Sooner or later?
A study of institutionalization in late life

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ABSTRACT. Background and aims: Existing information about institutionalization of elderly individuals is mainly based on cross-sectional data and does not address the cumulative risk of institutionalization. The purpose of the present study was to analyze longitudinal data prospectively and estimate the risk of placement in an elder care institution for individuals aged 70 years or older. Methods: The study was based on a longitudinal investigation (the H70 study) of a random sample of 70-year-olds living in Gothenburg, Sweden, in 1971. Individuals were followed from age 70-100 years. Three different analyses were performed: a descriptive prospective analysis, cross-sectional analyses at ages 70, 79 and 85 years, and a longitudinal analysis of predictors for institutionalization. Results: The prospective analysis indicated that 50% of the individuals eventually moved to an elder care institution. Significantly more women than men were institutionalized, although for women the move occurred later in life. Cross-sectional analyses demonstrated that various factors were important to institutionalization at different ages. The Cox regression model with time-varying covariates indicated that gender, socio-economic situation, marital status, number of symptoms, having children living nearby, and activities in daily life were related to institutionalization. Conclusions: The proportion of elderly persons relocating to institutions was significantly higher than that generally found in cross-sectional studies. It was possible to identify variables that predict institutionalization during a subsequent 30-year period, but different analyses revealed different effects from the factors evaluated.


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INTRODUCTION

Sweden has one of the oldest populations in the world, and old-age care in general and institutional care in particular is frequently discussed in the media and the political sphere. One major criticism is that there is a shortage of beds, so that elderly individuals cannot move into institutions to the extent that they need or want to. Statistics demonstrate that the number of institutionalized individuals has declined by nearly 18,000 between the years 2000 and 2005. In the year 2000, 8% (118,300) of the population 65 years and older were living in institutions, compared with 6% (100,400) in 2005 (1). This means that, even though Sweden has the highest proportion of older population, there are relatively few institutional beds. However, discussion concerning the shortage of residential beds is not only a Swedish phenomenon; de Girolamo et al. (2) discuss the varying availability of residential beds in different countries in Europe and conclude that the variables associated with the availability of places in institutions need to be more fully investigated. There is also a need for studies from longitudinal or prospective data, to analyze the cumulative risk of moving into an elder care institution, since cross-sectional data of institutionalized elderly cannot do this. Studies of the cumulative risk of moving to an elder care institution suggest that, although the rate or prevalence of institutionalization has decreased according to cross-sectional studies, the cumulative risk has not changed, or may even have increased (3, 4).

One strategy for determining institutionalization is to analyze the proportion of the elderly population living in institutions at the time of death. Kastenbaum and Candy (5) made one of the first attempts to accomplish this, reporting that the prevalence of institutionalized elderly persons (~5%) was dramatically different from the number of elderly persons who died in an elder care institution (~45%). A more recent Swedish study of individuals aged 80 years or more at the time of death found that 53% of respondents had lived in an institution for more than one year before their death (6). Another Swedish study (7)

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found that old people in their last year of life consumed a great amount of both municipal and in-hospital medical care. The same study also found that those living at home more often died in hospital than those living in institutions.

There is limited information from longitudinal studies about institutionalized elderly persons. Studies performed over a decade ago analyzed the risk or probability of nursing home placement (8-11) and most concluded that women are more likely to be institutionalized and that the risk increases with advanced age. Kemper and Murtaugh (8), for example, calculated that 43% of those who turned 65 years old in 1990 will enter a nursing home before they die. Samuelsson and Sundström (12) followed a group of elderly Swedish individuals between age 67 (in 1969-70) and 93, and found that 32% of them were eventually institutionalized. They also found that those institutionalized were predominantly low-income, working-class, childless women with few social contacts and often suffering from long-standing illnesses or poor health; they were also often mentally impaired. In a more recent longitudinal study, Hays et al. (13) found that the odds of institutionalization was increased by older age, white race, cognitive and functional problems, high chronic illness burden, marital status, fewer living children, smaller household size, social isolation, and departure of non-spouse co-residents.

Recent studies indicate that, compared with previous decades, elderly people who enter institutions are in greater need of care (2, 14-16), and it is well established that “activities in daily life” (ADL) is one of the most important predictors of institutionalization (1, 9-11, 16, 17). However, other factors are often associated with institutionalization, such as income (18), subjective health (19), social support network (9, 11, 15) and the possibility of receiving informal care (2, 20, 21), and an elderly person’s marital status, household composition, and family network are suggested to buffer against institutionalization (4, 8, 13, 22-24).

As reported above, cross-sectional research during the last two decades has provided information about the rates of institutionalization of the elderly and influential factors. Nevertheless, few studies have followed cohorts longitudinally. Thus, the purpose of the present study was to follow a Swedish cohort of 70-year-olds for 30 years to examine participants’ moves into institutions. Specifically, we analyzed the following:

1) how many individuals in the cohort moved into an institution at some point during the study period; 2) how 79- and 85-year-olds living at home differed from those living in institutions; 3) whether gender, marital status, socio-economic situation (SES), health (objective and/or subjective), social network (objective and/or subjective) and ADL predicted a subsequent move to an institution.

METHODS

Sample

The study was based on data from The Gerontological and Geriatric Population Studies in Gothenburg, Sweden, the H70 study. The original objective of the H70 study was to survey the social and medical conditions of the population. In 1971 and 1972, a random sample of 1148 (30%) 70-year-olds living in the city of Gothenburg was drawn from the city’s population register. Of these 973 (85%) participated in the study. Comparisons between participants and non-participants showed no significant differences in sex, marital status, income, or inpatient or outpatient psychiatric care. However, female non-responders had received more somatic hospital care during the preceding 5-year period (25). Follow-ups occurred at ages 75, 79, 81, 82, 83, 85, 88, 90, 92, 95, 97, 99 and 100 years.

The present study used information on type of dwelling from all the waves to estimate the cumulative rate of institutionalization. Predictors of institutionalization were drawn from data collected at ages 70, 79 and 85. After adjusting for missing data, at age 70 the sample was reduced to 964 respondents. At the age of 79, 337 individuals had died and another 100 could not participate for various reasons, which reduced the sample to 537 respondents. At the age of 85, 607 of the baseline sample had died, and 88 could not participate, leaving 269 responding individuals (Table 1).

Method

The H70 study consists of two parts: a home interview and several clinical examinations at the outpatient clinic of a geriatric hospital. The home interview included questions about dwelling conditions, social network, social support, need for care, use of health care and use of medicines (26). The clinical part was comprised of several medical examinations and assessments of functional capacity. Information on whether a person had died while living in ordinary housing or had moved to an institution was mainly derived from the home interviews, but death certificates were also used as a complement. Death certificates were obtained for all except 9 individuals, and the four respondents who were alive at age 100 years.

Assessments

Dependent variable

Type of dwelling. The definition of an institution for elder care differs across countries, and different names are used, such as nursing home, old-age home, and sheltered living. In the present study, we defined institutions and institutional care as all need-assessed, permanent, institutional care provided by a social service department, excluding stays in short-term units and acute care in hospitals. The information obtained in the home interviews was used to construct two variables. The first was the per-