

ORIGINAL ARTICLE

## Meaning-in-life in nursing-home patients: a correlate with physical and emotional symptoms

Gørill Haugan

**Aims and objectives.** To investigate the prevalence of physical and emotional symptoms and the associations between symptoms and meaning-in-life in a cognitively intact nursing-home population.

**Background.** Meaning has been found to be a strong individual predictor of successful ageing and life satisfaction as well as an important psychological variable that promotes well-being. Meaning serves as a mediating variable in both psychological and physical health.

**Design and methods.** The study employed a cross-sectional design. Data were collected in 2008 and 2009 using the QLQ-C15-PAL quality-of-life questionnaire, the purpose-in-life test and the Hospital Anxiety and Depression Scale. A total of 250 cognitively intact nursing-home patients who met the inclusion criteria were approached and 202 attended.

**Results.** The prevalence of symptoms was fairly high, with fatigue (57%), pain (49%), constipation (43%) and dyspnoea (41%) as the most frequent physical symptoms, while 30% were depressed and 12% had anxiety. Significant correlations between meaning-in-life and symptom severity were displayed.

**Conclusions.** The level of symptom severity among cognitively intact nursing-home patients is high, requiring highly competent staff nurses. Meaning-in-life might be an important resource in relation to a patient's physical and emotional health and global well-being.

**Relevance to clinical practice.** Facilitating patients' meaning-in-life might help reducing symptom severity and fostering quality of life in cognitively intact nursing-home patients. However, advancing staff nurses' competence in palliative care, symptom management and nurse-patient interaction is important for care quality and quality of life in nursing homes.

**Key words:** meaning and purpose-in-life, nursing-home patients, quality of life, symptoms

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### Introduction

The life expectancy of the population is increasing worldwide, and the most rapidly growing segment is people more than 80 years old (Kinsella & He 2009). By 2050, the percentage of those 80 and older will be 31%, up from 18% in 1988 (OECD 1988). These perspectives have given rise to the notions of the 'third age' (more than 80 years old) and the 'fourth age' (over 80 years old) in the lifespan developmental literature (Baltes & Smith 2003), which are also referred to as the 'young old' and the 'old old' (Kirkevold

2010). For many of those in the fourth age, issues such as physical illness and approaching mortality reduce their functioning and lead to the need for nursing-home (NH) care.

The NH population is generally marked with high age, physical impairment and high mortality. In Norway, the mean age is 85 years and the annual mortality is approximately 35%; five-year survival is approximately 10%, while the mean duration of residence in Norwegian NHs is two–three years (Høie 2005). In fact, the long-term care facility represents the 'last stop' on a persons' journey through life; the majority of patients in NHs die within

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two years from multiple medical pathologies (Hall *et al.* 2009). In Norway, approximately 40% of all deaths each year happen in NHs (Statistics of Norway 2010). By 2020, it is projected that half of all deaths in the United States will occur in NHs (Last Acts 2002). Therefore, in general, cognitively intact NH patients are in the last phase of life and might be in great need of palliative care (Emilsdóttir & Gústafsdóttir 2011), and the quality of that care will affect many individuals and their families worldwide.

Generally, high incidence of chronic illness and functional impairments characterise long-term care patients, representing complex medical states typified by many different, simultaneous diagnoses; they require different types of medical treatment for palliation, not to cure their illness (Linton & Lach 2007). Typically, NH patients are marked by frailty and vulnerability. The most common diagnoses are dementia (40–48%), stroke (15–19%), chronic heart disease (5–6%), hip fracture (3–4%) and arthritis (3%) (Nygaard 2002). Approximately nine of 10 need help washing and dressing and are not capable of walking up a stairway. Three of four cannot feed themselves, and all need help getting to the lavatory, while two of three patients never read a paper (Høie 2005).

Pain, dyspnoea, incontinence, fatigue and problems with personal cleanliness are the most common physical symptoms in NHs, while depression, anxiety and loneliness are common emotional symptoms (Reynolds *et al.* 2002, Jongenelis *et al.* 2004, Tsai *et al.* 2005, Achterberg *et al.* 2006, Brownie & Horstmanshof 2011). More depressive symptoms and a lower QoL have been reported among NH patients than in community-dwelling older individuals (Jongenelis *et al.* 2004, Karakaya *et al.* 2009). Furthermore, inadequate pain management has been a significant problem in NHs, as well as respiration symptoms (Teno *et al.* 2001, Buchanan *et al.* 2004, Goodridge *et al.* 2005, Dumas & Ramadurai 2009, Jablonski & Ersek 2009, Takai & Uchida 2009, Torvik *et al.* 2009, 2010). Previous research demonstrates that nurses in long-term care were not knowledgeable about comfort and palliative care (Sloman *et al.* 2001, Raudonis *et al.* 2002, Oliver *et al.* 2004, Wowchuk *et al.* 2007, Davies & Cripacc 2008, Hall *et al.* 2011, Brazil *et al.* 2012), and NH patients' depression has been found to be unrecognised and inadequately treated (Ayalon *et al.* 2008, Piven *et al.* 2008, Davison *et al.* 2009). Therefore, insight into the prevalence of common symptoms such as pain, dyspnoea, fatigue, insomnia, constipation, depression and anxiety in NH patients is important with respect to quality of life (QoL) and care quality. However, research identifying symptom severity and care needs among cognitively intact NH patients is scarce.

The concept of QoL comprises physical, emotional, social, functional and spiritual dimensions (Rannestad 2005). It is based on the holistic perspective of body–mind–spirit stating that each of these elements is interconnected and that one affects the others (Glaister 2001, Narayanasamy *et al.* 2004, Guzzetta 2005, Quinn 2005). Consequently, the experience of spiritual, emotional and social well-being might contribute to positive health in terms of the effective functioning of multiple biological systems, which are supposed to help keep an organism from succumbing to disease, or when illness or adversity occurs, help promote rapid recovery (Kirby *et al.* 2004, Ryff *et al.* 2004, Carpenter *et al.* 2008).

As a vital aspect of spirituality, meaning is of particular importance to QoL for many older adults (Knestrick & Lohri-Posey 2005, Wallace & O'Shea 2007, Hedberg *et al.* 2011) in NHs (Hicks 1999, Kane 2001, 2003, Touhy 2001, Touhy *et al.* 2005) and at the end of life (Touhy *et al.* 2005, Van Nordennen & Ter Meulen 2005, Hermann 2007, Mount *et al.* 2007, Daaleman *et al.* 2008). Meaning and spiritual well-being have been described as predictors of overall NH satisfaction (Burack *et al.* 2012) and as important dimensions of mental well-being in very old populations and NH patients (McKinley & Adler 2005, Hedberg *et al.* 2011). Therefore, research suggests that meaning and purpose-in-life are resources in maintaining not only emotional well-being, but also physical and functional well-being. Considerable correlations among physical health, emotional adjustment and meaning-in-life in older adults have been demonstrated (Isaia *et al.* 1999). Furthermore, studies suggest that such correlates include lower rates of mortality from all causes such as less cardiovascular disease, less hypertension, better immune function, less sensation of abuse, less depression and better coping with and recovery from illness (Koenig *et al.* 1997, 2004, Chibnall *et al.* 2002, Starkweather *et al.* 2005). Meaning seems to serve as a mediating variable in psychological health (Low 2005, Halama & Dedova 2007, Low & Molzahn 2007, Holahan *et al.* 2008, Chan 2009, Ho *et al.* 2010, Kleftras & Psarra 2012) and physical health (Canada *et al.* 2008), and it has been found to be associated with mortality (O'Connor & Vallerand 1998, Boyle *et al.* 2009, Krause 2009), fatigue and overall symptoms in breast cancer survivors (Thompson 2007) and psychosomatic disorders (Mausch 2008).

Purpose-in-life (PIL) as a concept originates from Frankl's writings about the will to meaning as the primary motivational force for survival, which perceives meaning to be a motivational and vitalising force in humans' lives (Frankl 1963, 1978). To find meaning is to understand the nature

of one's life and to feel that life is significant, important, worthwhile or purposeful (*ibid.*). Purpose and meaning-in-life have been interpreted as a set of attitudes and viewpoints that makes the world comprehensible, such as having goals to strive for and relating to other people, nature or a higher power. Purpose refers to intention in terms of achieving personal aims, whereas meaning refers to establishing a sound coherence in one's existence (Wong & Fry 1998, White 2004, Hedberg *et al.* 2010). In accordance with Frankl (Frankl 1963, 1978), this article uses meaning and purpose synonymously.

In summary, the reviewed literature suggests that NH patients generally are marked by complex medical states typified by many different, simultaneous diagnoses; hence, the majority die within two years from multiple medical pathologies. However, insight into the prevalence of common symptoms in this population is limited. QoL is often compromised in long-term care settings, but spirituality and in particular meaning-in-life are found to have a significant association with QoL in older NH patients. Meaning seems to mediate physical and emotional well-being, and it is a vital resource for QoL in this population.

## Aims

The aim of this study was to investigate the frequency of common symptoms in cognitively intact NH patients. This study also aimed to explore the associations between common symptoms and meaning-in-life by correlating the PIL construct with selected health-related QoL measures such as pain, fatigue, nausea and vomiting, insomnia, constipation, appetite loss, physical and emotional functioning, and anxiety and depression. To determine whether meaning was more fundamental than other closely related aspects such as hope and self-transcendence, these constructs, measured by the Herth Hope Index and the Self-Transcendence Scale, were included in the correlational analysis.

## Methods

### Design and ethical considerations

The study employed a cross-sectional design. The data were collected in 2008 and 2009 from 250 NH patients who met the inclusion criteria: (1) local authority's decision of long-term NH care; (2) residential time of six months or longer; (3) informed consent competency recognised by a responsible doctor and nurse; and (4) capable of being interviewed. Two counties comprising in total 48 municipalities in central Norway were selected, from which 25 (at

random) were invited to contribute in this study. In total, 20 municipalities were partaken. Then, all the NHs in each of the 20 municipalities were asked to participate. A total of 44 NHs took part in the study. To include as many participants from rural and central NHs, respectively, the NHs were invited one by one to participate, until the minimum of  $n = 200$  was reached. The NH patients were approached by a head nurse they knew well. The nurse presented them with oral and written information about their rights as participants and their right to withdraw at any time. Each participant provided informed consent. Because this population has problems completing a questionnaire independently, three trained researchers conducted one-on-one interviews in private. Researchers with identical professional backgrounds were selected (RN, MA, trained and experienced in communication with elderly, as well as teaching gerontology at an advanced level) and trained to conduct the interviews as identically as possible. Inter-rater reliability was assessed by comparing mean scores between interviewers using Bonferroni-corrected one-way ANOVAS. No statistically significant differences were found that were not accounted for by known differences between the areas in which the interviewers operated.

The questionnaires used were part of a larger questionnaire with 130 items. Interviewers held a large print copy of questions and possible responses in front of the participants in an effort to avoid misunderstandings. Approval by the Norwegian Social Science Data Services (Ref. no 16443), and approval from The Regional Committee for Medical and Health Research Ethics in Central Norway (Ref. no. 4-2007-645), was obtained for a licence to maintain a register containing personal data, and the management units at the 44 NHs were attained.

### Sample

The total sample consisted of 202 (response rate = 80.8%) of 250 long-term NH patients representing 44 NHs. Long-term NH care was defined as 24-hour care; short-term care patients, rehabilitation patients and patients suffering from dementia were not included. Table 1 shows sample characteristics.

### Measures

Common symptoms were assessed by the QLQ-C15-PAL, a core palliative care questionnaire (Groenvold *et al.* 2006). The QOL-C15-PAL is an abbreviated 15-item version of the EORTC QLQ-C30, made up of two multi-item functional scales (physical and emotional functioning), two

Table 1 Sample characteristics

	Total sample	Females	Males
Demographic variables	<i>n</i> = 202	146 (72.3%)	56 (27.7%)
	Mean (SD)	Mean (SD)	Mean (SD)
Age	85.87 (7.65)	87.34 (6.76)	82.02 (8.51)
Residential time	2.53 (2.25)	2.47 (2.20)	2.69 (2.37)
	Frequency	Frequency	Frequency
Marital state			
Married	36	11	25
Widowers	135	111	24
Divorced	11	7	4
Single	18	16	2
Partner	2	1	1
Nursing-home classification			
Rural nursing home	117	85	32
Central nursing home	85	61	24

Age and residential time are given in years.

multi-item symptom scales (fatigue and pain), along with five single-item symptom scales (nausea/vomiting, dyspnoea, insomnia, appetite loss, constipation), and 1 final question referring to overall QoL. Each item is rated on a numeric scale from 1 (*not at all*)–4 (*very much*), except for the global QoL that is rated from 1 (*very poor*)–7 (*excellent*) (ibid.). The EORTC QLQ-C30 scoring manual and the QLQ-C15-PAL scoring addendum (Fayers *et al.* 2001) were used to generate the QLQ-C15-PAL scores (0–100) for the two-item and the single-item subscales. The QLQ-C15-PAL has demonstrated good content validity (Groenvold *et al.* 2006). A Norwegian version validated for patients with cancer was used (ibid.); Cronbach's  $\alpha$  was 0.78.

Meaning-in-life was assessed by the purpose-in-life (PIL) test. The PIL is primarily regarded as a quantitative measure. Nevertheless, it is composed of several parts. In this study, part A entailing 20 Likert-type attitude statements ranging from 1–7 was used, yielding information that is easy to quantify and compare across samples (Crumbaugh & Henrion 1988, Hutzell 1988). Test items include questions such as 'My personal existence is very purposeful and meaningful' and 'In achieving life goals, I have progressed to complete fulfilment'. Each statement is scored from 1–7 where four represents a neutral value, and the numbers from 1–7 stretch along a continuum from one extreme feeling to the opposite kind of feeling. The range of possible scores is 20–140, and numerically higher scores reflect increased purposefulness (Crumbaugh & Maholick 1969, 1981). The PIL scores are classified into three groups, reflecting low, medium and high PIL; scores above 112 indicate the presence of definite meaning- and purpose-in-life, scores between 92–112 are in

the indecisive range, and scores below 92 indicate a lack of a clear purpose- and meaning-in-life (Crumbaugh & Maholick 1969, 1981). The PIL was translated into Norwegian by Bondevik (1997), and it has been used with older individuals up to 103 years of age (Ebersole & DePaola 1987, 1989, Sheth 1990, Bondevik & Skogstad 2000, Flood & Scharer 2006). Content and concurrent validity have been reasonably well established (Crumbaugh & Henrion 1988), and test-retest reliability was 0.83 (Meier & Edwards 1974). The PIL has consistently demonstrated satisfactory internal, temporal and concurrent validity across studies (Crumbaugh & Maholick 1969, 1981, Ryff 1989, Debats 1990, Zika & Chamberlain 1992, Steger *et al.* 2006). Cronbach's  $\alpha$  was 0.82 in this study.

Anxiety and depression were assessed by the 14-item Hospital Anxiety and Depression Scale (HADS), with subscales for anxiety (HADS-A, seven items) and depression (HADS-D, seven items). Each item is rated from 0–3, and higher scores indicate more anxiety and depression. The maximum score is 21 on each subscale. The ranges of scores for cases are as follows: 0–7 normal, 8–10 mild disorder, 11–14 moderate disorder and 15–21 severe disorder (Snaith & Zigmond 1994). HADS has been tested extensively, and it has well-established psychometric properties (Herrmann 1997). To increase acceptability and avoid individuals feeling as though they are being tested for mental disorders, symptoms of severe psychopathology have been excluded. This makes HADS more sensitive to milder psychopathology (Stordal *et al.* 2003). HADS was translated into Norwegian and found to be valid for older people (Stordal *et al.* 2001, 2003). The items were scored on a four-point scale ranging from *totally disagree* to *totally agree*. The internal consistency of the anxiety and depression constructs (Table 1) was satisfactory:  $\alpha = 0.79$  and  $\alpha = 0.66$ , respectively.

Hope was measured by the Herth Hope Index (HHI) with 12 items using a 4-point Likert response format (from *strongly disagree* to *strongly agree*). Possible scores ranged from 12–48, with higher scores indicating greater hopefulness. The HHI is psychometrically evaluated in different adult samples supporting the validity and reliability; the internal consistency coefficient ranged from 0.84–0.97 (Herth 1992, Benzein & Berg 2003, Wahl *et al.* 2004, Phillips-Salimi *et al.* 2007, Van Gestel-Timmermans *et al.* 2010). Cronbach's  $\alpha$  in the present study was 0.76.

Self-transcendence was assessed by the Self-Transcendence Scale (STS) reflecting expanded boundaries of the self (Reed 1986, 2008). The STS has 15 items rated on a four-point Likert-type scale from 1.0 (*not at all*) to 4.0 (*very much*); higher scores indicate higher self-transcendence. In

former studies, Cronbach's  $\alpha$  ranged from 0.80–0.88 (Reed 1991, 2009, Runquist & Reed 2007). Content validity is adequate, based on a thorough review of empirical and theoretical literature (Reed 2008). Support for construct validity has been found in the relationships of self-transcendence scores to other measures (Coward 1990, 1996). A recently documented two-factor construct of self-transcendence (Haugan *et al.* 2011) is used for the purpose of this study, with Cronbach's  $\alpha = 0.76$  and  $0.64$ , respectively.

### Statistical analysis

Data were analysed by the descriptive and correlational statistics using PASW version 18, the predictive analytics software, which earlier was called SPSS, the Statistical Package for the Social Sciences. Correlational analyses were performed to determine the relationship between meaning-in-life and common symptoms. Missing data were low in frequency (4% for QLQ-C15\_PAL, PIL, self-transcendence, hope, anxiety and depression) and were handled by means of the pairwise procedure.

### Results

Sample characteristics are shown in Table 1. Table 2 shows the means, standard deviations, Cronbach's alpha and correlation coefficients for the study variables. The correlations between the measures were moderate and in the expected direction. The  $\alpha$ -levels for the various measures indicated an acceptable level of interitem consistency in the measures with Cronbach's  $\alpha$  coefficient of  $0.64$  and higher.

Figure 1 shows the prevalence of symptoms including frequency for the QLQ items 1–14, and Table 3 lists means for the QLQ subscales, showing that fatigue, pain, constipation and dyspnoea were the most common physical

symptoms. The patients' emotional function revealed a high mean score, suggesting that tension and a depressive mood were scarcely prevalent. However, the HADS scores showed that approximately 30% were depressed and 12% had anxiety. The means for overall QoL was  $4.93$  ( $SD = 1.420$ ).

In this study, 8.9% (18) of the NH patients reported high meaning, 45% (91) reported indecisive meaning, and 43.6% (88) reported low meaning (Table 4). The PIL score ranged from 43–131 with a mean of  $93.09$  ( $SD 14.85$ ). Females scored ( $93.60$ ,  $SD 15.10$ ) slightly higher than the males ( $91.75$ ,  $SD 14.22$ ). Independent t-tests for mean differences (data not shown) revealed no significant differences in PIL mean scores between females and males. The PIL mean score decreased marginally with age, showing means of  $95.5$  in patients  $>80$  years old,  $91.97$  in the group aged 80–89 and  $93.32$  for those 90 years and older.

### Relationships between meaning and symptoms

The correlations between symptoms and meaning were moderate and in the expected directions. Pearson's correlational coefficient ( $r$ ) displayed significant values for the PIL construct to all symptoms, except pain, appetite loss and constipation. The highest correlations were found, as expected, between PIL and depression ( $r = -0.555$ ), overall QoL ( $r = 0.457$ ) and emotional functioning ( $r = 0.326$ ). Although moderate values, significant correlations were revealed between meaning and physical symptoms such as nausea/vomiting ( $r = -0.310$ ), insomnia ( $r = -0.281$ ), fatigue ( $r = -0.172$ ) and dyspnoea ( $r = -0.156$ ). To explore whether meaning was more fundamental than other closely related aspects such as hope, interpersonal (ST-1) and intrapersonal (ST-2) self-transcendence, these constructs were included in the correlational analysis. Table 5 demonstrates that meaning (PIL) presented the most significant correla-

**Table 2** Means (M), standard deviations (SD), Cronbach's alpha and correlation coefficients for the study variables

Construct	M	SD	Cronbach's alpha	Correlation coefficients Pearson's $r^2$			
				PIL	Hope	ST-1	ST-2
PIL	2.85	0.34	0.75	1			
HOPE	2.94	0.347	0.77	0.663**	1		
ST-1	2.54	0.559	0.76	0.464**	0.586**	1	
ST-2	3.06	0.331	0.64	0.332**	0.430**	0.260**	1
HADS-A	0.400	0.500	0.79	-0.285**	-0.191**	-0.063	-0.255**
HADS-D	0.740	0.580	0.66	-0.555**	-0.513**	-0.350**	-0.306**

PIL, Purpose-in-life; ST-1, interpersonal self-transcendence; ST-2, intrapersonal self-transcendence; NPIS, nurse-patient interaction; HADS-A, anxiety; HADS-D, depression.

\*Significant at the 5% level.

\*\*Significant at the 1% level.

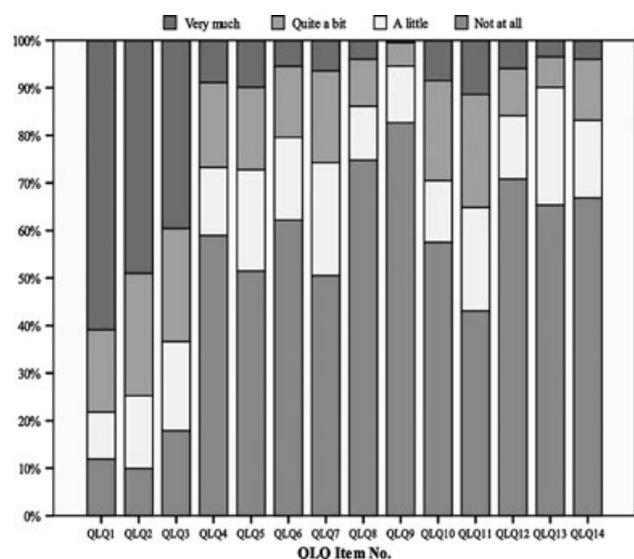


Figure 1 The prevalence of physical and emotional symptoms assessed by means of the QLQ-C15-PAL items 1–14.

tions with the common symptoms assessed. Therefore, in the present study, meaning was more crucial to NH patients than hope or interpersonal and intrapersonal self-transcendence.

Figure 2 portrays the symptom profiles sorted by high, indecisive and low PIL scores, respectively. As seen in Fig. 2, patients with a high PIL score showed the lowest prevalence of symptoms and better physical and emotional function than patients with lower PIL scores, revealing more symptoms and lower physical and emotional function.

Table 3 Prevalence of common symptoms in NH patients; means and standard deviations (SD)

QLQ-C15-PAL Subscales	Males <i>n</i> = 56		Females <i>n</i> = 146		Total sample <i>n</i> = 202	
	Mean	SD	Mean	SD	Mean	SD
QLQ physical functioning	18.809	24.941	22.649	25.692	21.585	25.483
QLQ fatigue	28.170	31.287	34.245	30.123	32.560	30.494
QLQ nausea and vomiting	2.384	8.064	5.940	15.005	4.954	13.519
QLQ emotional functioning	89.729	15.887	80.936	24.203	83.373	22.521
QLQ pain	18.446	30.059	25.640	29.863	23.646	30.016
QLQ dyspnoea	18.452	31.088	28.311	35.524	25.578	34.560
QLQ insomnia	22.024	30.001	20.920	31.413	21.227	30.956
QLQ appetite loss	13.690	28.268	14.612	27.396	14.612	27.573
QLQ constipation	23.214	30.431	28.241	36.412	26.833	34.840
HADS-anxiety (12%)	3.03	2.903	2.99	3.383	3.03	2.903
HADS-depression (30%)	8.59	5.079	8.40	6.078	5.57	z3.238

Common symptoms assessed by the QLQ-C15-PAL questionnaire and the Hospital Anxiety and Depression Scale (HADS).

Table 4 Purpose-in-life (PIL): high, indecisive and low PIL: frequency, means and standard deviations (SD)

	Frequency	Per cent	Mean	SD
High PIL	18	8.9	120.25	9.85
Indecisive PIL	91	45.0	100.00	5.71
Low PIL	88	43.6	80.124	9.85

High PIL = PIL scores from 113–140, Indecisive PIL = PIL scores from 92–112, Low PIL = PIL scores from 1–91.

## Discussion

The aim of this study was to explore the level of symptom severity and the associations between physical and emotional symptoms and perceived meaning-in-life in cognitively intact NH patients. By doing so, this study contributes to a nursing perspective of promoting QoL in NH patients in three ways: (1) by exploring the prevalence of common symptoms, this study contribute to the growing body of knowledge about cognitively intact NH patients' QoL and specific needs for care; (2) empirical insight into the associations between perceived meaning-in-life and symptoms in a NH population is provided; and (3) this study facilitates the generation of hypotheses regarding the body–mind–soul interaction and more specifically the associations between symptoms and a sense of meaning-in-life. The present results indicate that nursing strategies promoting meaning-in-life might benefit NH patients' physical and emotional health and global QoL.

The prevalence of symptoms showed that a majority of NH patients in this study experienced fatigue (56%) and

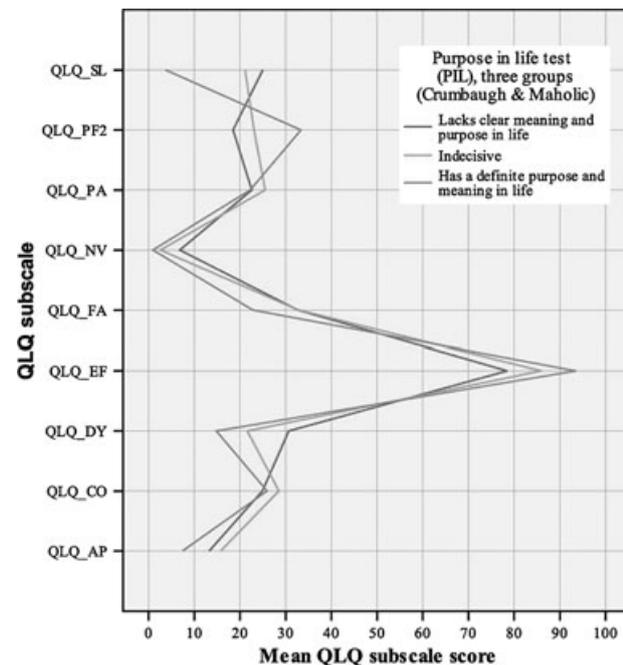
**Table 5** Pearson's correlational coefficient and standard deviations (SD)

	PIL	(SD)	HOPE	(SD)	ST-1	(SD)	ST-2	(SD)
QLQ physical functioning	0.148*	0.040	0.058	0.420	-0.101	0.159	0.094	0.195
QLQ fatigue	-0.172*	0.017	-0.123	0.089	-0.056	0.433	-0.131	0.068
QLQ nausea/vomiting	-0.310**	0.000	-0.217**	0.002	-0.079	0.279	-0.143*	0.047
QLQ emotional functioning	0.326**	0.000	0.240**	0.001	0.101	0.161	0.158**	0.028
QLQ pain	-0.092	0.204	-0.125	0.083	-0.092	0.199	-0.083	0.251
QLQ dyspnoea	-0.156*	0.030	-0.137	0.058	-0.025	0.728	-0.056	0.436
QLQ insomnia	-0.281**	0.000	-0.230**	0.001	-0.231**	0.001	-0.149*	0.039
QLQ appetite loss	-0.081	0.262	-0.088	0.225	-0.060	0.407	-0.051	0.476
QLQ constipation	-0.033	0.647	0.009	0.903	-0.094	0.192	-0.037	0.613
QLQ quality of life	0.457**	0.000	0.332**	0.000	0.167*	0.020	0.336**	0.000
HADS-A	-0.285**	0.000	-0.191**	0.008	-0.063	0.384	-0.255**	0.000
HADS-D	-0.555**	0.000	-0.513**	0.000	-0.350**	0.000	-0.306**	0.000

PIL, purpose-in-life; ST-1, interpersonal self-transcendence; ST-2, intrapersonal self-transcendence; HADS-A, anxiety; HADS-D, depression.

\*\*Correlation is significant at the 0.01 level.

\*Correlation is significant at the 0.05 level.



**Figure 2** The symptom profiles for groups of NH patients based on PIL score level. Symptoms are assessed by means of the QLQ-C15-PAL subscales: QLQ\_SL, insomnia; QLQ\_PF2, physical functioning; QLQ\_PA, pain; QLQ\_NV, nausea/vomiting; QLQ\_FA, fatigue; QLQ\_EF, emotional functioning; QLQ\_DY, dyspnoea; QLQ\_CO, constipation; QLQ\_AP, appetite loss.

pain (49%), while 43 and 41% experienced constipation and dyspnoea, respectively. Thirty-eight per cent had insomnia, 25% suffered from lack of appetite, and 18% had nausea/vomiting. Thus, cognitively intact NH patients report a fairly high level of physical symptoms, indicating a great need for nursing care requiring highly competent staff nurses. Patients' physical functioning was low, but their emotional

functioning was quite sound. However, the prevalence of depression measured by the HADS questionnaire indicated that 30% were depressed and 12% experienced anxiety. This is in accordance with previous studies reporting a prevalence rate of depressive symptoms between 14–42% in institutional living (Djernes 2006) as well as 3–4 times higher prevalence in institutionalised elders than among community-dwelling older individuals (Jongenelis *et al.* 2004).

Conversely, a similar prevalence of depression (31%) among older people aged 75 years or more living at home has been documented (van't Veer-Tazelaar *et al.* 2008), as well as a significant increase in depression in all age cohorts from 76 years, with the greatest increase in the individuals aged 86–90 years (Solhaug *et al.* 2012). Thus, research indicates that age is a risk factor for depression. This idea was recently supported—old age, male, perceiving general health as poor and having impaired ability to function in daily life, were associated with increased odds for depression in the elderly (Helvik *et al.* 2012). The mean age in this study was 86 years: 87 years for females and 82 years for males. Cognitively intact NH patients are at large marked by old age, poor health and impairments, and are in great risk for depression. Therefore, NH caregivers' awareness of and competence in assessing depressive symptoms are essential to NH patients' QoL and care quality.

In general, older people do not experience much less meaning-in-life than other age groups (Pinquart 2002, Low 2005, Low & Molzahn 2007). However, one might expect that the search for meaning poses particular challenges for older individuals residing in NHs; significantly lower scores on meaning have been found in NH patients than in community-dwelling elderly (Bondevik & Skogstad 2000). The PIL mean score was 93.09 (SD 14.85) in this study, which

is in accordance with previous research in NHs (Bondevik & Skogstad 2000). The present PIL mean score, indicating that NH patients suffer from a lack of meaning-in-life, was lower than previous research in older people, with means of 105 (Hedberg *et al.* 2010), 99–106 (Sarvimäki & Stenbock-Hult 2000) and 106–113 (Krawczynski & Olszewski 2000). Therefore, living in a NH might result in a lower meaning-in-life and increased risk for depression. A correlational analysis displayed highly significant values between depression and meaning in this study.

Significant correlations between meaning and symptoms were demonstrated in this study, the most significant of which regarded physical symptoms dyspnoea and insomnia. Also, the symptom profiles of groups of NH patients based on PIL scores showed that a high PIL score was followed by lower symptom severity and better physical and emotional function. Accordingly, meaning-in-life seems to be a vital resource for global QoL among cognitively intact NH patients, including both physical and emotional health. When exploring the associations between symptoms and meaning-related concepts of hope and self-transcendence, meaning was the most noteworthy variable related to symptoms. As the experience of meaning is fundamental to humans (Wong & Fry 1998, King *et al.* 2006, Schulenberg *et al.* 2009), meaning has become one of the core facets of the positive psychology movement (Schulenberg *et al.* 2009) and in the health promotion field. Towards the end of life, meaning has been found to predict higher psychospiritual functioning, having the potential to buffer an individual's reaction to stressful life experiences (Bauer-Wu & Farran 2005, Krause 2007). Hence, meaning- and purpose-in-life provide a framework for coping with illness, losses, loneliness, perceived burdensomeness, despair and death anxiety (Knestrick & Lohri-Posey 2005, Dwyer *et al.* 2008, Hou & Chen 2008, Thomas *et al.* 2010, Van Orden *et al.* 2012). Therefore, facilitating meaning might be a central nursing intervention in NH care.

On the other hand, the causality of the associations between meaning and symptoms is not obvious, signifying that NH patients suffering from dyspnoea, pain, fatigue and constipation might perceive a lower PIL due to these annoying plagues. Living with numerous illnesses and symptoms will affect an individual's QoL and might also influence on the sense of meaning. Symptom severity has been associated with depression (Wouts *et al.* 2008, Alschuler *et al.* 2012, Fahland *et al.* 2012, Hilderink *et al.* 2012). Thus, nursing intervention aimed at fostering patients' meaning-in-life might not be successful unless the symptom burdens are lessened. Consequently, enhancing NH caregivers' competence in palliative care, relieving

physical, emotional and existential suffering, is crucial in NHs.

Nonetheless, the attributes of QoL in NHs are different from those in acute medical care settings such as hospitals. The differences stem from the characteristics of the NH patients, their care needs, the circumstances and settings in which the care is provided, the expected outcomes, and the fact that for long-term patients, the NH is their home, not merely a temporary abode where they are being treated for a medical problem. Therefore, meaning-in-life has been identified as a core dimension of QoL and coping in older adults (Sarvimäki & Stenbock-Hult 2000, Dempsey 2004, Low 2006, Lowe & McBride-Henry 2012). Furthermore, for many older people, talking is the most important 'activity' at care homes (Andersson *et al.* 2007). Recent research found that nurse–patient interaction is a crucial resource for easing NH patients' anxiety and depression (Haugan *et al.* 2012), and creating hope (Haugan *et al.* 2013) and perceived meaning-in-life (Haugan 2013). Accordingly, nurse–patient interaction might mediate the association between meaning, depression, emotional state and physical symptoms. Further research is needed to investigate these relationships.

## Limitations

This study expands previous research by exploring the prevalence of physical and emotional symptoms in cognitively intact NH patients, as well as the associations between meaning-in-life and symptom severity in a NH population. Nevertheless, the findings from this study must be discussed with some limitations in mind.

One limitation concerns the use of self-reported data, which implies a certain risk that the findings are based on common-method variance (Podsakoff *et al.* 2003). Also, the fact that researchers helped the participants complete the questionnaires might have introduced some bias into respondents' reporting, although statistical tests showed no significant differences between responses based on interviewers. Furthermore, the questionnaires used were part of a battery of nine questionnaires made up of 130 items. Therefore, frail NH patients might tire when completing the questionnaires representing a possible bias to their reporting. To avoid this, experienced researchers were carefully trained to conduct the interviews following a standardised procedure, including short breaks at specific points during the process. This procedure worked out very well; in just three cases, the interview had to be completed the next day due to respondents' fatigue. In fact, most participants were even more vigorous after completing the interview.

In addition, the sample in this study was not a representative unbiased indication of the whole cognitively intact NH population. Therefore, a sampling error might be a possible bias, and the prevalence of symptoms and the associations found in this study needs further investigation. However, the sampling was conducted by the responsible doctor and nurse in each ward, in accordance with the inclusion criteria. The fact that as much as 44 different NHs were involved decreases the probability of bias due to culture differences among different NHs. Also, the sample comprises 117 participants from 16 rural NHs and 85 participants from 28 urban NHs, which is a strength. Nevertheless, this study addressed cognitively intact NH patients who might have severe physical illnesses and impairment, which could have influenced how they responded on meaning, hope and self-transcendence. Hence, the relationships between symptoms and meaning have to be further explored and examined.

## Conclusion

This study suggests that cognitively intact NH patients are marked by physical and emotional symptoms that are a detriment to their QoL. Consequently, highly competent staff nurses in providing palliative care are needed in NHs. Facilitating NH patient's meaning-in-life might be useful to reducing symptom severity and to nurturing QoL in cognitively intact NH patients. However, staff members are generally poorly trained in nurse-patient

interaction facilitating meaning. Accordingly, advancing nurse-patient interaction to provide patients' sense of meaning-in-life might promote well-being and prevent despair, depression and symptom severity.

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## Contributions

Study design: GH; data collection and analysis: GH and manuscript preparation: GH.

## Supporting information

Additional Supporting information may be found in the online version of this article:

**Appendix S1.** Measurement instrument: QLQ-C15-PAL. Frequency of common symptoms and QoL mean-score.

**Appendix S2.** Measurement instrument: Hospital Anxiety and Depression Scale (HADS): means and standard deviations (SD).

**Appendix S3.** Measurement Instrument: Purpose-in-Life test (PIL): means and standard deviations (SD).

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