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Psychosocial perspectives on health care utilization among frail elderly people: An explorative study

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ABSTRACT

The aim was to explore the relationship between health care utilization over 2 years and psychosocial variables measured at the end of this period in a sample of older people with high health care consumption. Sixty-three people aged 69–96 years were included in the study. Data were collected from two different registers covering health care utilization from 2004 to the end of 2008, and baseline data from an ongoing RCT. A cluster analysis (based on the health care utilization variables) was used to divide the sample into subgroups. The cluster analysis resulted in a two cluster and a three cluster solutions. The latter was found to be more appropriate because it more clearly discriminated between the groups regarding health care utilization and psychosocial variables. The three clusters were classified as "high consumers" (Cluster I), and "low consumers" (Clusters II and III). Cluster II seemed to be characterized by low outpatient but high inpatient care utilization, while the opposite utilization pattern can be seen in Cluster III, which also contained those with the largest social network, lowest risk of depression, highest life satisfaction and who felt least lonely. Cluster II contained those who felt the loneliest. Thus, older people whose health care consumption mainly comprises outpatient care appeared to have the least impact on the psychosocial variables (e.g., the highest life satisfaction, felt least lonely and were at the lowest risk of depression). Thus, measures taken to prevent health care utilization, especially among those with high utilization of inpatient care, will most likely have a positive effect on psychosocial variables and life satisfaction/quality of life (QoL).

1. Introduction

Despite extensive research on health care utilization, there is uncertainty regarding its relation to and impact on psychosocial variables. The most common factors investigated in relation to health care utilization are demographic data, economic aspects, diagnoses and/or functional limitations (Lockery et al., 1994; Iwashyna and Christakis, 2003; Kristensson et al., 2007; Condelius et al., 2008). Thus, there is little knowledge about how health care utilization is related to, for example, loneliness, depression, social network and life satisfaction as well as QoL. Knowledge of how these factors affect and are affected by various degrees of health care utilization could provide information about how to intervene to reduce high health care utilization as well as optimize QoL.

The relationship between health care utilization (i.e., inpatient, outpatient and municipal care) and a number of variables has been identified. Previous studies have, for example, studied medical diagnoses and found that chronic obstructive pulmonary disease, diseases of the circulatory system, diabetes (with complications), cancer and musculoskeletal problems are significantly more common among those with high health care utilization (Timms et al., 2002; Kristensson et al., 2007). Medical diagnoses can be seen as one of the most obvious variables to consider, as they are often the main reason for hospital admission/seeking medical attention. However, the frequency of multimorbidity among older people means that specific diagnoses per se are uncertain predictors, and hence more variables must be considered to fully understand the complexity of factors related to health care utilization. Other variables found in previous studies to be associated with high health care utilization are advanced age, gender (i.e., women), marital status (i.e., unmarried and widows), living alone, poor financial situation, physical functioning, poor self-rated health, cognition problems, depression, multimorbidity and extensive use of inpatient as well as outpatient care (Kuroda et al., 1992; Rudberg et al., 1996; Marcantonio et al., 1999; Stoddart et al., 2002; Iwashyna and Christakis, 2003; Ahmed et al., 2003; Kristensson et al., 2007; Condelius et al., 2008; Rennemark et al., 2009). Thus, many studies have investigated the relationship

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between various factors and health care utilization (especially inpatient care), but there is still a lack of knowledge about the relationship between psychosocial variables and health care utilization (including outpatient care).

Exploring the relationship between health care utilization and psychosocial variables will illustrate how the former can affect the patient's daily life. Such knowledge is important in elder care, where the main goal is to provide high quality care that promotes QoL (including psychosocial aspects). Psychosocial variables can be seen to both aggravate and moderate utilization and hence can serve as predictors as well as outcome measures. However, studies focusing on psychosocial variables in relation to health care utilization are rare, and more research is needed about this topic.

The aim of this study was to explore the relationship between health care utilization over 2 years and various psychosocial variables measured at the end of this period in a sample of older people with high health care consumption.

2. Subjects and methods

2.1. Sample

Data were collected by means of the "Case Management study" (Kristensson et al., in press) and two registers; Skåne County Council's patient administrative registers PASIS (Patient Administrative Support in Skåne) and PrivaStat. The Case Management study is an RCT focusing on people aged 65+ years with high health care consumption, the aim of which is to evaluate a health care model. The sample in the present study consists of all participants in the RCT study between October 2006 (when the study started) and December 2008. The baseline data of these people were then linked to the PASIS and PrivaStat registers. The inclusion criteria for the RCT were that the person should be 65 years or over, need help with at least two activities of daily living, had been admitted to hospital on at least two occasions or had at least four contacts with outpatient/primary care during the previous 12 months, be able to communicate verbally and have no cognitive impairment. Cognition was evaluated by means of the Mini mental state examination (Folstein et al., 1975) and a cut-off level of 25 (out of a maximum 30 points) was required for participation (in the study). Data were collected by means of personal, structured interviews.

PASIS is an administrative register of care and treatment provided by the county council of Skåne while PrivaStat is a register of care and treatment provided by private agencies in this region. PASIS includes information about hospital admissions and discharges, length of hospital stay (LOS) as well as contacts with outpatient care. Data from these registers pertained to health care utilization during the 2 years prior to registration in the RCT.

The study was conducted in accordance with the basic ethical principles of medical research (MRC, 2000) and approved by the Lund Regional Ethical Review Board (Nos. 342/2006 and 499/2008).

2.2. Measurement

The questionnaire used in the interviews contained items about demographic data, social network and loneliness as well as an instrument measuring life satisfaction and depression/depressed mood. Social network was assessed by questions about whether the respondents had children, someone to trust and how many people they could trust.

Life satisfaction was measured with the Swedish version of the Life Satisfaction Index Z (LSIZ) (Hillerås et al., 2001; Fagerström et al., 2007), which is a short version of Neugarteńs original 20-item Life Satisfaction Index A (LSIA) (Neugarten et al., 1961; Wood et al., 1969). LSIZ is a self-report measure and includes a mere 13 items/statements with the response alternatives (a three-point Likert scale): agree, do not know and disagree. The response alternatives were assigned 0, 1 and 2 points respectively. The total score (the sum) ranges from 0 to 26, and higher scores indicate higher life satisfaction.

Depressed mood/depression was measured with the Swedish version of the Geriatric Depression Scale (GDS-20) (Gottfries et al., 1997), which contains 20 questions focusing on symptoms related to depression with Yes/No response alternatives. The total score range is between 0 and 20, where figures over 6 indicate a risk of depression.

The number of hospital stays (the total as well as the number of acute and planned admissions), days in hospital, as well as the number of contacts with outpatient and private care were counted for each respondent. Contacts with professions other than physicians are presented as contacts with other staff groups (e.g., nurses, physiotherapists, occupational therapists). A registered outpatient contact can be a visit or some other form of contact (e.g., telephone or mail). The diagnoses in PASIS for patients in inpatient care were registered in accordance with the World Health Organization's ICD-10 (International Classification of Diseases, 10th revision) (WHO, 2007). A maximum of 15 ICD-codes can be registered in PASIS for each contact, the primary code being the main reason for the hospital stay. The diagnoses were categorized and presented as 15 main groups in accordance with the sections/chapters in ICD-10.

2.3. Data analysis

A hierarchical cluster analysis using Ward's method (squared euclidean distances) was carried out to identify subgroups among the respondents. The analysis comprised five variables; "Total number of hospital stays (acute and planned)", "Total number of contacts with outpatient care physicians (visits and other forms of contact)", "Total number of contacts with other outpatient care staff (visits and other forms of contact)", "Total number of contacts with private outpatient care physicians (visits and other forms of contact)" and "Total number of contacts with other private outpatient care staff (visits and other forms of contact)", aimed at identifying different characteristics of elderly people's health care utilization.

The χ^2-test was used to analyze differences in nominal/ordinal data, while the Mann–Whitney U test and the Kruskal–Wallis one-way analysis of variance test were employed for interval and ratio data. The Mann–Whitney U test also served as a post hoc test to the Kruskal–Wallis one-way analysis of variance test. Due to multiple comparisons in the Kruskal–Wallis test, a reduced p-value (Bonferroni method) of ≤ 0.017 was used to control for the risk of mass-significance (Bland and Altman, 1995). In all other cases, $p \leq 0.05$ were considered statistically significant. All data were analyzed using SPSS for Windows 14.0.

3. Results

The study comprised 63 individuals with a mean age of 83.7 (95% CI 82.1–85.3), range 69–96 years. In the total sample, 68.3% were women, of whom 60.3% were widowed. The mean number of hospital stays was 2.06 ± 2.11 ($\pm$S.D.), and the median LOS in the total sample was 9 days with a range of 9–91. The mean number of contacts with physicians in outpatient care was 35.01 ± 9.4 and with physicians in private outpatient care 6.4 ± 7.7. The most common diagnosis groups (based on the primary code) in the total sample were diseases of the circulatory and musculoskeletal system, and "other diagnoses registered" (e.g., malformation, various symptoms, injuries, poisoning).

The cluster analysis revealed two possible solutions; a two cluster and a three cluster solutions. The two cluster solution