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Obesity and the Labour Market: Employment, Sick leave, and Policy Responses

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Summary

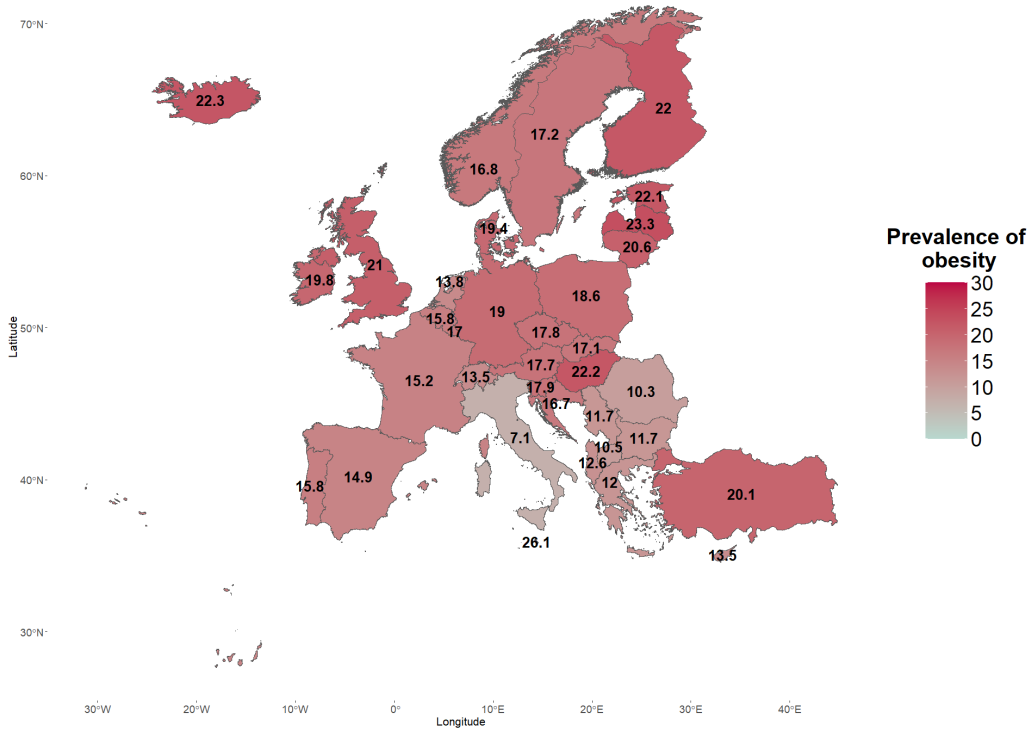
Obesity presents a growing public health and economic challenge in Europe, with rising prevalence projected to significantly impact labour market participation and productivity. Worldwide the direct costs of obesity are reflected in an increased use of healthcare services and an average of 8.4% of total health expenditure in OECD countries. Indirect costs involve increased absenteeism and reduced productivity, lower employment rates due to physical limitations and employer bias, and wage penalties which particularly affect women. Socio-economic disparities linked to obesity are evident in poorer educational outcomes, harmful stereotypes (such as a perceived lack of discipline or professionalism), and disadvantages shaped by neighbourhood environments, urbanization, and health literacy.

To address these issues, policy interventions must be comprehensive. A multimodal approach should consider all drivers of obesity while avoiding a one-size-fits-all model and acknowledging the need for tailored prevention and treatment strategies. A multi-sectoral approach is essential, requiring coordination across different stakeholders. Preventive policy tools include increasing (nutritional) health literacy, opportunities for physical activity, taxes on sugary drinks, restrictions on food and beverage marketing to children, and food labelling. Measures to support individuals with obesity include initiatives such as the EPODE and the HENRY approach, while pharmacological options in connection with lifestyle changes can help reduce long-term healthcare costs. Improving labour market outcomes for individuals with obesity requires better access to treatment, innovations in therapy, anti-discrimination policies, workplace health promotion, public health education, and inclusive policies that support prevention and treatment efforts.

1 Introduction

Europe faces a growing obesity crisis, posing a significant threat to public health and simultaneously burdening economies through diminished productivity (1). Despite a deceleration in the rise of obesity prevalence in many European countries between 1990 and 2016, projections indicate that obesity rates will continue to grow. According to Janssen et al. (2), male obesity prevalence, adjusted for age, is expected to increase in 18 European nations. Their figures suggest a rise from 22.7%-29.3% in 2016 to 28%-37.9% by 2030-2052. Female age-standardized rates are expected to reach 24%-30.3% between 2026 and 2054 from 2016 levels of 19.5%-31.3%, with considerable variation across countries. On average, in 2022 14.6% of people living in the EU have a body mass index (BMI) above 30 (3).

Figure 1: Prevalence of obesity in Europe (2022 EU-SILC)



Source: EU statistics on income and living conditions (EU-SILC) 2022 (4). Due to limited data availability, for Germany and Iceland 2019 and for the UK and North Macedonia 2017 EU-SILC data was used.

The growing clinical burden of obesity has significant implications at the population level. In 2019, obesity contributed to approximately five million deaths worldwide from non-communicable diseases (5), and individuals living with obesity were found to have a four-fold increased risk of developing severe COVID-19 (6). Given these trends, it is increasingly important to examine the broader economic and societal implications of obesity, particularly its intersection with labour market outcomes.

Obesity has been linked to reduced employment opportunities, lower wages, and increased absenteeism, which can exacerbate existing inequalities and hinder economic growth. Therefore, health-related employment barriers represents both a social and an economic challenge (7).

2 Direct costs: Health care expenditure

The global health burden attributable to high BMI has increased substantially between 1990 and 2021. Over this period, both total mortality and disability-adjusted life years (DALYs) associated with high BMI rose more than 2.5-fold, with age-standardized DALY rates increasing by 21.7% in females and 31.2% in males (8).

Overweight and obesity (BMI ≥ 25) alone has been estimated to account for 8.52% of all global deaths (9). Without effective and targeted interventions to address obesity, achieving the Sustainable Development Goal of a 30% reduction in premature mortality from non-communicable diseases by 2030 (Target 3.4) will not be feasible (10).

The leading contributors to mortality because of a higher BMI (11–13) include cardiovascular diseases (14), type 2 diabetes (15,16), cancers (17,18), musculoskeletal disorders (19,20) including low back pain (21,22), depression and reduced quality of life (23).

The health consequences of obesity also translate into a financial burden for healthcare systems. Evidence from Effertz et al. (24) indicates a clear positive association between obesity and increased healthcare expenditure, driven in part by greater utilization of healthcare services (25,26). In addition, higher BMI has been consistently linked to longer hospital stays across European healthcare settings, particularly among individuals with severe obesity or multiple comorbidities (27–29). Compared to individuals with normal weight, those living with obesity also receive approximately 2.4 times more prescription medications (26), further underscoring the economic impact of obesity on healthcare systems.

Country-level analyses illustrate the substantial economic burden of overweight and obesity on national health systems. In Portugal, the total cost attributable to overweight and obesity reached EUR 1.148 billion in 2018, corresponding to approximately 0.6% of national GDP and 5.8% of total public health expenditure. Notably, most of these costs are associated with obesity-related diseases rather than direct obesity treatment, which account for only 1% of total expenditure. Cardiovascular and cerebrovascular diseases represent the largest cost drivers, accounting for 38% of total costs, followed closely by type II diabetes at 34%. Direct

healthcare spending was primarily driven by outpatient care (43%) and pharmacological treatments (38%), while inpatient hospital care account for the remaining 19% (30).

Comparable findings are reported in other European settings. Reitzinger and Czypionka (31) estimate that in Austria, obesity accounted for 8.2% of all deaths and 4.6% of total health expenditure in 2019, corresponding to a GDP loss of 0.61%. Importantly, the economic burden was disproportionately concentrated among individuals with more severe obesity: approximately one third of all direct and indirect costs are attributable to class 2 (BMI 35–39.9) and class 3 (BMI ≥ 40) obesity. On an individual level, life-cycle costs for class 2 and class 3 obesity are estimated to be 1.9 and 3.6 times higher, respectively, than those associated with class 1 obesity (BMI 30–34.9). At age 45, individuals with high-risk obesity are projected to lose an average of 4.9 life years and 9.7 quality-adjusted life years (QALYs) compared with individuals without obesity, highlighting the long-term health and economic consequences of severe obesity.

Across OECD member states, preliminary estimates suggest that an average of USD 209 (PPP) per capita per year is spent on the treatment of high BMI and its associated health conditions. This represents approximately 8.4% of total health expenditure across OECD countries, although substantial variation exists between countries. The majority of these costs are driven by the management of diabetes, cardiovascular diseases, and cancer, with around 70% of total diabetes-related health expenditure being attributable to overweight (29). At the global level, the economic loss due to overweight and obesity in 2019 is estimated at 2.19% of GDP (direct and indirect cost) (1).

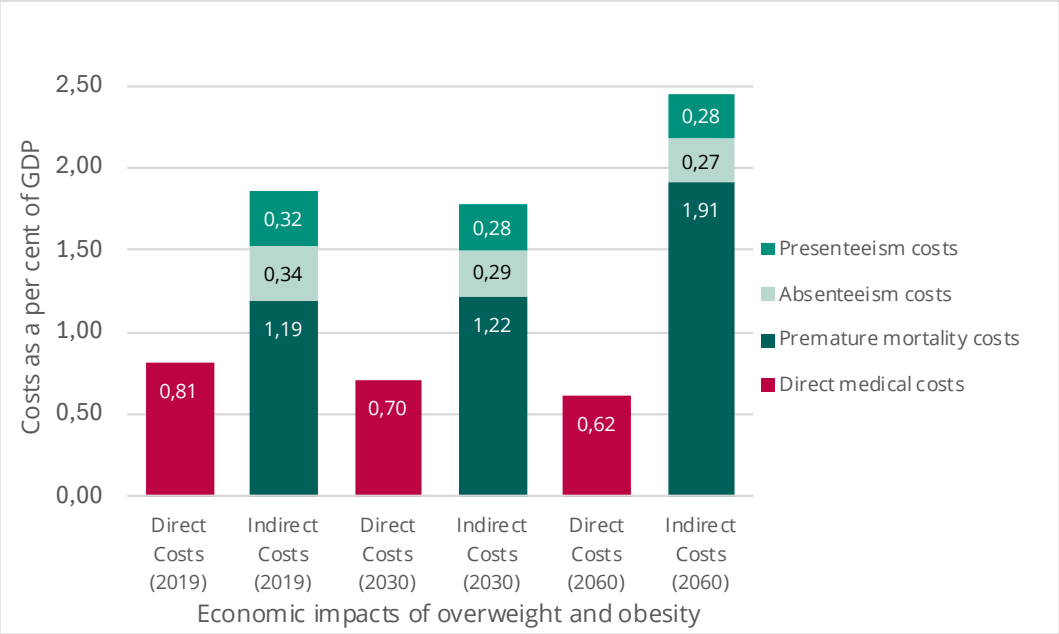
3 Indirect costs: Obesity and its economic impact

Beyond its direct impact on healthcare systems, obesity imposes substantial indirect costs through adverse labour market outcomes. This relationship between obesity and employment is complex and potentially bidirectional. On the one hand, obesity can hinder employment prospects through health-related limitations, lower productivity and workplace discrimination. On the other hand, unemployment itself may increase the risk of obesity by restricting access to healthy food, healthcare, and opportunities for physical activity. These negative labour market effects contribute to diminished national gross domestic product (GDP) and increased fiscal pressure (32).

The rise in costs of obesity and its associated conditions can be explained through the link to higher rates of absenteeism (absence from work), presenteeism (working while ill and therefore reduced productivity), early retirement, and lower overall employment rates. As a result, the economic consequences of obesity extend well beyond public health expenditure, creating a significant burden through lost productivity and reduced labour force participation (29).

While the clinical management of obesity generates considerable direct healthcare costs, these indirect costs represent an equally pressing challenge (33,34). Viinikainen et al. (24) emphasize that indirect costs may surpass the direct economic impact of excess weight, reinforcing the broader societal burden of obesity (33–35).

Figure 2: Economic impacts of overweight and obesity in Europe (Projections for 2030 and 2060)



Source: Okunogbe et al. 2022 (1)

Long-term projections suggest that indirect costs will continue to rise. Okunogbe et al. (1) project increasing economic impacts of overweight and obesity in Europe between 2019 and 2060, with indirect costs increasingly outweighing direct healthcare costs over time. Premature mortality and presenteeism are expected to be the dominant contributors to GDP losses, particularly by 2060, when indirect costs are projected to approach 2% of GDP.

At the individual level, a growing body of evidence links excess weight to increased sickness absence. Forthcoming research by Eisenberg et al. (36) shows that individuals in higher obesity classes face a significantly increased risk of sickness-

related absenteeism compared to individuals with normal weight or lower obesity classes, with elevated risk ratios observed across nearly all European countries, occupations, and economic sectors. Amiri and Behnezhad (37) find that individuals with a BMI ≥ 25 have a 20% higher risk of sick leave. Studies with European data further indicate that workers with obesity take, on average, around 10 additional sick days per year compared to individuals with normal weight, a substantially higher figure than the 1 to 3 additional days reported in US studies (38). Importantly, intervention studies suggest that weight loss can lead to meaningful reductions in absenteeism (38,39).

Beyond sick leave, obesity also affects employment prospects and on-the-job performance: according to the OECD, individuals with obesity-related chronic conditions are 8% less likely to be employed in the subsequent year and are 3 to 4% more likely to experience absenteeism or presenteeism, with downstream consequences for career trajectories and earnings (29). Using data from the 'Health Survey for England', Morris (40) shows that obesity reduces employment probability through both physical limitations and employer discrimination. OECD estimates indicate that health-related productivity losses correspond to a reduction of approximately 6 million full-time equivalent workers across the former EU28 countries. These losses are composed of 2.5 million full-time equivalents attributable to reduced employment, 2.5 million due to reduced productivity from presenteeism, and 1 million resulting from absenteeism. This translates into an average annual economic loss of USD PPP 781 per capita based on labour market output in the EU28 (29).

Research consistently documents a relationship between obesity, employment, and earnings, with pronounced gender and regional differences. Individuals with obesity, particularly women, are less likely to be employed than their counterparts without obesity, even after adjusting for health status and socioeconomic factors (40–43). Employment penalties vary across Europe, with stronger effects observed for men in southern and central Europe and for women in central Europe (43). Evidence from SHARE data shows that while obesity does not significantly affect men's employment likelihood, women with obesity are 5.8% less likely to be employed than women with normal weight. Men with overweight display the highest employment rates, whereas women with obesity the lowest (44).

Wage penalties are similarly gendered: across ten European countries, women with obesity earn approximately 10% less than women without obesity, while effects for men are smaller and often statistically insignificant (43). Empirical findings vary by institutional context, with some studies reporting weak overall wage associations (42), while others identify substantial gender-specific penalties (43). For example,

Gracia and Quintana-Domeque (42) find higher risks of unemployment or self-employment among individuals with obesity, with wage effects differing by gender and country, whereas Atella et al. (45) document significant wage penalties for women with obesity in several European countries. Using the same data, Brunello and D'Hombres (46) estimate that a 10% increase in BMI is associated with wage reductions of 3.49% for women and 5.29% for men.

4 Socioeconomic disparities

Individuals with obesity commonly experience stigma and discrimination, particularly at the workplace. Such precognition of obesity, however, starts at an early age. Obesity affects educational outcomes through several interconnected factors. These include biological factors like diseases, behavioural factors such as poor nutrition and lack of physical activity, and emotional and mental health factors including low self-esteem and poor social connections (29). A lack of physical activity can not only contribute to obesity but also be the consequence of obesity. Those channels lead to lower concentration at school and therefore worse educational outcomes (47). Similarly, research has established a relationship between physical activity and cognitive function of the brain. A lack of movement may lead to less brain function (48). Other research also shows that schoolchildren with obesity tend to have lower grades and are more likely to experience emotional and social difficulties, which can further impact their learning outcomes (47,49,50).

Crucially, the strength and direction of the relationship between educational attainment and obesity depends on the broader economic and social contexts (51,52). This is shaped by a range of structural determinants, including neighbourhood environments (53–55), degrees of urbanization (56–58), and health literacy (59–61). In high-income countries, an inverse relationship is often observed, with higher levels of education associated with lower obesity prevalence. This association is further moderated by intersecting factors such as gender, race, and socioeconomic status (62–64).

Later in life, biases about people with obesity often result in harmful stereotypes such as being perceived as lacking discipline, leadership ability, or professionalism which limit their opportunities for hiring, promotion, and career advancement. Such prejudices are especially pronounced in client-facing roles and are sometimes reinforced by customer preferences, further entrenching employment disadvantages (41,51,65–68).

5 Policy interventions

The World Health Organization (WHO) (69) highlights that in Europe, despite decades of progress in reducing premature mortality from non-communicable diseases, there has been a significant slowdown since 2014, leaving the region off track to meet its targets (70). Therefore, addressing the obesity crisis requires moving beyond traditional prevention strategies toward a comprehensive, multimodal approach. Effective interventions should integrate educational, community-based, and policy-level measures to produce sustainable outcomes. In May 2007, the Commission adopted a comprehensive White Paper: A Strategy on Nutrition, Overweight, and Obesity-related health issues (71), which integrates various Commission policies and aims to coordinate actions across local, regional, national, and European levels. Notably, no subsequent White Paper on this specific topic has been published by the EU since. The White Paper's recommendations remain relevant and the obesity prevalence across the EU high. However, advancements in research and pharmacological interventions now offer additional means to address this public health challenge.

The Obesity Medicine Association identifies four core components of obesity treatment: nutrition therapy, physical activity, behavioural counselling, and medical interventions (72). For patients with obesity, incorporating nutrition therapy and regular physical activity can significantly improve health and body composition (73). These non-pharmacological strategies emphasize behavioural changes like dietary adjustments and increased physical activity (74). While lifestyle interventions are the cornerstone of all obesity treatment, long-term medical management is crucial for this chronic disease (75). However, tackling obesity requires helping from two directions: on the one hand, preventing further increases in prevalence, and on the other hand, effectively managing and supporting those already affected. The latter poses particular challenges, as treatment is rarely one-size-fits-all. The most effective approach combines the four components of obesity treatment, tailoring them to each patient (75–77).

Recognizing the limitations of behaviour-focused interventions alone, the WHO emphasizes the need for a coordinated, system-wide response to obesity prevention and management (78). This approach prioritizes the universal availability, accessibility, affordability, and sustainability of obesity-related services and frames obesity as not only a health issue but also a broader economic and societal challenge. In response, the WHO introduced a Health Service Delivery Framework for the Prevention and Management of Obesity, which promotes the integration of obesity

care into existing healthcare systems across the life course, in line with chronic disease management principles (78).

Several European initiatives have demonstrated success. For example, in Leeds, a programme following the HENRY (Health Exercise Nutrition for the Really Young) approach reduced obesity in young children, particularly those from disadvantaged backgrounds (79). Similarly, in France, a program following the EPODE (Ensemble Prévenons l'obésité Des Enfants) approach, was shown to promote nutritional literacy and physical activity through community engagement. It has since been adopted in over 20 countries (80,81). In addition to school and community initiatives, policy tools such as soft drink taxes, food and menu labelling, and restrictions on advertising unhealthy foods to children offer mechanisms to support healthier choices (29).

Childhood obesity prevention has become a particular policy focus across Europe. Several EU countries have strengthened restrictions on unhealthy food advertising aimed at children and introduced stricter nutritional standards for school meals. A prominent example is Spain's 2025 School Meal Reform Law, which mandates the provision of nutritious whole foods and local produce, limits processed products, and bans sugary drinks in schools (3).

Fiscal measures, particularly taxes on sugar-sweetened beverages (SSBs), have received empirical support. A substantial body of research has identified a positive correlation between SSB taxes and reduced obesity and overweight rates, with the optimal tax rate being 20% or more (see e.g., 64–67). In response to declining official development assistance, the WHO has launched the 3 by 35 Initiative with the call to implement SSB taxes (alongside levies on tobacco and alcohol). It is aimed at increasing the real price of sugary drinks by at least 50% by 2035 (86). To date, twelve EU member states have implemented SSB taxes. In parallel, countries such as Austria, Belgium, the Netherlands, and Portugal have established voluntary reformulation agreements with the food industry to reduce sugar, salt, and trans fats in processed foods (3).

Interventions like menu and food labelling, along with mass media campaigns, are projected to produce major health and economic benefits across OECD countries. These measures could collectively gain between 51,000 and 115,000 life-years, which is comparable to eliminating all road deaths in the EU28 countries. Economically, menu labelling alone may save up to USD PPP 13 billion between 2020 and 2050. According to OECD simulations, menu labelling is the most impactful in reducing the burden of disease, potentially preventing 24,000 cases of cardiovascular disease, 11,000 cases of diabetes, and 1,900 cases of cancer annually. Mass media and food

labelling also contribute significantly, achieving about 75% and 50% of the benefits of menu labelling, respectively (29).

Pharmacological interventions are playing an increasingly prominent role in obesity management. Glucagon-like peptide-1 (GLP-1) receptor agonists have transformed treatment options by enabling substantial weight loss in individuals for whom lifestyle interventions alone were insufficient (87,88). Beyond weight reduction, semaglutide and tirzepatide has demonstrated potential to lower major obesity-related outcomes and comorbidities. Economic evaluations suggest that these therapies may reduce long-term healthcare and productivity costs and improve labour market participation (89,90).

In Austria, Reitzinger and Czypionka (91) estimated that treating 50% of adults with class II and III obesity with semaglutide alongside lifestyle intervention could reduce obesity prevalence by up to one third and lower annual obesity-related costs by EUR 108.7 million, corresponding to an average lifetime cost reduction of around 40% per patient. In the United Kingdom (UK), the government has launched a five-year study from the end of 2025 involving 3,000 participants to assess the effects of tirzepatide on employment outcomes and sickness absence (92). The National Health Service (NHS) finds that in the UK obesity is associated with four additional sick days per year, corresponding to costs of GBP 267 per capita. Healthcare costs are similarly concentrated, as the highest BMI group, representing just 14% of individuals with obesity, accounts for 26% of total obesity-related NHS expenditure. Research also points to a strong association between obesity and workforce exit: individuals aged 50-64 with obesity are 9.6% more likely to leave the labour market in Manchester, generating an estimated economic burden of GBP 2,937 per person (93).

Nevertheless, the integration of GLP-1 receptor agonists into comprehensive obesity care strategies remains incomplete. Challenges include limited access, side effects, supply constraints, and a lack of long-term evidence on employment outcomes in Europe.

Evidence from Denmark highlights a pronounced socioeconomic disparity: while obesity prevalence is higher among lower-income groups, semaglutide use is heavily concentrated in the highest income quartiles, a disparity that persisted across all demographic groups in 2023. However, the high out-of-pocket cost of semaglutide, which is currently not publicly reimbursed in Denmark, limits access for individuals with lower incomes, creating inequities in access to this weight-loss treatment (94). These findings suggest that financial barriers continue to restrict access to pharmacological treatments despite greater clinical need among disadvantaged populations. Moreover, pharmacological benefits must be supported by sustained

behavioural interventions to ensure long-term effectiveness (77,91). Recent studies caution that discontinuation of GLP-1 receptor agonists is often followed by weight regain due to compensatory mechanisms, underscoring the importance of long-term treatment strategies (95).

Ultimately, improving labour market outcomes for individuals with obesity requires not only treatment innovation, but also the cultivation of public and institutional awareness, for example through the development of broader health literacy. Policies that integrate preventive education, anti-discrimination protections, workplace health promotion, and access to treatment are also necessary to address the barriers individuals with obesity face in employment. Only a multimodal strategy can meaningfully reduce the economic obstacles and human burdens of obesity in Europe.

6 Literature

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