Original article

Home care needs of extremely obese elderly European women

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Abstract

Objective. To examine the health and needs of extremely obese women aged over 65 years receiving home care in Europe.

Study design. A cross-sectional assessment study based on the Aged in Home Care (AdHOC) project recruited 2974 women aged 65 or over who were receiving home care at 11 sites in European countries. Extreme obesity was defined as 'Obesity of such a degree as to interfere with normal activities, including respiration'.

Main outcome measures: Resident Assessment Instrument for Home Care (RAI-HC version 2.0); Activity of Daily Living Scale; Instrumental Activity of Daily Living Scale; the Minimum Data Set Cognitive Performance Scale; and a health profile.

Results: One hundred and twenty women (4.0%) were extremely obese. They were younger than their thinner counterparts, with a median age of 78.3 versus 83.3 years, and they more often had multiple health complaints and needed more help with mobility outside the home. The extremely obese had received home care longer than the non-extremely obese (median 28.7 versus 36.6 months). Extremely obese women also needed more help with personal care than the other group and, due to lower age, they were less cognitively impaired.

Conclusions: Extreme obesity is a problem that increasingly affects home care of elderly women.

Keywords: Ageing, extreme obesity, female health, home care, Resident Assessment Instrument

Introduction

Average life span has increased continuously in the industrialized world.[1] Over the last few decades, there has been an unprecedented increase in the prevalence of obesity, especially in economically developed countries. Of 93,290 female US veterans aged 18 and over, 37.4% were classified as obese,[2] defined as a body mass index (BMI) of 30 kg/m^2 or more. Obesity is associated with an increased risk of health problems such as diabetes, hypertension, dyslipidaemia, breathlessness, sleep apnoea, gall bladder disease, coronary heart disease or heart failure and osteoarthritis.[3,4] It is becoming an increasingly recognized health issue in the elderly and is associated with more requirements for care.[5–7]

The aim of this study was to examine the health and needs of extremely obese women aged over 65 years receiving home care in 11 European countries.

Methods

A cross-sectional study was undertaken using the population recruited for the European Aged in Home Care (AdHOC) project (all aged 65 years and over). The participants lived in urban settings and were already receiving home care services at the start of the study: 1036 men and 2974 women from 11 European countries were involved (Figure 1). The total refusal rate was 13%.[8]

Participants were assessed using the Resident Assessment Instrument for Home Care (RAI-HC), version 2.0.[9,10] The assessors observed and talked with the clients; additional information was gathered from written documentation, other team members or next of kin. 'Extreme obesity' was defined as 'Obesity of such a degree as to interfere with normal activities, including respiration'.[11] This corresponds to the World Health Organization's classes 2 (BMI 35–39.9)
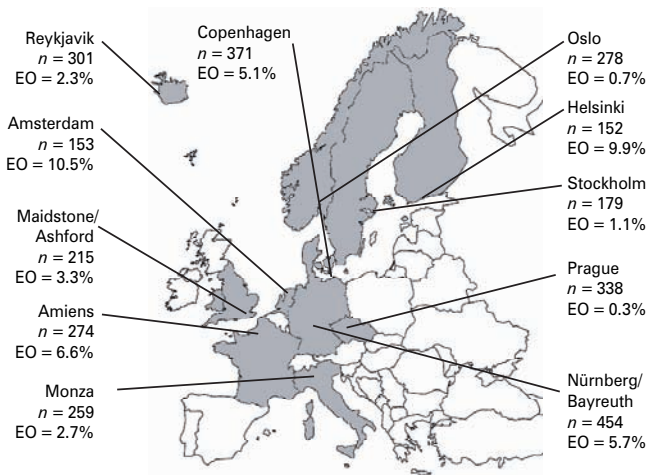
Figure 1 European Aged in Home Care project (AdHOC) sites in 11 European countries. The present study examined women aged 65 years or more who met the criterion for extreme obesity. The *n* values are for sample sizes for the larger project. The EO values are the sample prevalence rates for extreme obesity.

Table 1 Sociodemographic, functional and clinical characteristics

	Non-extremely obese (*n*=2854)	Extremely obese (*n*=120)
Median age[a] (range): years	83.3 (64.3–94.9)	78.3 (64.4–104.5)
Number (%) living alone	1945 (68%)	70 (58%)
Median duration[b] of home care at assessment (range): months	28.7 (1–313.7)	36.6 (1–250.1)
Median ADL score (range)	1.0 (0–8)	2.0 (0–8)
Median IADL score (range)	5.0 (0–7)	4.0 (0–7)
Median CPS score (range)	0.0 (0–6)	0.0 (0–6)
Median number of medications (range)	6.0 (0–9)	6.0 (0–9)

[a] One extremely obese and four non-obese women were 64 years old.
[b] *n*=2588 and 113.
ADL, Activities of Daily Living (range 0–8); IADL, Instrumental Activity of Daily Living (0–7); CPS, Cognitive Performance Scale (range 0–6); for all three scales a higher number indicates greater impairment.

and 3 (BMI ≥ 40).[12] Physical and cognitive function were assessed using the Activity of Daily Living (ADL) and the Instrumental Activity of Daily Living (IADL) scales[11,13] and the Minimum Data Set (MDS) Cognitive Performance Scale.[14]

Associations between extreme obesity and the following conditions were analysed: hypertension, congestive heart failure, diabetes, chronic obstructive pulmonary disease (COPD), Alzheimer's disease and other dementias, oedema, urinary incontinence, renal failure, falls (at least one fall during the last 90 days) and pain. Medication use was also examined.

Local legislation for ethical approval and data collection in each country was followed and informed consent was obtained.

Statistical analysis

Descriptive statistics were retrieved from the database from July 2004. Analyses were performed using SPSS software, version 13. The factors associated with the extreme obesity were analysed. Conditions significantly associated with extreme obesity ($P<0.05$) were entered into a forward logistic regression model, with grade of obesity (extreme versus non-extreme) as the dependent variable. Results from both the cross-tabulations and the regression model are reported as odds ratios (ORs) with 95% confidence intervals (CIs).

Results

One hundred and twenty women (4.0%) and 22 men (2.1%) were extremely obese (further analysis was confined to women). Extremely obese women receiving home care were younger than the non-extremely obese: median age 78.3 (range 64.3–94.9) years versus 83.3 (range 64.4–104.5) years and had received home care for

longer (Table 1). Extremely obese women needed more help with personal care than the other group but they were less cognitively impaired.

Table 2 presents the frequency of clinical conditions. The OR indicates the risk for each. The extremely obese group had significantly more shortness of breath and oedema, urinary incontinence and required more specialist skin care. Due to diabetes they needed more dietary consultations; five of them were treated with insulin injections (data not shown). They required more help when moving outside the house. They also reported multiple heath complaints.

All the conditions listed in Table 2 were entered into a logistic regression. In the final model, extreme obesity was significantly associated at the 5% level with: increased need of care related to diabetes (OR 1.81, 95% CI 1.20–2.72), shortness of breath (OR 2.26, 95% CI 1.52–3.37), oedema (OR 1.56, 95% CI 1.04–2.32), multiple health complaints (OR 1.73, 95% CI 1.05–2.84) and urinary incontinence (OR 2.16, 95% CI 1.45–3.22). The extremely obese were also more likely to need assistance for locomotion outside the home (use of frame outside home, OR 1.73, 95% CI 1.10–2.71; help for moving outside the home, OR 1.56, 95% CI 1.03–2.37).

Discussion

This study examined the characteristics and special needs of extremely obese elderly European women and the challenges they pose for home care services. As far as we know, this is the first cross-national study of extreme obesity in older European women receiving home care.

Extreme obesity here is a clinical term without any specific linkage to BMI, making this study difficult to compare with other studies. Another limitation is the relatively small number of EO clients in the sample; the analysis may therefore have been hampered by lack of statistical power.

We found that 4.0% of women were extremely obese; they were five years younger than non-obese women receiving home care, more often had multiple health

Table 2 Clinical characteristics of the 120 extremely obese women and 2854 non-extremely obese elderly women receiving home care

Clinical characteristics	Non-extremely obese: *n* (%)	Extremely obese: *n* (%)	Odds ratio (95% CI)	*P*-value
Age				
65–85 years versus 85 years or more	1218 (42.7)	17 (14.2)	4.51 (2.69–7.57)	0.001
Conditions and clinical symptoms				
Not demented versus demented	2486 (87.0)	113 (94.0)	2.42 (1.12–5.23)	0.001
Diabetes versus no diabetes	476 (16.7)	42 (35.0)	2.69 (1.82–3.96)	0.01
Congestive heart failure versus no heart failure	664 (23.3)	41 (34.2)	1.71 (1.16–2.52)	0.001
Shortness of breath versus no shortness of breath	576 (20.2)	51 (42.5)	2.92 (2.01–4.25)	0.001
Oedema versus no oedema	695 (24.4)	50 (41.7)	2.21 (1.53–3.22)	0.01
Pain interrupting daily activity versus no pain	1095 (38.6)	60 (50.4)	1.62 (1.12–2.34)	0.001
Urinary incontinence[a] ≥1/week versus continent	1328 (46.5)	79 (65.8)	2.21 (1.51–3.25)	0.000
Use of pads versus no use of pads	1223 (42.9)	69 (57.5)	1.80 (1.25–2.61)	0.002
Skin problems versus no skin problems	752 (26.3)	47 (39.2)	1.80 (1.24–2.62)	0.002
Mental, cognitive and social functioning				
Any psychiatric diagnosis versus no such diagnosis	246 (8.6)	17 (14.2)	1.75 (1.03–2.97)	0.04
Multiple health complaints versus no complaints	270 (9.5)	23 (19.2)	2.27 (1.42–3.64)	0.001
Physical functioning				
Use of frame outside home versus no use	438 (15.3)	29 (24.2)	1.75 (1.14–2.70)	0.009
Help for moving out of house versus no use of help	583 (20.4)	37 (30.8)	1.74 (1.17–2.58)	0.006
Treatments/services				
Skin care versus no skin care	327 (11.5)	22 (18.39)	1.74 (1.07–2.79)	0.02
Special diet versus no special diet	145 (5.1)	15 (12.5)	2.67 (1.52–4.70)	0.001

[a] Includes use of different types of catheter.

complaints and needed more help with mobility outside the home. As this is a cross-sectional study, we cannot comment on any cause and effect relationships. For example, it is not clear whether the multiple health complaints were the cause or a consequence of obesity in this group.

The prevalence of extreme obesity in our population, and that it was more common in women, concurs with the findings of other studies. For example, Friedmann *et al.* found in a US sample of people with a mean (SD) age of 71.7 (5.7) years that the prevalence of extreme obesity was 4% in women and 1.4% in men.[15]

Scores for Activity of Daily Living were approximately the same in both extremely obese and non-extremely obese subjects. These results could correspond to the U-shaped BMI–mortality curve reported by Waaler[16] for older people: a high BMI was associated with lower relative mortality risk than in younger people. Elia[17] has given different explanations for this U-curve; one possibility is that individuals who had been prone to the complications of obesity may have already died, while those who remain are more resistant to the effects of obesity. Zamboni *et al.*[18] have documented this 'survival effect'. Must *et al.*[19] found that the disease burden associated with extreme obesity was lower for people aged 55 years or more than for those aged 25–54 years.

That extremely obese women are younger and have been receiving home care for longer than their thinner counterparts has economic implications. This is of special concern as populations are ageing and obesity may not necessarily be associated with increased mortality, as found in a US cohort.[20]

Extreme obesity in elderly women is a problem of the 21st century that governments will have to address until the obesity epidemic has been halted and reversed.

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