patients, but uncertainties remain when it is used with older people (Sainsbury, Seebass, Bansal, & Young, 2005). In the current study the Cronbach's alpha was 0.82.

### Subjective health status

Self-rated health (Mossey & Shapiro, 1982) was measured using the question 'How is your health now?' The answer categories were 1 = poor, 2 = not very good, 3 = good, and 4 = very good. SRH is a good predictor of future health status as measured by mortality and morbidity (Benyamini & Idler, 1999; Idler & Benyamini, 1997).

Subjective health complaints (Eriksen, Ihlebaek, & Ursin, 1999) is a 30-item scale that registers subjective somatic and psychological complaints experienced during the past 30 days. The SHC instrument measures subjective experience, occurrence, intensity and duration of health complaints in five different categories: musculoskeletal pain, pseudoneurology, gastrointestinal problems, allergy and influenza symptoms

(Eriksen et al., 1999), but without reference to specific diagnostic categories. Questions in the influenza and allergy categories were excluded as recommended by Eriksen and Ursin (1999), giving a total of 22 questions. The scores range from 0 to 3, giving a total score on the measurement from 0 (excellent) to 66 (poor). The questionnaire has satisfactory validity and reliability (Eriksen et al., 1999). In the present study the Cronbach's alpha was 0.84.

#### *Cognitive status*

The Clinical Dementia Rating Scale assesses severity of dementia (Hughes, Berg, Danziger, Coben, & Martin, 1982). It consists of a global score derived from scores of six domains of cognitive and functional performance: memory, orientation, judgment and problem solving, community affairs, home and hobbies, and personal care (Morris, 1993). The sum of domain scores was calculated according to instructions given in Morris (1993). The instrument has been validated in several studies (Engedal & Haugen, 1993; Morris, 1997). Cronbach's alpha in the present study was 0.79.

#### *Personal resources*

Sense of coherence (Antonovsky, 1987) is a scale measuring coping resources and inner strength. Here, the 13-item version of the SOC questionnaire was used. SOC contains three sections: comprehensibility (five items), manageability (four items) and meaningfulness (four items). Antonovsky (1987, 1996) emphasized that the three components are dynamically interrelated; therefore the scale was developed to measure a global orientation and the components should not be measured as distinct constructs. Each question is rated on a Likert scale, ranging from 1 (lowest) to 7 (highest) for level of coping resources, giving total scores from 13 (poor coping) to 91 (excellent coping). The SOC scale is a reliable, valid, and cross-culturally applicable instrument (Eriksson & Lindstrom, 2005; Feldt et al., 2007). Cronbach's alpha in the present study was 0.80.

#### *Perceived social support*

The Revised Social Provisions Scale (Cutrona & Russell, 1987; Cutrona, Russell, & Rose, 1986) was used to assess social support. The SPS is based on Weiss's theoretical model of the provisions of social relationships (Weiss, 1974). It consisted originally of six subscales: attachment, social integration, nurturance, reassurance of worth, reliable alliance, and guidance. According to Weiss, the provisions will have different meanings at various stages in life. The first four are of most importance in the oldest old and are therefore used in this study, as recommended by Cutrona and Russell (1987) and Bondevik and Skogstad (1998). Four statements assess each social provision. Each subscale consists of two questions that

are positively worded and two that are negatively worded. The response categories are 1 (strongly disagree), 2 (disagree), 3 (agree), and 4 (strongly agree). Negative items were reversed before scoring. The total score for the complete 16-item version was used to assess the level of social support, and it ranged from 16 (low social support) to 64 (high social support). The internal consistency of the scale has proved to be good (Cutrona & Russell, 1987); in the present study the Cronbach's alpha was 0.81.

#### *Ethical considerations*

Each participant received oral and written information and gave their written consent before data collection. The study followed the guidelines for community medicine research and was approved by the Regional Ethics Committee for Medical Research in Western Norway and The Norwegian Data Inspectorate.

#### *Statistical analyses*

SPSS 15.0 for Windows was used for statistical analyses. Bivariate correlations were tested with the Pearson correlation coefficient; all tests were two-tailed, listwise deletion. Tests of internal consistency were done using Cronbach's alpha. Means were compared using an independent samples *t*-test. Chi-squared tests were used to test differences in nominal level variables. Linear regression analysis was used to investigate the relationship between health and coping factors and psychological distress symptoms. A block-wise entry into the model was applied. The distribution of each variable was examined by inspecting histograms, *Q-Q* plots and box plots, and variables log transformed, with insignificant changes in the results.

#### **Results**

The response rate was 64.8%, which is reasonably high in this vulnerable population. In order to define cases of psychological distress, the scale was collapsed to yield a case/non-case dichotomy with a cutoff point of four or more on the GHQ scale. Of the 214 participants, 23 (10.7%) were cases of psychological distress.

Demographic characteristics for participants are presented in Table 1. The level of psychological distress was higher in women than in men, but the difference was not significant. Women reported more subjective health complaints and reported illnesses, but suffered less cognitive impairment than men. Nominal variables were tested with chi-square tests, and no significant differences were found.

Bivariate correlations (Table 2) between independent variables showed that the strongest correlations were between self-rated health and subjective health complaints ( $-0.448$ ,  $p < 0.001$ ), reported illness and

Table 1. Descriptive statistics for dependent and independent variables ( $N = 214$ ).

Variable	Women ( $N = 149$ )	Men ( $N = 65$ )	$t$ -Test/chi-square for gender differences
GHQ	25.00 (7.203)	24.23 (6.993)	-0.725
Age	84.68 (5.144)	84.18 (4.924)	-0.662
Living arrangement	Own home 102 (69.6%)	48 (73.8%)	$\chi^2 = 0.329$
Living together with someone	Sheltered housing 47 (31.5%)	17 (26.1%)	$\chi^2 = 1.967$
	Living alone 116 (77.9%)	44 (67.7%)	
	Living together 33 (22.1%)	21 (32.3%)	
Education	Elementary school or less 93 (62.4%)	33 (50.8%)	$\chi^2 = 2.077$
	Intermediate school or higher 56 (37.6%)	32 (49.2%)	
Reported illness	1.66 (1.234)	0.95 (1.165)	-3.901***
Activities of daily living	17.70 (2.825)	18.18 (2.931)	1.146
Clinical dementia rating	0.16 (0.480)	0.40 (0.703)	2.499*
Sense of coherence	69.35 (9.362)	70.86 (8.236)	1.126
Self-rated health	2.30 (0.683)	2.38 (0.823)	0.767
Subjective health complaints	9.82 (6.970)	7.42 (6.901)	-2.327*
Social provision scale	53.40 (6.175)	51.38 (8.177)	-1.775

\* $p < 0.05$ ; \*\*\* $p < 0.001$  analyzed by listwise deletion (point biserial coefficient for the nominal variable).

Data are presented as mean (standard deviation) and percentages, for women and men separately;  $t$ -tests and chi-square were used to assess the differences between women and men.

Table 2. Correlation matrix for independent variables ( $N = 214$ ).

	Sex	Age	Living arrangement	Living with someone	Education	SPS	ADL	SHC	SRH	SOC	RI
Age	0.045										
Living arrangement	0.054	0.107									
Living with someone	-0.108	-0.140*	-0.238***								
Education	-0.109	-0.095	-0.069	-0.026							
SPS	0.135*	0.031	0.065	0.028	-0.071						
ADL	-0.078	0.124	-0.083	-0.063	0.032	0.261***					
SHC	0.158*	-0.204**	0.085	0.114	-0.145*	-0.027	-0.145*				
SRH	-0.057	0.241***	0.019	-0.139*	-0.018	0.111	0.202**	-0.448***			
SOC	-0.077	0.170*	0.009	-0.062	0.120	0.272***	0.146*	-0.360***	0.275***		
RI	0.259***	-0.175*	0.005	0.078	-0.122	0.036	0.022	0.426***	-0.307***	-0.113	
CDR	-0.194**	-0.078	0.091	0.102	-0.060	-0.251***	-0.143*	0.040	-0.115	-0.186**	-0.015

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ , analyzed by listwise deletion.

Abbreviations: SPS, social provisions scale; ADL, activities of daily living; SHC, subjective health complaints; SRH, self-rated health; SOC, sense of coherence; RI, reported illness; CDR, clinical dementia rating.

subjective health complaints (0.426,  $p < 0.001$ ). No correlations reached the level of 0.5. Therefore, all the explanatory variables were treated as independent variables in the further analysis.

Bivariate associations (correlations) between psychological health and the explanatory variables are shown in Table 3. Psychological distress (GHQ) was negatively associated with age, ADL, SOC and SRH, and positively associated with SHC. In order to estimate how health status and coping resources influenced GHQ, we performed a hierarchical regression analysis, presented in Table 3. The potential explanatory variables were first tested by a series of univariate analyses. Only variables with a  $p$ -value equal to or lower than 0.20 were included in the analysis. In the multivariate model, the variables were entered blockwise. As shown in Table 3, psychological

distress was related to higher levels of education, low levels of SOC, and high levels of subjective health complaints.

## Discussion

The proportion of participants identified as having symptoms of psychological distress (10.7%) was lower than that reported in other studies (Blazer et al., 1987; Djernes, 2006; Preville et al., 2002), despite the very low threshold score for GHQ used in the current study. This result was surprising, taking into consideration that the participants belonged to a vulnerable group of old, care-dependent individuals. This low level could be due to some simple causes pertaining to this study. First, the fact that these persons had accepted home nursing care could in itself be an indicator of adequate

Table 3. General Health Questionnaire 30: Standardized regression coefficients and adjusted  $R^2$ , block-wise hierarchical model.

	$r$	$N = 214$				
		Model 1 $\beta$	Model 2 $\beta$	Model 3 $\beta$	Model 4 $\beta$	Model 5 $\beta$
Sex	0.050	0.068	0.030	0.014	0.010	0.055
Age	-0.165*	-0.159*	-0.060	-0.039	-0.021	-0.067
Education	0.112	0.104	0.173	0.183**	0.196**	0.150*
SOC	-0.525***		-0.533***	0.518***	-0.457***	
RI	0.112			0.067	-0.009	-0.050
ADL	-0.138*			-0.060	-0.037	-0.026
CDR	0.119			0.026	0.030	0.080
SPS	-0.168*				0.006	-0.118
SHC	0.352***				0.203**	0.336***
SRH	-0.243***				-0.009	-0.059
Adj $R^2$		0.028	0.298	0.295	0.316	0.155

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ , analysed by listwise deletion.

The model estimated the influence of various health measures on GHQ, whether the effect of SOC is mediated by a set of putative intervening variables as well as the extent to which the associations between these latter variables are confounded by a common association with SOC and SRH.

Abbreviations: SOC, sense of coherence; RI, reported illness; ADL, activities of daily living; CDR, clinical dementia rating; SPS, social provisions scale; SHC, subjective health complaints; SRH, self-rated health.

self-perception and thus psychological functioning. In the selection of participants, persons with severe psychological incapacities (dementia) were excluded. Persons with severe psychological distress could be over-represented among those who declined to participate. Psychological distress could be under-reported because socially desirable responses are more likely in face-to-face data collection than in self-administered modes (Moum, 1998). Finally, Norway has a high standard of living, so one could expect that older Norwegians would be quite satisfied with their life situation.

In addition, the low levels of psychological distress found in this study may be because of changes taking place in old age. Depression, a factor in psychological distress, seems to decline with increasing age, although the findings are equivocal (Blazer, 2003; Riedel-Heller et al., 2006; Snowden, 2001). Such a decline could reflect survival or cohort effects. Individuals with high levels of physical and psychiatric morbidity in old age may die earlier (Bowling, 1990). In the present study, the levels of both physical and psychological morbidity were lower in the older age groups.

Despite these factors, this study still revealed interesting connections between personal resources, acknowledged risk factors, and psychological distress (Table 3). The sense of coherence, subjective health complaints, and education were associated with psychological distress. Other commonly reported risk factors for psychological distress: sex, age, and living arrangements (living with someone or not), perceived social support, objective health (RI), self-reported health (SRH), function parameters (ADL), and cognitive impairment (CDR) were not associated with psychological distress in this study. The exclusion of participants with severe and moderate cognitive impairments may explain the lack of association between dementia and psychological distress.

The participants with the lowest education reported fewer complaints. However, the differences in education were so small that it seems impossible to interpret this difference.

It is commonly assumed, and also documented, that social relations reduce distress (Bruce, 2002; Prince, Harwood, Blizard, Thomas, & Mann, 1997b; Turner & Turner, 1999), although some studies do not support such a relationship (Minardi & Blanchard, 2004; Schoevers et al., 2000). Such links were not found in this study, either measured as perceived social support or as whether a person lived with somebody or alone. The reason for this may lie in the complex nature of social relationships. Relationships may provide social support as well as create burdens (Drageset & Lindstrom, 2005). Old people as a group may be at particular risk of negative experiences. They tend to experience more losses among family members and friends, spouses may suffer from dementia or other ailments, the frequency of visits from family and friends may be disappointingly low, and physical handicaps may hinder meeting people or making new acquaintances. Therefore, social relations may be a source of both joy and distress in old age (Bisschop, Knegsman, Beekman, & Deeg, 2004).

Old people tend to suffer from health problems of varying severity. Physical illness and disabilities are reported to have strong associations with psychological distress (Braam et al., 2005; Harris et al., 2003; Kisely & Goldberg, 1996; Prince, Harwood, Blizard, Thomas, & Mann, 1997a). Therefore, it was surprising to find that measures of physical health problems like reported illnesses, functional disabilities, and self-rated health were not associated with psychological distress.

Chronic diseases may not necessarily, or seriously, affect the performance of activities of daily living. Therefore, they do not necessarily influence a person's

perception of their *general* health (Guralnik, 1996). However, it was a truly surprising finding that functional impairments in activities connected to daily living were also unrelated to psychological distress. This may mean that old persons tend to consider physical health problems as natural for their age and more or less inevitable. Therefore, such concrete ailments may, to a considerable extent, be experienced as solely *somatic* problems and not as factors contributing to *psychological* distress (Wilms, Kanowski, & Baltes, 2000).

However, those suffering from psychological distress seemed to somatize their problems. The connections between subjective health complaints and distress indicate this. Similar findings have been reported before (Eriksen & Ursin, 2004; Gottfries, 1998; Riedel-Heller et al., 2006).

An attitude of not experiencing bodily ailments and functional disabilities as contributing to psychological distress can be understood as a psychological resource factor according to the model of selective optimization with compensation (Baltes, 1997; Baltes & Carstensen, 1996; Lang, Rieckmann, & Baltes, 2002). This model implies that old persons will reduce the number of activities performed, spend more time and effort on selected tasks and activities, change or find new goals to strive for, or develop alternative ways of reaching already existing goals. This development implies an acceptance of, and a compensation for, losses of functional capacity. In short, older people adjust their goals to their capacities. With this attitude toward 'objective' health problems and dysfunctions of various kinds, old people may sustain their psychological well-being. The model of selective optimization with compensation shares many features with the sense of coherence concept.

Sense of coherence is a general coping resource, close to a trait, that pertains to a general feeling of exerting control, being able to influence one's own life, but also achieving control by relying on others' control and help (Antonovsky, 1987; Sullivan, 1993). The sense of coherence is suggested to be a concept of inner strength (Dingley, Roux, & Bush, 2000; Nygren et al., 2005). One of the consequences of inner strength is reported to be psychological health (Eriksson & Lindstrom, 2005, 2006; Nygren et al., 2005). Similarly, in this study, sense of coherence covaried with psychological distress. One could, of course, question whether sense of coherence and psychological health simply encompass the same phenomena (Feldt, Metsäpelto, Kinnunen, & Pulkkinen, 2007; Korotkov, 1993). However, a meta-analysis has concluded that sense of coherence is not the same as, but an important predisposition for, the development and maintenance of mental health (Eriksson & Lindstrom, 2006). SOC is found to be a complex dispositional trait, where parts of it appear to refer to an active and dynamic disposition that encourages active coping (Pallant & Lae, 2002; Johnson, 2004).

### Limitations

The refusal rate was 22%, and 13.2% were excluded from the analyses due to missing data. This may limit the generalization of our findings. For ethical reasons, information about differences between participants and non-participants was not available. The cross-sectional nature of the study prevented analysis of the direction of associations and the possible influence of other factors. Indeed a search for such directions may be futile because the relationship between psychological distress and health status is interactional/bidirectional (Menchetti, Fava, & Beradi, 2001). It is possible that the level of psychological distress was low because persons with severe or moderate dementia were excluded from the sample. Depression is often combined with dementia, another major contributory factor to psychological distress in old age (Blazer, 2003). They were excluded, however, because of the impossibility of collecting valid data from them.

### Conclusions

This study found that the general level of psychological distress was low in this sample of persons aged 75 years and above, living at home and receiving nursing care. A high sense of coherence seems to predispose disabled elderly persons to experience less psychological distress by predisposing them to ignore, re-interpret, and compensate for the impact of negative health events.

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