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Morale in very old people who have had a stroke

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ABSTRACT

Stroke incidence increases with age and may impact on morale. The aim of this study was to investigate the prevalence of stroke among individuals aged 85 years or older in Northern Sweden and Western Finland and to evaluate factors associated with morale among those who have had a stroke compared with those without a stroke history. This population-based, cross-sectional study included 708 individuals (504 women and 204 men) aged 85 years and older (range 85–107). The study was conducted through structured interviews during home visits and from reviews of medical records, where demographic data and health-related factors were collected. The 17-item Philadelphia Geriatric Center Morale Scale (PGCMS) was used to assess morale. Stroke-prevalence was 22% (156 of 708) in the study population. Ninety-one of 465 participants who could answer PGCMS questions had had a stroke. Those with stroke had significantly lower PGCMS scores than those without (10.9 ± 3.8 SD vs. 12.1 ± 3.0 SD, *p*-value 0.008), but 38.5% had high morale. A multiple linear regression analysis showed that low morale was independently associated with depression, angina pectoris and impaired hearing among those with stroke and another multiple linear regression, among those without a stroke history, showed that low morale was independently associated with depression, pain and poor nutritional status. A large proportion of very old have had stroke which is associated with reduced morale. Low morale among those with stroke was independently associated with depression, angina pectoris and impaired hearing which could be the focus for future intervention studies.

1. Introduction

Stroke is a major health problem and the incidence increases with age. Many western-European countries have a large and increasing proportion of people aged 85 year or older. The World Health Organization (WHO) estimates that approximately 10% of people aged 85 years and above have had a stroke in most Western European countries (Truelsen et al., 2006). One Swedish study showed a stroke prevalence of 18.8% among 85-year-olds, using multiple information sources: self-reported, key informant, focal neurological signs and medical records (Liebetrau, Steen, & Skoog, 2003).

Stroke in many cases is a sudden and life changing disease and might lead to poor quality of life. There is general agreement that the effects of stroke treatment should be measured in terms of quality as well as quantity of survival (Buck, Jacoby, Massey, & Ford, 2000; Carod-Artal & Egido, 2009). There are a number of different assessment scales for quality of life (QoL) making it difficult to compare the results of different studies in the field. After reviewing a number of quality-of-life instruments the British Geriatrics Society and the Royal College of Physicians in London recommended the use of Morale Scale (PGCMS) for the geriatric age group (Royal College of Physicians of London, 1992). Morale, according to Lawton, is defined as "a basic sense of satisfaction with oneself, a feeling that there is a place in the environment for oneself, and a certain acceptance of what cannot be changed" (Lawton, 1972; Löfgren, Gustafson, & Nyberg, 1999). Stroke is known to affect morale and the PGCMS, although it is not specifically designed for use in people who have had stroke, it is applicable in individuals with a stroke history (Löfgren et al., 1999). PGCMS can be used to assess morale in the geriatric population where cognitive impairment frequently occurs (Conradsson et al., 2013; Ryden & Knopman, 1989).

Low morale among stroke victims have been found to be closely linked to depression, but low morale has also been found in subjects without depression. Despite the fact that they were initially severely affected by stroke, more than half the subjects

Abbreviations: ADL, activities of daily life; BMI, body mass index; DSM-IV, Diagnostic and Statistical Manual of Mental Disorders; GDS, Geriatric Depression Scale; MADRS, Montgomery-Åsberg Depression Rating Scale; MMSE, Mini Mental State Examination; MNA, Mini Nutritional Examination; OBS, Organic Brain Syndrome Scale; PGCMS, Philadelphia Geriatric Center Morale Scale; QoL, quality of life; SD, standard deviation; WHO, World Health Organization.

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seemed to have good or fairly good morale (Löfgren et al., 1999). However, so far no studies, to the authors' knowledge, have focused on stroke and morale among very old people, i.e. 85 years and older.

The purpose with this study was to investigate the prevalence of stroke in a representative sample of people aged 85 years or older in Northern Sweden and Western Finland and to evaluate factors associated with morale among those who have had stroke compared with those without a stroke history.

2. Methods

2.1. Setting

The GErontologic Regional DAtabase (GERDA) study is a population-based study, using structured interviews and assessment scales to investigate factors that impact on general health and well being of very old people. The GERDA study started including people living in the Swedish county of Västerbotten in Northern Sweden in the year 2000. Five years later the study was expanded to also include inhabitants from the neighboring county of Pohjanmaa in Western Finland in addition to the original municipalities. The data used in the present cross-sectional study were collected from 2005 to 2007 in eight municipalities where two of these were urban; Umeå in Sweden and Vaasa in Finland, and six were rural, Dorotea, Vilhelmina, Sorsele, Storuman and Malå in Sweden and Mustasaari in Finland (Hornsten, Molander, & Gustafson, 2012; von Heideken Wagert et al., 2005).

2.2. Participants

To find suitable individuals in these areas a population register was obtained from the National Tax Board in Sweden and the Finnish Population Register Centre from which every other 85-year-old, every 90-year-old and every 95-year-old or older were selected. This was done to obtain three groups of comparable size. Everyone meeting the age group and geographical criteria mentioned above was invited to participate. It was randomly determined if persons with odd or even position in the population registry should be included among the 85-year-olds. No other exclusion criteria were used.

There were 962 individuals (range 85–107 years) selected that were invited to participate (612 Swedes and 350 Finns), however 74 died before contact could be made (43 Swedes and 31 Finns) and 180 declined participation (101 Swedes and 79 Finns). Of the 708 individuals who participated were 468 Swedes (327 women and 141 men) and 240 Finns (177 women and 63 men). The interviewers began with the oldest individuals to minimize the risk that a participant died before contact. There were no significant differences between participants and non-participants regarding age (participants mean age 90.3 years and non-participants 89.6 years, p-value 0.090) or sex (p-value 0.053).

2.3. Procedures

The potential candidates were contacted by letter which contained information about the study and later by telephone to obtain their informed consent to participate. If there were any doubts concerning ability to consent due to cognitive impairment, a relative was asked to give consent instead. The participants were interviewed in their own homes by researchers experienced in communicating with old people with and without cognitive impairment. The interviewers were physicians, physiotherapists, nurses or medical students. Every person, with or without dementia disorders, taking part in this study was approached with great care and respect. If a participant at any time wanted to withdraw the consent to participate the interview was ended immediately. The interview consisted of a predetermined set of questions and assessment scales and usually lasted approximately two hours. If a participant showed signs of being tired a pause was offered or the interviewer could return another day to complete the questionnaires. After the interview, medical records were reviewed and relatives and caregivers were interviewed when appropriate.

All participants were approached by the interviewer with the intention to get as complete answers as possible on the predefined questions and assessment scales even from those with different degrees of dementia or aphasia. The assessors judged whether the participant seemed to understand the questions and if they were able to give adequate answers. No MMSE point or other cut off were used to exclude answers, however answers from demographic questions were later validated with relatives, care givers and medical records. Answers from assessment scales were accepted as they were presented and no proxy answers were used.

2.4. Assessments

In the mid-seventies, Lawton developed the definition of morale and the Philadelphia Geriatric Center Morale Scale (PGCMS), which is used to assess morale among older people. The first aspect of Lawton's definition of morale, agitation, represents general anxiety in the elderly. The second aspect, attitude toward own aging, captures the individual's perception of life change. The third aspect, lonely dissatisfaction, encompasses contentment toward the social interaction that the individual is receiving. The PGCMS has 17 "yes" or "no" questions that are constructed as to be easy to answer and the higher the number of points the better the morale (Lawton, 1975). Lawton considered scores between 0 and 9 points to indicate low morale, 10–12 intermediate and 13–17 high morale. Unanswered questions occurred in our study, despite verbatim repetition of the question and adequate hearing, and were listed as 0 points, according to the scoring instructions (Lawton, 2003). If none of the questions were answered, due to for instance cognitive or aphasic reasons, this was considered as a missing value. The PGCMS was translated into Swedish and have been tested on old stroke patients. There was an acceptable inter-rater reliability among different administrators ($r = 0.86$) and internal consistency determined by Cronbach's alfa of the 3 factors agitation, attitude toward own aging and lonely dissatisfaction was 0.85, 0.81 and 0.85, respectively (Löfgren et al., 1999).

Depression was screened for using the Geriatric Depression Scale (GDS-15) (Sheikh & Yesavage, 1986). GDS-15 is a useful tool in screening for depressive symptoms among people with high age and it has been shown to have high sensitivity and specificity for detecting depression (de Craen, Heeren, & Gussekloo, 2003). It has also been found to be useful among geriatric stroke patients (Agrell & Dehlin, 1989). The scale consists of 15 "yes" or "no" questions. Scores between 5 and 9 indicate mild depression and scores between 10 and 15 moderate to severe depression. To further assess depressive and other psychiatric symptoms the Organic Brain Syndrome Scale (OBS) (Bjorkelund, Larsson, Gustafson, & Andersson, 2006; Jensen, Dehlin, & Gustafson, 1993) was used and, if the interviewer was a physician or specially trained medical student, the Montgomery-Åsberg Depression Rating Scale (MADRS) (Montgomery & Asberg, 1979) was used.

Cognitive impairment was screened for with the Mini Mental State Examination (MMSE) (Folstein, Folstein, & McHugh, 1975). This scale was developed as a screening test to quantitatively assess and document cognitive decline over time. Scores can be between 0 and 30, the higher the score the better the cognition.

Nutritional status was screened for using the Mini Nutritional Assessment (MNA), an instrument developed to examine the