Maturitas 69 (2011) 220–229

Contents lists available at ScienceDirect

Maturitas

journal homepage: www.elsevier.com/locate/maturitas

Review

Economic costs of adult obesity: A review of recent European studies with a focus on subgroup-specific costs

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ARTICLE INFO

Article history:
Received 21 March 2011
Accepted 5 April 2011

Keywords:
Obesity
Cost of illness
Health care costs
Subgroup analysis
Adults
Europe

ABSTRACT

This review aims to provide an update on economic costs of obesity in Europe with a focus on costs in subgroups defined by relevant third variables such as sex, age, socio-economic status, and morbidity factors. A structured search using MeSH-vocabulary and Title/Abstract-searches was conducted in PubMed for 2007 to 2010. All cost categories except intangible costs were considered. $N = 19$ primary cost of illness studies on adults from Europe which had included at least one cost category as an outcome were identified. Nine studies reported costs in specific subgroups. Two studies (both from Germany) took a societal perspective, with total (direct and indirect) costs of obesity accounting for 0.47–0.61% of gross domestic product. Excess per-capita direct costs ranged from €117 to €1873, depending on cost categories and comparison group (normal weight, non-obese). One study estimated lower lifetime health care costs given obesity. Regarding subgroups, higher costs of obesity were generally found in men, groups with higher socio-economic status (regarding costs of severe obesity), and groups with co-existing abdominal obesity, diabetes (especially type 1), elevated HbA1c (among patients with type 2 diabetes), and physical co-morbidities given BMI ≥ 27 (compared to a "BMI ≥ 30 only"-group). In conclusion, while substantial obesity costs were found in most studies, subgroup analyses and lifetime perspectives call for a differentiated approach to the costs of obesity. Findings such as the higher health care costs in severely obese groups with higher socio-economic status (despite fewer co-morbidities), and lower lifetime long-term care costs in obese groups (due to reduced life expectancy), may generate hypotheses both on under- vs. overuse of services, and target groups for interventions.

Contents

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doi:10.1016/j.maturitas.2011.04.005

1. Introduction

That economic factors have stimulated war in all ages is a commonplace of history. Thus, it may come as no surprise that "war", as a metaphor, has permeated the field of obesity as well [1,2]. After all, if costs of illness attributable to obesity – as a condition basically both preventable and remediable – could be minimized, monetary resources within national health care systems and economies could be re-allocated towards other ends.

Against this background, the economic costs of obesity have raised considerable interest in recent years. The most recent review for Europe which encompassed both direct and indirect costs estimated obesity-related costs to range from 0.09% to 0.61% of total annual gross domestic income in Western European countries [3]. These authors have also stressed the need to intensify preventive strategies in order to limit obesity-attributable growth of health care expenditures across Europe in the future. To this end, in our view it is even more important to identify subgroups across which the costs of obesity vary than to update national estimates of these costs.

For instance, one might expect that obese adults from lower socioeconomic status (SES) groups incur higher per-capita costs than more educated and affluent obese groups due to more, and more severe, co-morbidities in the former. However, it has been shown e.g. for Germany that high-SES groups consult medical specialists such as internists more often (in contrast to general practitioners), and also a broader variety of specialists [4]. That is, in order to identify which SES-groups incur higher costs, an analysis of the costs of obesity in specific subgroups – i.e., in this case, defined by SES – is needed. By and large, such subgroup-specific cost assessments may identify obese groups with conspicuously low (or high) costs. Consecutively, this may generate hypotheses e.g. on under- vs. overuse of services, and target groups for interventions. In sum, the present review aims to provide an update on the economic costs of obesity in European countries with a focus on costs in subgroups defined by relevant third variables.

Table 1
Search strategy.

AND	"body weights and measures"[MeSH] OR "obese"[Title/Abstract] OR "adipose"[Title/Abstract] OR "obesity"[Title/Abstract] OR "overweight"[Title/Abstract] OR "adiposity"[Title/Abstract] OR "obesity"[MeSH] OR "overweight"[MeSH] OR "adiposity"[MeSH] OR "Body Mass Index"[MeSH] OR "Body Mass Index"[Title/Abstract] OR "BMI"[Title/Abstract]
AND	("health care costs"[MeSH] OR "cost of illness"[MeSH] OR "health expenditures"[MeSH] OR "health care cost"[Title/Abstract] OR "health care costs"[Title/Abstract] OR "cost of illness"[Title/Abstract] OR "costs of illness"[Title/Abstract] OR "health expenditures"[Title/Abstract] OR "health expenditure"[Title/Abstract] OR "medical costs"[Title/Abstract] OR "medical cost"[Title/Abstract] OR "costs of care"[Title/Abstract] OR "cost of care"[Title/Abstract]
AND	"europe"[MeSH] OR "european union"[MeSH] OR "europe" OR "european union" OR "andorra" OR "austria" OR "belgium" OR "albania" OR "baltic states" OR "bosnia herzogovina" OR "bulgaria" OR "belarus" OR "croatia" OR "czech republic" OR "hungary" OR "macedonia" OR "moldova" OR "poland" OR "romania" OR "russia" OR "estonia" OR "lithuania" OR "latvia" OR "slovakia" OR "slovenia" OR "ukraine" OR "yugoslavia" OR "finland" OR "france" OR "germany" OR "gibraltar" OR "great britain" OR "england" OR "scotland" OR "wales" OR "northern ireland" OR "greece" OR "iceland" OR "ireland" OR "italy" OR "lichtenstein" OR "luxembourg" OR "monaco" OR "netherlands" OR "portugal" OR "san marino" OR "scandinavia" OR "sweden" OR "denmark" OR "norway" OR "spain" OR "switzerland" OR "armenia" OR "azerbaijan" OR "georgia" OR "vatican city"

2. Materials and methods

2.1. Literature search and study selection

The literature search was conducted in PubMed (http://www.pubmed.gov) for the print publication period of January 01st, 2007, to December 31st, 2010. The search terms used are shown in Table 1. The terms to identify obesity and costs of obesity as study topics combined MeSH-vocabulary and Title/Abstract-searches of these and related expressions. The search considered all cost categories except intangible costs (e.g. reduced quality of life), and resulted in the identification of 153 publications (Fig. 1). The third part of the search strategy

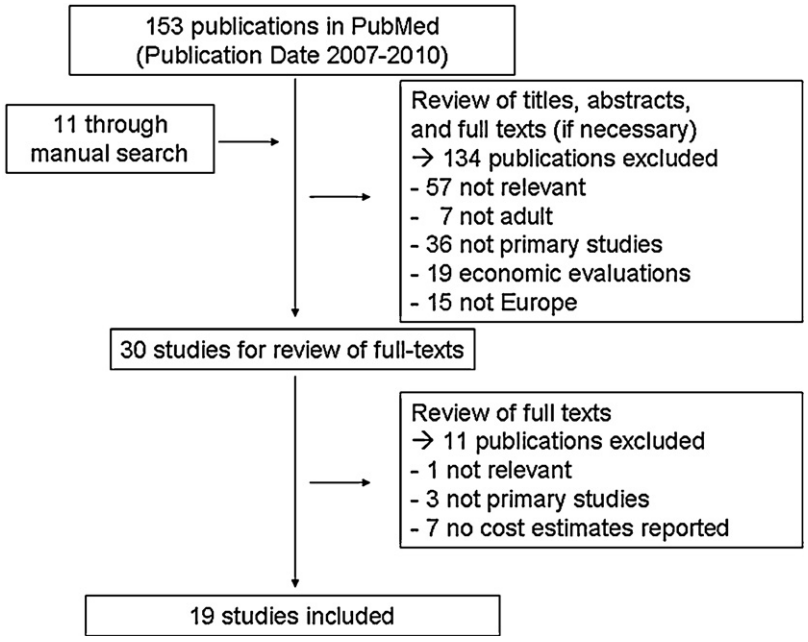

Fig. 1. Flow chart of study selection.