EUROPEAN JOURNAL OF HEALTH POLICY, HUMANIZATION OF CARE AND MEDICAL ETHICS

2(5)/2025

CARDINAL STEFAN WYSZYNSKI UNIVERSITY IN WARSAW

Wydawnictwo Naukowe UKSW

WARSAW 2025

Editorial Office Contact – ejhp@uksw.edu.pl

e-ISSN 2957-2002

Wydawnictwo Naukowe
Uniwersytetu Kardynała Stefana Wyszyńskiego w Warszawie
01-815 Warszawa, ul. Dewajtis 5,
tel. 22 561-89-23; e-mail: wydawnictwo@uksw.edu.pl

www.wydawnictwo.uksw.edu.pl

EJoHP 2(5)/2025

Contents

EJoHP 2(5)/2025

DOI: https://doi.org/10.21697/ejhp.0707.01
e-ISSN 2957-2002

2025, 5, 2: 5-11

Homicide–Suicides in 2016–2024 in the City of Poznań and Poznań County

Krzysztof Czeszak
ORCID:0009-0007-3485-8936

Received: 7 Jul 2025; Revised: 18 Aug 2025; Accepted: 26 Aug 2025

Abstract

This article examines the phenomenon of homicide–suicide, outlining its defining features and situating it within the context of general suicide statistics. The main focus is the identification of homicide–suicide cases in the city of Poznań and Poznań County over a nine-year period, along with an assessment of the frequency of such incidents and a discussion of research prospects and limitations.

Keywords: suicide, homicide–suicide, motivation for homicide–suicide

Introduction

This study seeks to verify data on homicide–suicide in Poznań and Poznań County between 2016 and 2024, based on an analysis of media reports and information obtained through public records requests. In Poland, official statistics on such cases are not compiled, as they are isolated events; nevertheless, when they do occur, they attract considerable public attention. The only means of identifying these cases is by cross-referencing deaths and homicides occurring at the same place and time, which makes it possible to establish the nature of the incident. Although the number of cases is low and does not typically warrant statistical analysis, they are a fascinating subject of sociological research.

Study Objective

The aim of this study is to document the occurrence of homicide–suicide in Poznań and Poznań County over a nine-year period, to verify the frequency of such incidents, and to identify both the limitations of current research and the prospects for its further development.

Methods and Research Material

The source material for this article consists of information on homicide–suicides in the city of Poznań and Poznań County, obtained through public records requests under Article 2(1) of the Act on Access to Public Information of 6 September 2001 (Journal of Laws No. 112, item 1198). This constitutes the author's original dataset. These data were then cross-checked against media reports, which proved to be consistent. The study is therefore an original work based on these materials, supplemented by statistical data from Poland's Central Statistical Office (GUS), discussed in the analysis.

Definition

Homicide–suicide, in its simplest definition, occurs when a perpetrator kills individuals known to them before taking their own life (Liem et al., 2011; Shields et al., 2015; Skowronek et al., 2016). It is often referred to as "extended suicide" due to the emotional ties between the perpetrator and the victims (Barraclough, 2002; Czabański, 2011). However, there is a fundamental difference between these two concepts. Stukan and Staszak (2018) proposed the following criteria to distinguish homicide–suicide from extended suicide:

- the use of a firearm or bladed weapon,
- the secondary role of suicide in relation to the homicide,
- personal motives, most often fueled by resentment or grievance,
- psychopathology limited to personality disorders and/or alcohol dependence,
- frequent conflicts preceding the act,
- negative or ambivalent relationships between perpetrator and victim,
- repeated episodes of violence prior to the crime,
- secondary aims, such as preventing a partner from leaving or punishing them,
- violent, sometimes brutal acts committed against the victim,
- the absence of victim consent,
- the presence of incidental victims, including guests or even pets.

Extended Suicide and Homicide–Suicide

Extended suicide is an act in which the perpetrator, in a disturbed psychological state, projects their own suffering onto close family members and seeks release by killing them. Such acts are most often associated with psychotic episodes occurring in the course of severe depression (Araszkiewicz & Pilecka, 2006). In light of this, scholars have also discussed cases in which women kill their children in an attempt to spare them from suffering or from the perceived evils of the world (Byard, 2005). In these instances, death is usually caused by poisoning, carbon monoxide, or suffocation. Men, by contrast, more often kill their children through stabbing or shooting. Friedman et al. (2005) found that up to 90% of perpetrators of extended suicide suffered from psychotic disorders, which led courts to conclude that they acted with diminished responsibility. Such acts were thus interpreted as the product of altered states of consciousness, ostensibly motivated by concern for the children.

Homicide–suicide is a broader and more neutral term, which indicates that an aggressive act precedes the perpetrator's own suicide. Extended suicide, in contrast, suggests the death of multiple victims and describes more specifically an act determined by the perpetrator's mental state, usually directed toward those closest to them (Stukan & Staszak, 2018).Homicide–suicides are oftenassociated with personality disorders, alcohol dependence (Friedman et al., 2005; Kaliszczak, 2002), Othello syndrome, and conflicts between the perpetrator and the victim (Byard, 2005). Each case requires at least two distinct legal assessments: one concerning the homicide (classified under Article 148 §1 or §3 of the Polish Penal Code) and another concerning the perpetrator's suicide (classified under Article 155 §1). Although one act precedes the other, both demand careful analysis and separate procedural steps.

Although closely related, the two terms differ in emphasis. Extended suicide encapsulates the concept that the perpetrator's mental illness shapes their decision to end not only their own life, but also the lives of others. In contrast, homicide–suicide comprises any case in which suicidal behavior emerges in connection with – and following – the decision to commit homicide.The motives most often cited include compassion (Byard, 2005), when a partner or family member is terminally ill and the act is intended to end their suffering; jealousy (Liem & Koenraadt, 2007), typically involving male perpetrators with alcohol dependence and/or Othello syndrome; and revenge or rejection (Byard, 2005), where the perpetrator (most often a man) kills a partner and sometimes the children to prevent them from leaving. Research also shows that in more than half of cases (53.9%), escalating conflicts and arguments constitute the immediate trigger (Logan et al., 2008), with rising tension culminating in homicide followed by suicide.

Statistics

Homicide–suicide is extremely rare when compared to the overall number of suicides in Poland or worldwide. Research by Liem and Oberwittler (2011), covering the period 1990–2005, indicated that the highest homicide–suicide rates per 100,000 population were recorded in Finland (0.163) and Germany (0.093), while Poland reported a rate of 0.044. Analyses by Araszkiewicz and Pilecka (2006), conducted over more than a decade, identified only 13 such cases. The main reason for this low figure is arguably the lack of reliable data that would allow the scale of the issue to be accurately estimated (Czabański, 2011; Gierowski & Dudek, 2012). In the United Kingdom, studies found a homicide–suicide rate of 1% (Barraclough & Harris, 2002). Liem et al. (2011) also documented increases in the proportion of homicide–suicides relative to all homicides: by 4% in both the United States and the Netherlands, and by 11% in Switzerland.

Findings

This article estimates the scale of homicide–suicide in the city of Poznań and Poznań County between 2016 and 2024, based on both media reports and the author's own source material. Typically, such incidents command widespread social attention and trigger intense moral and emotional reactions. By cross-referencing data obtained through public records requests with media accounts, this study identifies cases of homicide–suicide in the region during the nine-year period. The following brief case summaries illustrate the general characteristics and scope of the trend. Certain details cannot be disclosed due to ongoing legal proceedings.

Case Summaries

1. March 23, 2016 – Żerniki, Kórnik municipality
   Monika G. was attacked by her former partner, Sławomir B., outside a printing plant where she worked the night shift. Forcing open her car door, he stabbed her approximately 20 times in the chest. Her mother, who was also in the vehicle, was stunned with a taser. Sławomir B. then fled the scene and later hanged himself at a relative's home. The couple's relationship had previously ended due to his violence toward Monika G., following frequent quarrels (Żytnicki, 2016).

2. March 29, 2020 – Dębogóra, near Poznań
   Andrzej T. fatally shot Jakub S., the half-brother of his partner, and attempted to kill his partner, Magdalena P., using a Walther pistol. He then turned the

weapon on himself, inflicting a critical head injury. Both he and his partner were transported to the hospital, where Andrzej T. later died. The attack was linked to the couple's recent breakup (Kowalski, 2020).

3. April 4, 2022 – Swarzędz
   The bodies of a man and his young daughter were discovered in an apartment. The man was in the process of divorcing his wife and had previously been convicted of domestic abuse.The cause of the child's death was asphyxiation, while the perpetrator died by suicide through hanging (Piasecka, 2022).

4. Night of October 10–11, 2023 – Zalasewo
   Sixty-one-year-old Marian S. murdered his 55-year-old wife, his 14-year-old daughter, and his 9-year-old son. In an attempt to cover up his crime, he doused the bodies of his wife and daughter with gasoline and set them on fire, causing the building to burn. He then killed himself by placing a plastic bag over his head and sealing it with tape. The victims died from blunt-force trauma to the head inflicted with a hammer (Ługawiak, 2024).

5. July 16, 2023 – Poznań (Św. Marcin Street)
   At a restaurant garden outside a hotel, a man approached a couple seated at a table, drew a Glock-19, and shot the male victim. He then turned the weapon on himself. The shooter died at the scene; the victim succumbed to his injuries in hospital. The two men were 29 and 30 years old. The crime was likely motivated by jealousy: the victim's fiancée, who witnessed the attack, had previously been in a relationship with the perpetrator (Żytnicki, 2023).

6. September 1, 2024 – Będlewo
   The decomposed bodies of 33-year-old Paulina L., a former *Top Model* contestant, and her 47-year-old husband, Sławomir L., known in the criminal underworld as "Klakson," were discovered alongside a revolver. Due to the advanced decomposition, the cause of death was initially unclear, as no gunshot wounds were visible. X-rays later revealed two bullets lodged in Paulina L.'s neck. Toxicology reports showed high levels of amphetamine in both bodies. Evidence suggested that both had ingested large amounts of the drug before Sławomir L. fired two shots at his wife. The involvement of third parties was ruled out (Żytnicki, 2024).

Discussion

Over the nine-year period from 2016 to 2024, six cases of homicide–suicide were identified in the city of Poznań and Poznań County. This is a very small number compared with the 7,344 suicides recorded in the Greater Poland Voivodeship between 2016 and 2023, according to police statistics (Statystyka Policja, 2023). Nevertheless, the precise scale of homicide–suicide is difficult to establish, as no systematic or detailed statistical records are maintained. Given that six cases were documented in Poznań and its surrounding county over nine years, it is reasonable to extrapolate that the nationwide total is substantially higher. According to the Central Statistical Office (GUS, 2025), the population of Poznań is about 538,000, with another 445,000 living in Poznań County, while Poland as a whole has 37,437,000 inhabitants. During 2016–2024, police statistics reported 46,670 suicides across Poland. However, these figures provide only a partial context for understanding the issue. The scope of homicide–suicide in Poland has not yet been thoroughly examined. The reasons may lie in limited scholarly interest in the subject, as well as the lack of comprehensive data linking homicides and suicides.

Conclusions

This article demonstrates that such an analysis is feasible, at least for Poznań and Poznań County. It may therefore be concluded that extending this research nationwide would be of significant value. Homicide–suicide is an important, underexplored area of sociological inquiry that clearly warrants far greater research attention.

Data obtained through public records requests regarding deaths and suicides in the city of Poznań and Poznań County, 2016–2024.

References

Araszkiewicz, A., & Pilecka, E. (2006). Samobójstwa rozszerzone na tle ogólnej liczby samobójstw w Polsce w latach 1991–2005. *Suicydologia, 2*(1),s. 69-75

Barraclough, B. M., & Harris, E. C. (2002). Suicide preceded by murder: The epidemiology of homicide–suicide in England and Wales, 1988–92. *Psychological Medicine, 32*, s.13-15

Byard, R. W. (2005). Murder–suicide. In M. Tsokos (Ed.), *Forensic pathology reviews* (Vol. 3). Totowa, NJ: Humana Press, s.323-327

Czabański, A. (2011). Społeczna charakterystyka samobójstw rozszerzonych. *PoznańskieZeszytyHumanistyczne, 16*(16), s.5-10

Friedman, S., Hrouda, D., Holden, C., Noffsinger, S., & Resnick, P. (2005). Filicide–suicide: Common factors in parents who kill their children and themselves. *The Journal of the American Academy of Psychiatry and the Law, s.33*.

Gierowski, J. K., & Dudek, B. (2012). Zaburzenia afektywne i samobójstwa rozszerzone z perspektywy psychopatologii sądowej. *Nastroje, 27*, s.2-3.

Główny Urząd Statystyczny [Statistics Poland]. (2025). *Sytuacja społeczno-gospodarcza kraju: Dane za I kwartał 2025 r.* https://ssg.stat.gov.pl

Kaliszczak, P., Kunz, J., & Bolechała, F. (2002). Samobójstwa poagresyjne – problematyka kryminalistyczno-procesowa. *Archiwum Medycyny Sądowej i Kryminologii, 52*(3), s.177-186.

Kowalski, N. (2020, April 23). Zabójstwo pod Poznaniem. Mężczyzna zastrzelił brata byłej partnerki i śmiertelnie się postrzelił. Prokuratura umorzy śledztwo. *Głos Wielkopolski.*https://gloswielkopolski.pl

Liem, M., Barber, C., Markwalder, N., Killias, M., & Nieuwbeerta, P. (2011). Homicide–suicide and other violent deaths: An international comparison. *Forensic Science International, 207*(-103), s.26-29

Liem, M., &Koenraadt, F. (2007). Homicide–suicide in the Netherlands: A study of newspaper reports, 1992–2005. *The Journal of Forensic Psychiatry & Psychology, 18*(4),s.4-6

Logan, J., Hill, H. A., Black, M. L., Crosby, A. E., Karch, D. L., Barnes, J. D., & Lubell, K. M. (2008). Characteristics of perpetrators in homicide-followed-by-suicide incidents: National Violent Death Reporting System—17 US states, 2003–2005. *American Journal of Epidemiology, 168*(9),s.175-177

Ługawiak, G. (2024, February 27). Bliscy ofiar tragedii w Zalasewie po kilkunastu miesiącach weszli do domu, w którym rozegrał się dramat. *Radio Poznań.*https://radiopoznan.fm.pl

Piasecka-Gabriel, J. (2022, April 6). Rozszerzone samobójstwo w Swarzędzu. Ojciec zabił 7-letnią córkę i siebie. Mężczyzna był skazany za znęcanie się nad żoną. *Głos Wielkopolski.*https://gloswielkopolski.pl

Shields, L. B. E., Rolf, C. M., Goolsby, M. E., & Hunsaker, J. C. (2015). Filicide–suicide: Case series and review of the literature. *The American Journal of Forensic Medicine and Pathology, 36*(3), s.5-7

Skowronek, R., Szczepański, M., Kirmes, T., Skowronek, A., Krzystanek, M., Chowaniec, M., & Chowaniec, C. (2016, September). Medyczno-sądowe, kryminalistyczne i psychiatryczne aspekty samobójstw poagresyjnych – analiza przypadków z terenu Górnego Śląska. Paper presented at the XVIII Scientific Congress of the Polish Society of Forensic Medicine and Criminology, Katowice, Poland, s.4-6

Statystyka Policja. (2023). *Zamachy samobójcze – Statystyka portal polskiej Policji w latach 2016–2023.* https://statystyka.policja.pl

Stukan, J., & Staszak, A. (2018). Samobójstwo rozszerzone i poagresyjne – próba uporządkowania pojęć. *Problemy Kryminalistyki, 301*(3),s.14-20

Żytnicki, P. (2016, March 25). Zabójstwo w Żernikach. Zamordowana 21-latka była wcześniej na policji, bo bała się byłego partnera. *Gazeta Wyborcza.*https://poznan.wyborcza.pl

Żytnicki, P. (2023, July 18). Nowe ustalenia po egzekucji w centrum Poznania. *Gazeta Wyborcza.*https://poznan.wyborcza.pl

Żytnicki, P. (2024, September 1). W domu pod Poznaniem policja znalazła dwa ciała w stanie rozkładu. *Gazeta Wyborcza.*https://poznan.wyborcza.pl

EJoHP 2(5)/2025

DOI: https://doi.org/10.21697/ejhp.0707.02
e-ISSN 2957-2002

2025, 5, 2: 13-20

Absenteeism and Work Inability Due to Alcohol Consumption in Poland

Agata Olearczyk
aolear@sgh.waw.pl
Healthcare Innovation Unit
SGH Warsaw School of Economics

Received: 5 Sep 2025; Revised: 19 Sep 2025; Accepted: 8 Oct 2025

Abstract

Alcohol consumption has long been embedded in social and cultural traditions worldwide, yet recent trends highlight its escalating public health implications. Statistically, approximately 1.2 million Poles need treatment, with an additional 4 to 5 million engaging in risky drinking behavior. Poland's per capita alcohol intake exceeds the EU average, and the country ranks second in alcohol-related mortality within the EU. The economic burden of alcohol-related issues in 2020 was estimated at over PLN 93 billion, surpassing tax revenues from alcohol sales. This study examines the scope and consequences of alcohol use in Poland among workers, emphasizing its societal, health, and economic impacts. The analysis includes data from the Social Insurance Institution (*Zakład Ubezpieczeń Społecznych* or "ZUS") on sick leave from 2006 to 2025, which is publicly available in annual reports on sick leave and the reasons for it. The following variables were analyzed: absence from work due to personal illness of persons insured with ZUS due to alcohol consumption (Code C), measured in the number of days (thousands) and the share of all sick leave (%), as well as the causes. The data was analyzed by year, gender, and age group and is presented with descriptive statistics. The analysis showed a consistent rise in sick leave due to alcohol use, with a 51% increase in 2024 compared to the previous year. The most affected age group was 35–49-year-olds, with most absences lasting up to five days, indicating recurrent alcohol-related issues among employees. Countries with effective regulation strategies demonstrate significant reductions in morbidity, mortality, and social costs, suggesting that Poland's approach should shift toward ongoing, multi-sectoral interventions to address this growing public health challenge.

Keywords: workforce, alcohol, employee, absenteeism

Introduction

Alcohol consumption has long been a part of social and cultural traditions worldwide, but in recent years, it has emerged as a growing public health concern. Increasing rates of alcohol use and abuse are impacting individuals, families, and communities across many regions, leading to a rise in health problems, workplace issues, and social challenges that result in costs on many levels. From the social perspective, alcohol is associated with domestic violence (Sontate et al., 2021) and a higher risk of accidents. It leads to multiple health problems, such as hypertension (Fuchs et al., 2021), cardiovascular diseases (Roerecke, 2021), liver failure (Chrystoja et al., 2020), cancer (Alattas et al., 2020), sleep disorders (Klob et al., 2020), lower male fertility (Finelli et al., 2021), and fetal damage (Popova et al., 2021).

This trend calls for a closer examination of the factors driving increased alcohol consumption, its consequences, and the urgent need for effective intervention strategies. As the issue continues to evolve, understanding its scope and implications as well as taking real actions are essential for policymakers, healthcare providers, and society at large to effectively address this pressing problem.

Alcohol consumption in Poland is an ongoing and growing issue among all groups, even pregnant women (Rehm et al., 2022). According to the latest research by the Institute of Mother and Child in Warsaw, based on an analysis of EtG in the hair of mothers who have just given birth, 50% of women drank alcohol during pregnancy, including 10% who drank it regularly and in large quantities (National Public Health Institute [PZH–PIB], 2023). In this case, the aspect of social pressure is significant. Research shows that the most commonly reported reasons for alcohol use during pregnancy were societal pressure and the belief that only "strong" alcohol or large quantities are harmful (Popova et al., 2022). However, the World Health Organization (WHO) warns that there is no safe level of alcohol intake and recommends several policy regulations to effectively lower alcohol consumption (WHO, 2022).

According to the data presented during the parliamentary session in 2025, approximately 900,000 Poles are addicted to alcohol, with an additional 2 to 2.5 million engaging in risky drinking. The average consumption is 11 liters of pure ethanol per person annually – more than the EU average of 9.8 liters. Moreover, Poland ranks second in the EU for alcohol-related deaths, with over 9 deaths per 100,000 residents annually. Between 2002 and 2020, alcohol consumption in Poland increased by 35%, and the number of sales outlets reached 490,000. For comparison, according to WHO recommendations, there should be no more than one alcohol sales outlet per 1,500 people; in Poland, the ratio is one per 270 (WHO, 2022).

The overall economic and societal costs of alcohol consumption in Poland in 2020 was assessed at PLN 93.3 billion (approximately EUR 20.5 billion). This exceeds the revenues from excise tax, leaving a gap of PLN 79.9 billion (Rutkowski, 2021).

While other countries introduce regulations to continually limit consumption, the public authorities have held off with more substantial moves, despite increases in previous years (Rehm et al., 2022). However, the experience of other countries that have implemented restrictions and regulations shows that they bring tangible health and social benefits. Regulations of alcohol consumption in Canada and Lithuania (Tran et al., 2022) lowered mortality rates due to cirrhosis of the liver. Globally, countries that have introduced regulations that continually increase alcohol prices and reduce its availability observed lower alcohol consumption (Kilian et al., 2023). Similar results have been presented after the introduction of alcohol control policies in former Soviet Union countries (Neufeld et al., 2021).

After 2023 and 2024, when Poland significantly increased penalties for driving vehicles under the influence of alcohol, we observed a decrease in the numbers of drivers held by the police (104,467 in 2022 vs. 92,324 in 2024) and of car accidents caused by drunk drivers (2,248 in 2022 vs. 1,201 in 2024) (Road Traffic Office of the Police Headquarters, 2025). This shows that interventions such as increased penalties work, but only in the short term unless they are increased regularly.

Alcohol is present throughout society and in all groups, including the workplace. However, the burden of alcohol consumption during the workday is unknown. The aim of this study is to assess the scale of absenteeism resulting from alcohol consumption among workers in Poland based on data from the Social Insurance Institution.

Material and Methods

This study is a secondary data analysis, using data from the Social Insurance Institution (2025) of the Republic of Poland (*Zakład Ubezpieczeń Społecznych* or "ZUS") on sick leave from 2006 to 2025, which is published in annual reports on sick leave and the reasons for it. The data is publicly available. In this study, the following variables were analyzed: absence from work due to personal illness of persons insured with ZUS due to alcohol consumption (Code C), measured in the number of days (thousands) and the share of all sick leave (%), as well as the causes. The data was analyzed by year, gender, and age groups and is presented with descriptive statistics.

Results

Over the years, we can observe a constant increase in sick leave with Code C, which stands for an inability to work caused by alcohol abuse (Figure 1). There was a notable increase in 2018 and 2019, primarily driven by women, followed by a decrease in 2020. Further analysis and possible insight from ZUS is needed in order to understand the underlying

causes. Nevertheless, since 2020 the incidence has been rising. In 2024, the increase in Code C sick leave was 51% – far higher than during the period 2020–2023 (Figure 2).

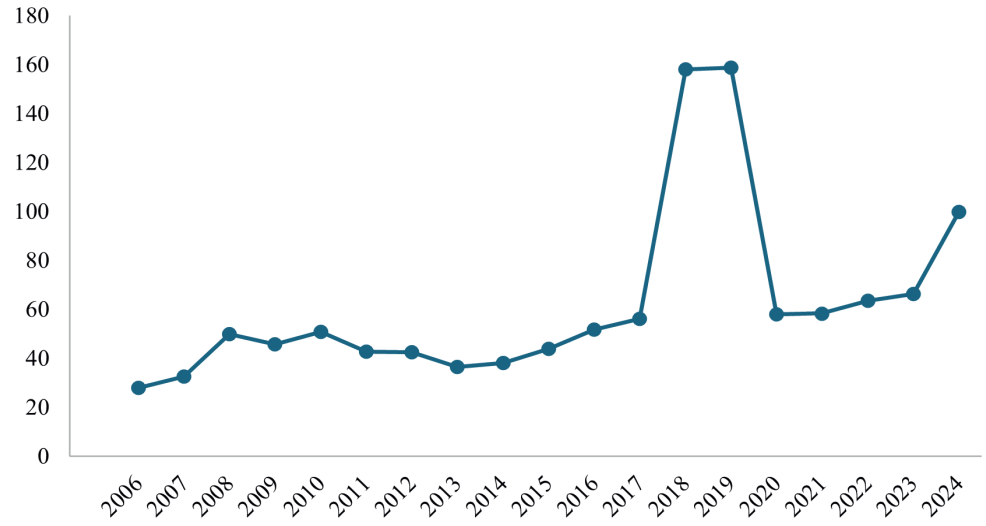

Figure 1. Sick leave due to alcohol consumption (Code C), 2006–2024, in thousands of days

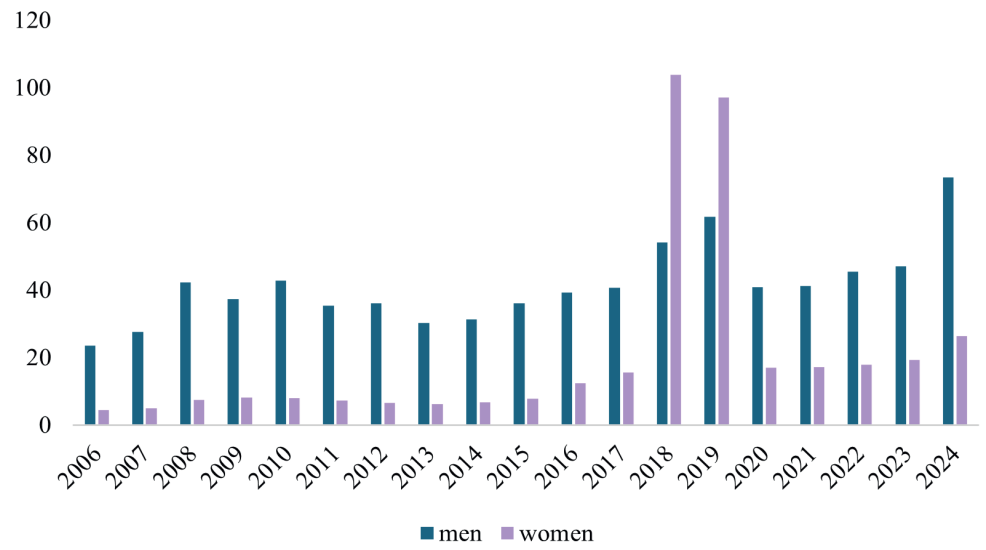

Figure 2. Sick leave due to alcohol consumption (Code C), by gender, in thousands of days

When broken down by age, sick leave with Code C is most frequently issued to individuals aged 40–44 (17.7% of all cases), followed closely by those aged 35–39 (Figure 3).

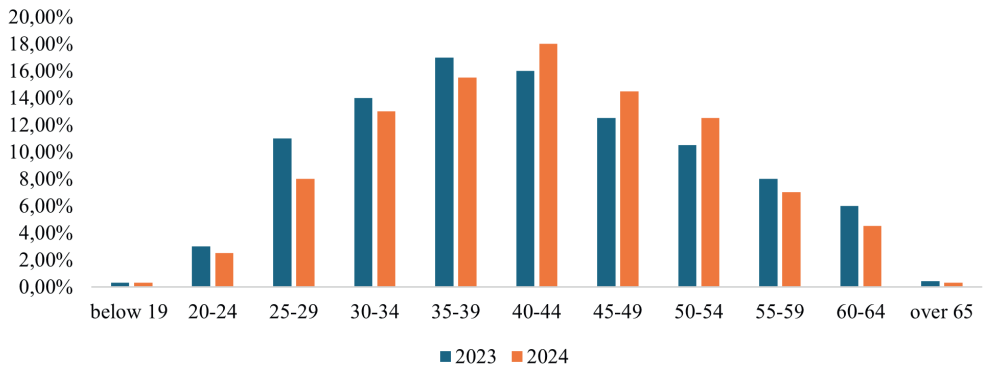

Figure 3. Sick leave due to alcohol consumption (Code C), by age group, in thousands of days

In 2024, people between 30 and 49 years of age received 62.8% of all doctor's notes for sick leave with Code C. Among men, the largest number was in the 40–44 age group, while women receiving sick leaves were mostly in the 30–34 age group. Approximately 75% of all Code C sick leave is issued to men.

The most common reasons for issuing sick leave with Code C were mental and behavioral disorders caused by alcohol use (77.1% among men and 46.5% among women). In terms of women, the alarming data shows that 14.7% of Code C sick leave was issued due to maternity care, which shows the scale of pregnant women drinking alcohol and requiring additional treatment (Table 1).

Table 1. Most common reasons for sick leave with Code C in 2024, by gender

Cause	Men	Women
Mental and behavioral disorders caused by alcohol use (Code F10)	77.1%	46.5%
Maternity care for conditions primarily related to pregnancy (Code O26)	n/a	14.7%
Toxic effects of alcohol (Code T51)	3.1%	2.1%
Mental and behavioral disorders caused by the alternating use of alcohol and psychoactive substances	2.1%	n/a
Acute rhinopharyngitis (Code J00)	n/a	3.1%
Acute upper respiratory tract infection of multiple or unspecified sites (Code J06)	n/a	3.0%
Alcoholic liver disease (Code K70)	1.0%	n/a
Open head wound (Code S01)	0.9%	n/a

Discussion

According to the Social Insurance Institution data for 2024, 31.9% of sick leave due to alcohol consumption (Code C) involved absences for 1–5 days. The sick leave benefit is not paid for the first 5 days of absence from work due to Code C, which shows the scale of people who are left with no income during their absence from work.

Data for the first half of 2025 further confirms this trend. In the first half of the year, doctors issued 4,971 such certificates, representing a 12.3% increase compared to the same period in the previous year. This translates to 50,400 days of work absence – an increase of 10.3% year-on-year. The vast majority of these absences lasted up to 5 days, which, according to experts, may indicate an occasional but recurrent pattern of alcohol consumption among employees (Zatońska et al., 2021).

Each day on sick leave means lower productivity and higher public expenditure, which generates further costs for society. The problem of alcohol use is even more complex because it affects all aspects of life, from home and streets to the workplace. The costs involve the social, health, and economic spheres. Polish young adults (18–35 years) regularly consume alcoholic beverages (94.6%) (Wysokińska & Kołota, 2022). Between 2002 and 2017, an increase in mortality wholly attributable to alcohol consumption was observed for both men and women and among all age groups in Poland (Zatoński et al., 2021). It is estimated that 4–5 million people in Poland are addicted to alcohol or engage in risky drinking and almost 1.2 million people require treatment (National Center for Combating Addiction, 2023). This issue increasingly affects young, professionally active individuals, often in managerial positions, between the ages of 30 and 40, including an increasing number of women. This data clearly demonstrates that alcohol-related issues permeate all segments of society, transcending economic status and educational background. Moreover, alcohol consumption significantly contributes health and social inequalities, exacerbating existing disparities (Ward et al., 2024). The burden of alcoholism intensifies these inequities, disproportionately affecting vulnerable populations and widening gaps in health outcomes. Therefore, public health policies must explicitly recognize and address these inequalities when designing and implementing interventions at both the national and local levels to ensure equitable health improvements across all communities.

The observed increase in alcohol consumption among the working population has significant practical implications for workplaces, employee health, and the broader economy. Elevated alcohol use is closely linked to a rise in sick leave, which directly undermines workplace productivity by increasing absenteeism and reducing overall workforce efficiency. This trend also poses serious risks to employee health. From an economic perspective, the cumulative effect of increased sick leave due to alcohol-related issues results in substantial financial costs for employers and the healthcare system. These findings underscore the urgent need for employers and policymakers to prioritize alcohol-related health risks as a critical factor that influences workforce well-being and organizational performance.

Future efforts should focus on comprehensive workplace interventions to mitigate alcohol consumption and its adverse effects on employee health, absenteeism, and health inequalities.

This study is a secondary analysis of data published by the Social Insurance Institution of the Republic of Poland. There is a lack of data on the type of work or occupation of the people taking sick leave due to alcohol consumption, which is limitation of this study. The economic costs of sick leave due to alcohol consumption (Code C) were not calculated.

Conclusion

The analysis shows that alcohol consumption in Poland is an emerging issue across all segments of society, including employees and even pregnant women. Countries that introduce policies that continually regulate alcohol consumption have observed results in the form of lower consumption and morbidity and mortality rates. Also, in the case of Poland, we noticed fewer traffic accidents involving alcohol and decreased consumption immediately following the implementation of regulations. However, the current situation in Poland shows that these cannot be one-off actions, but must be continuous, comprehensive plans throughout all community groups, including places of work.

References

Alattas, M., Ross, C.S., Henehan, E.R., & Naimi, T.S. (2020). Alcohol policies and alcohol-attributable cancer mortality in U.S. states. *Chemico-Biological Interactions*, 315, 108885. doi:10.1016/j.cbi.2019.108885

Chrystoja, B.R., Rehm, J., Crepault, J.-F., & Shield, K. (2020). Effect of alcohol prohibition on liver cirrhosis mortality rates in Canada from 1901 to 1956: A time-series analysis. *Drug and Alcohol Review*, *39*(6), pp. 637–645. doi:10.1111/dar.13089

Finelli, R., Mottola, F., & Agarwal, A. (2021). Impact of alcohol consumption on male fertility potential: A narrative review. *International Journal of Environmental Research and Public Health*, *19*(1), 328. doi:10.3390/ijerph19010328

Fuchs, F.D. & Fuchs, S.C. (2021). The effect of alcohol on blood pressure and hypertension. *Current Hypertension Reports*, *23*(10), 42. doi:10.1007/s11906-021-01160-7

Kilian, C., Lemp, J.M., Llamosas-Falcon, L., Carr, T., Ye, Y., Kerr, W.C., Mulia, N., Puka, K., Lasserre, A.M., Bright, S., Rehm, J., & Probst, C. (2023). Reducing alcohol use through alcohol control policies in the general population and population subgroups: A systematic review and meta-analysis. *eClinicalMedicine*, 59, 101996. doi:10.1016/j.eclinm.2023.101996

Koob, G.F. & Colrain, I.M. (2020). Alcohol use disorder and sleep disturbances: A feed-forward allostatic framework. *Neuropsychopharmacology*, *45*(1), pp. 141–165. doi:10.1038/s41386-019-0446-0

National Center for Combating Addiction. (2023). *2023 Report Addictions in Poland*. Retrieved September 2, 2025 from https://kcpu.gov.pl/wp-content/uploads/2024/03/Raport-2023-wersja-Internetowa.pdf

National Public Health Institute [PZH–PIB]. (2023). *Częstość picia alkoholu przez kobiety w ciąży*. Retrieved August 29, 2025 from 10:08).https://profibaza.pzh.gov.pl/FASD/Cz%C4%99sto%C5%9B%C4%87%20picia%20alkoholu%20przez%20kobiety%20w%20ci%C4%85%C5%BCy

Neufeld, M., Bobrova, A., Davletov, K., Stelemekas, M., Relika, S., Ferreira-Borges, C., Breda, J., & Rehm, J. (2021). Alcohol control policies in Former Soviet Union countries: A narrative review of three decades of policy changes and their apparent effects. *Drug and Alcohol Review*, *40*(3), pp. 350–367. doi:10.1111/dar.13204

Popova, S., Dozet, D., Shield, K., Rehm, J., & Burd, L. (2021). Alcohol's impact on the fetus. *Nutrients*, *13*(10), 3452. doi:10.3390/nu13103452

Popova, S., Dozet, D., Laboni, S.A., Brower, K., & Temple, V. (2022). Why do women consume alcohol during pregnancy or while breastfeeding? *Drug and Alcohol Review*, *41*(4), pp. 759–777. doi:10.1111/dar.13425

Rehm, J., Tran, A., Gobiņa, I., Janik-Koncewicz, K., Jiang, H., Kim, K.V., Liutkutė-Gumarov, V., Miščikienė, L., Reile, R., Room, R., Štelemėkas, M., Stoppel, R., Zatoński, W.A., & Lange, S. (2022). Do alcohol control policies have the predicted effects on consumption? An analysis of the Baltic countries and Poland 2000–2020. *Drug and Alcohol Dependence*, 241, 109682. doi:10.1016/j.drugalcdep.2022.109682

Roerecke, M. (2021). Alcohol's impact on the cardiovascular system. *Nutrients*, *13*(10), 3419. doi:10.3390/nu13103419

Rutkowski, R. (2021). *Społeczne i ekonomiczne koszty konsumpcji alkoholu*. Państwowa Agencja Rozwiązywania Problemów Alkoholowych (PARPA).

Social Insurance Institution of the Republic of Poland [ZUS]. *Absenteeism*. Retrieved September 2, 2025 from https://www.zus.pl/baza-wiedzy/statystyka/opracowania-tematyczne/absencja-chorobowa

Sontate, K.V., Kamaluddin, M.R., Mohamed, I.N., Mohamed, R.M.P., Shaikh, M.F., Kamal, H., & Kumar, J. (2021). Alcohol, aggression, and violence: From public health to neuroscience. *Frontiers in Psychology*, 12, 699726. doi:10.3389/fpsyg.2021.699726

Traffic Office of the Police Headquarters. *Wypadki drogowe. raporty roczne*. Retrieved September 2, 2025 from https://statystyka.policja.pl/st/ruch-drogowy/76562,Wypadki-drogowe-raporty-roczne.html

Tran, A., Jiang, H., Lange, S., Manthey, J., Stelemekas, M., Badaras, R., Petkeviciene, J., Radisauskas, R., Room, R., & Rehm, J. (2022). Can alcohol control policies reduce cirrhosis mortality? An interrupted time-series analysis in Lithuania. *Liver International*, *42*(4), pp. 765–774. doi:10.1111/liv.15151

Ward, S., Autaubo, J., Waters, P., Garrett, E., Batioja, K., Anderson, R., Furr-Holden, D., & Vassar, M. (2024). A scoping review of health inequities in alcohol use disorder. *American Journal of Drug and Alcohol Abuse*, *50*(1), pp. 27–41. https://doi.org/10.1080/00952990.2023.2296860

World Health Organization. (2022). *The SAFER initiative: A world free from alcohol-related harm*. Retrieved September 2, 2025 from https://www.who.int/initiatives/SAFER

Wysokińska, M. & Kołota, A. (2022). Assessment of the prevalence of alcoholic beverage consumption and knowledge of the impact of alcohol on health in a group of Polish young adults aged 18–35: A cross-sectional study. *International Journal of Environmental Research and Public Health*, *19*(23), 15425. https://doi.org/10.3390/ijerph192315425

Zatońska, K., Psikus, P., Basiak-Rasała, A., Stępnicka, Z., Wołyniec, M., Wojtyła, A., Szuba, A., & Połtyn-Zaradna, K. (2021). Patterns of alcohol consumption in the PURE Poland cohort study and their relationship with health problems. *International Journal of Environmental Research and Public Health*, *18*(8), 4185. https://doi.org/10.3390/ijerph18084185

Zatonski, W.A., Zatonski, M., Janik-Koncewicz, K., & Wojtyla, A. (2021). Alcohol-Related deaths in Poland during a period of weakening alcohol control measures. *JAMA*, *325*(11), pp. 1108–1109. https://doi.org/10.1001/jama.2020.25879

EJoHP 2(5)/2025

DOI: https://doi.org/10.21697/ejhp.0707.03
e-ISSN 2957-2002

2025, 5, 2: 21-30

The prevalence of overweight and obesity in 380 counties in Poland: A retrospective analysis of the National Health Fund dataset

Mateusz Jankowski

Department of Population Health, School of Public Health, Centre for Medical Postgraduate Education, Warsaw, Poland
ORCID: 0000-0002-7142-5167
Email: mateusz.jankowski@cmkp.edu.pl

Received: 10 Oct 2025; Revised: 15 Oct 2025; Accepted: 7 Nov 2025

Abstract

Excess body weight is an emerging public health problem. This study assesses the prevalence of overweight and obesity in 380 counties in Poland using the official, population-based data. This study is a retrospective analysis of the dataset published on October 1, 2025 by the National Health Fund within the project called "Healthy Data." Since March 2025, primary care providers (family doctors) in Poland have been obligated to report patients' height and weight during the first visit in a given year. The following BMI categories were defined: underweight (BMI < 18.5), normal weight (BMI 18.5–25.0), overweight (BMI 25–30.0), and obesity (BMI ≥ 30). Data on 13,402,601 adult individuals were included in the analysis. The overall prevalence of overweight was 37.7% and the prevalence of obesity was 26.8%. In total, 8,646,885 individuals (64.5% of the total population) had excess body weight. In 67.6% of all 380 counties in Poland, the prevalence of excess body weight (BMI ≥ 25) was between 65% and 70% of the county's population. The highest prevalence of excess body weight (overweight or obesity) was in Łosicki County (72.4%), and the lowest in Poznań County (55.8%). The findings from this study revealed health disparities related to the prevalence of overweight and obesity in Poland, with the highest prevalence being in northeastern Poland and the lowest in large cities.

Keywords: overweight; obesity; epidemiology; prevalence; Poland

Introduction

Excess body weight is an emerging public health problem (Ahmed et al., 2025; GBD 2021 Adult BMI Collaborators, 2025). The global prevalence of overweight and obesity is increasing (GBD 2021 Adult BMI Collaborators, 2025). Between 1990 and 2021, rates of overweight and obesity increased at the global and regional levels. Body Mass Index (BMI) is the most common tool for assessing weight in a population (Nuttall, 2015). A BMI of 25 or higher is recognized as excess body weight (Elmaleh-Sachs et al., 2023).

Excess body weight can significantly affect overall health. Having too much body fat increases one's risk of major health problems, including cardiovascular diseases (heart disease and stroke in particular), type 2 diabetes, musculoskeletal disorders (such as osteoarthritis), and certain cancers (such as endometrial, breast, and colon cancer) (Blüher, 2025; Ansari et al., 2020).

Poland is a European Union (EU) Member State, with a growing burden of excess body weight (Stival et al., 2022). In 2019/2020 in Poland, the prevalence of overweight was 42.2% (52.4% among men and 32.0% among women), and the prevalence of obesity was 16.4% (16.5% of men and 16.2% of women) (Stoś et al., 2022). Men, older participants, occupationally active individuals, those living in rural areas, and individuals with at least one chronic disease were significantly associated with excess body weight (Stoś et al., 2022). Despite the high prevalence of obesity in Poland, public awareness of obesity is relatively low (Sękowski et al., 2025). Most adults in Poland (84.8%) correctly identify obesity as a disease, but knowledge on the causes and treatment methods is limited (Sękowski et al., 2025).

Population-based data on overweight and obesity, including demographic and geographical differences, is necessary to plan and develop public health strategies on excess body weight. However, there is limited knowledge on health inequalities related to excess body weight in Poland. Therefore, the aim of this study was to assess the prevalence of overweight and obesity in Poland's 380 counties using the population-based data published by the National Health Fund.

Material and Methods

This study is a retrospective analysis of the dataset published on October 1, 2025 by the National Health Fund within the project called "Healthy Data" (National Health Fund, 2025). Since March 2025, primary care providers (family doctors) in Poland have been obligated to report patients' height and weight during the first visit in a given year; before March 2025, such data was reported voluntarily. Data on the number of patients from a given county who had at least one visit with their weight and height reported were analyzed. Patients aged 18 or over who were identified by their national identity

number were included. The patient's county and municipality at the end of March of the previous year were taken from the Central Register of Insured Persons. If multiple weight or height values were reported for a patient during the study period, the average value was calculated. The BMI scores were then calculated. Data for each of the 380 counties in Poland are presented.

The following BMI categories were defined: underweight (BMI < 18.5), normal weight (BMI 18.5–25.0), overweight (BMI 25–30.0), and obesity (BMI ≥ 30).

The data set included data for all patients for whom primary care providers reported data on height and weight between January 1 and June 30, 2025.

The data were analyzed with MS Excel (Microsoft, Redmond, Washington, USA). As this study is a retrospective analysis of a publicly available database, informed consent was waived. All the procedures followed the principles of the Declaration of Helsinki.

Results

A total of 13,402,601 individuals whose primary care physician reported their height and weight in the first half of 2025 were included in the analysis (Table 1). Of them, 5,051,155 were overweight and 3,595,730 were obese. The overall prevalence of overweight was 37.7% and that of obesity was 26.8%. In total, 8,646,885 individuals had excess body weight (64.5% of the total population). Additionally, 1.7% of individuals were underweight (Table 1).

Table 1. Prevalence of overweight and obesity in Poland

BMI status	n	Percentage of the total population
Underweight (BMI < 18.5)	233,233	1.7%
Normal weight (BMI 18.5–25.0)	4,522,483	33.7%
Overweight (BMI 25.0–30.0)	5,051,155	37.7%
Obesity (BMI ≥ 30)	3,595,730	26.8%
Total	13,402,601	100%

The prevalence of excess body weight is presented in Figure 1. In 67.6% of all 380 counties in Poland, the prevalence of excess body weight (BMI ≥ 25) was between 65% and 70% of the county's population. In 26.6%, the prevalence of excess body weight ranged from 60% to 65%; in 3.4%, it ranged was 70% or higher; and in 2.4%, it ranged from 55% to 60%.

In 95.3% of the counties (n = 362), the prevalence of overweight (BMI 25.0–30.0) ranged from 35% to 40%.

In 69.5% of the counties, the prevalence of obesity (BMI ≥ 30.0) was between 25% and 30% of the county's population; in 19.5%, it ranged from 30% to 35%; and in 11.1%, it ranged from 20% to 25%.

Among the 380 counties in Poland, the highest prevalence of excess body weight (overweight or obesity) was in Łosicki County (72.4%); the lowest was in Poznań County (55.8%) (Table 2). The prevalence of overweight varied from 34.2% in Kluczborski County to 42.1% in Konecki County (Table 3). The prevalence of obesity varied from 33.9% in Górowski County to 20% in Poznań County (Table 4).

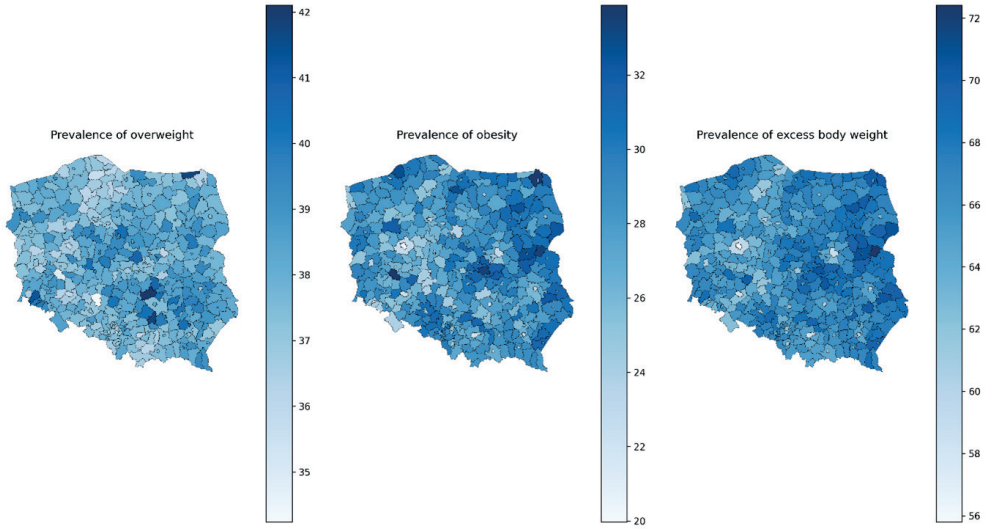

Figure 1. Prevalence of excess body weight (BMI ≥ 25) in each of the 380 counties in Poland

Table 2. Counties with the highest and lowest prevalence of excess body weight in Poland

Excess body weight: overweight and obesity		
Ranking among the 380 counties	**County**	**Prevalence of excess body weight (BMI ≥ 25)**
1	Łosicki	72.4
2	Siedlecki	70.8
3	Hajnowski	70.7
4	Rawski	70.6
5	Przysuski	70.5
6	Krasnostawski	70.4
7	Kolneński	70.4

Excess body weight: overweight and obesity		
Ranking among the 380 counties	**County**	**Prevalence of excess body weight (BMI ≥ 25)**
8	Janowski	70.2
9	Sokołowski	70.1
10	Milicki	70.1
11	Suwalski	70.1
12	Grajewski	70.0
13	Sejneński	70.0
14	Tarnobrzeski	69.8
15	Chełmski	69.7
16	Przemyski	69.6
17	Łukowski	69.6
18	Bielski	69.6
19	Węgrowski	69.5
20	Grójecki	69.5
361	Kępiński	61.5
362	Szczecin	61.3
363	Chojnicki	61.2
364	Bielsko-Biała	61.2
365	Opole	61.1
366	Gdańsk	61.0
367	Toruń	60.7
368	Zielona Góra	60.4
369	Lublin	60.3
370	Bydgoszcz	60.2
371	Kielce	60.0
372	Rzeszów	59.9
373	Nowy Sącz	59.6
374	Leszno	59.3
375	Poznański	59.3
376	M. St. Warszawa	58.7
377	Wrocław	58.3
378	Sopot	58.0
379	Kraków	57.9
380	Poznań	55.8

Table 3. Counties with the highest and lowest prevalence of overweight in Poland

Overweight		
Ranking among the 380 counties	**County**	**Prevalence of overweight (BMI 25.0–30.0)**
1	Konecki	42.1
2	Pińczowski	41.8
3	Gołdapski	41.8
4	Lwówecki	41.2
5	Łowicki	40.7
6	Przysuski	40.6
7	Pleszewski	40.3
8	Lipnowski	40.3
9	Kolbuszowski	40.2
10	Jędrzejowski	40.2
11	Ostrowiecki	40.2
12	Skarżyski	40.2
13	Jelenia Góra	40.1
14	Kłobucki	40.1
15	Krosno	40.1
16	Sandomierski	40.1
17	Sokołowski	39.9
18	Jeleniogórski	39.9
19	Buski	39.9
20	Turecki	39.9
361	Tychy	36.3
362	Chodzieski	36.3
363	Grodziski	36.2
364	Sztumski	36.2
365	Sępoleński	36.2
366	Średzki	36.2
367	Świebodziński	36.2
368	Limanowski	36.2
369	Chorzów	36.1
370	Tczewski	36.1
371	Gdańsk	36.1
372	Chojnicki	36.1

Overweight		
Ranking among the 380 counties	**County**	**Prevalence of overweight (BMI 25.0–30.0)**
373	Pucki	36.0
374	M. St. Warszawa	36.0
375	Wrocław	35.9
376	Kraków	35.9
377	Poznań	35.8
378	Kartuski	35.6
379	Górowski	34.8
380	Kluczborski	34.2

Table 4. Counties with the highest and lowest prevalence of obesity in Poland

Obesity		
Ranking among the 380 counties	**County**	**Prevalence of obesity (BMI ≥ 30.0)**
1	Górowski	33.9
2	Suwalski	33.7
3	Rawski	33.4
4	Łosicki	33.3
5	Sztumski	32.9
6	Sławieński	32.8
7	Siedlecki	32.6
8	Kolneński	32.4
9	Hajnowski	32.2
10	Krasnostawski	32.1
11	Łukowski	31.9
12	Żyrardowski	31.9
13	Białobrzeski	31.9
14	Czarnkowsko-Trzcianecki	31.8
15	Sejneński	31.6
16	Gostyniński	31.6
17	Grójecki	31.6
18	Milicki	31.6
19	Skierniewicki	31.5
20	Przemyski	31.4

Obesity		
Ranking among the 380 counties	**County**	**Prevalence of obesity (BMI ≥ 30.0)**
361	Kamiennogórski	23.8
362	Kłodzki	23.8
363	Kępiński	23.7
364	Zielona Góra	23.5
365	Lipnowski	23.4
366	Lublin	23.3
367	Bydgoszcz	23.1
368	Rzeszów	22.8
369	Poznański	22.7
370	M. St. Warszawa	22.7
371	Krosno	22.6
372	Wrocław	22.4
373	Kalisz	22.4
374	Jelenia Góra	22.3
375	Nowy Sącz	22.2
376	Leszno	22.0
377	Kraków	22.0
378	Kielce	21.8
379	Sopot	20.6
380	Poznań	20.0

Discussion

This study presents population-based data on the prevalence of overweight and obesity in the 380 counties in Poland. The findings from this study revealed significant geographic differences in the prevalence of overweight and obesity. The overall prevalence of excess body weight is high (64.5% of the adult population). Marked differences in the prevalence of excess body weight between counties were noted.

Previous data in Poland reported that the prevalence of excess body weight in 2019/2020 was estimated at 58.6% of the adult population (Stoś et al., 2022). In this population-based study (first half of 2025), the prevalence of excess body weight was 64.5%. Findings from this study suggest that the prevalence of excess body weight is growing. This phenomenon may be partially caused by the COVID-19 pandemic and changes in lifestyle caused by pandemic-related experiences (Anderson et al., 2023; Nour et al., 2023).

The findings also show that there is a high burden of excess body weight in most regions of Poland, with almost 90% of counties having more than one quarter of citizens with obesity. This underscores the need for health policy programs developed by local governments to target obesity prevention and management (Augustynowicz et al., 2019).

There were significant differences in the prevalence of excess body weight between geographical regions, with the highest prevalence (BMI ≥ 25) being in eastern Poland. Moreover, large cities were characterized by a lower prevalence of excess body weight. This observation requires further analysis of the lifestyle factors that may affect weight gain, especially in rural areas.

Obesity disparities may be caused by social and economic factors (Williams et al., 2024). Lower educational level, lower economic status, and transportation barriers may increase the risk of excess body weight. Moreover, disparities in access to obesity care may also occur (Washington et al., 2023). Lifestyle-related factors play a crucial role in the development of overweight and obesity, especially eating habits and patterns of physical activity, so public health policies should address disparities in health promotion programs.

This study has practical implications for policymakers. Firstly, disparities between counties in the percentage of the population with excess body weight are presented. The maps presented in this study clearly show the regions with the highest prevalence of overweight and obesity. Secondly, this study reveals a growing burden of excess body weight when compared to previous studies. Thirdly, the study highlights the need to implement public health policies for the prevention and treatment of overweight and obesity, as their health and economic burdens are high.

There are several limitations of this study. Firstly, it is a retrospective analysis of data published by the National Health Fund, so the scope of analysis is limited to the data available therein. Secondly, only adults who visited a primary care physician in the first half of 2025 were considered. Data was provided for over 13 million adults, but the analysis did not cover the whole population of adults in Poland. Thirdly, there is a risk that some patients may self-report data on height and weight and not all patients were measured and weighed by health professionals.

Conclusions

This study revealed that excess body weight is an emerging public health problem in Poland. The findings revealed health disparities related to the prevalence of overweight and obesity in Poland. The prevalence of overweight and obesity was the highest in north-eastern Poland, with the lowest prevalence being in large cities. The disparities in BMI values across Polish counties require action from the public health authorities and should be addressed through public health policies at both the national and local levels.

References

Ahmed, S.K. & Mohammed, R.A. (2025). Obesity: Prevalence, Causes, Consequences, Management, Preventive Strategies and Future Research Directions. *Metabol Open*, 27, 100375. DOI: 10.1016/j.metop.2025.100375

Anderson, L.N., Yoshida-Montezuma, Y., Dewart, N., Jalil, E., Khattar, J., De Rubeis, V., Carsley, S., Griffith, L.E., & Mbuagbaw, L. (2023). Obesity and Weight Change During the COVID-19 Pandemic in Children and Adults: A Systematic Review and Meta-Analysis. *Obesity Reviews*, *24*(5), e13550. DOI: 10.1111/obr.13550

Ansari, S., Haboubi, H., & Haboubi, N. (2020). Adult Obesity Complications: Challenges and Clinical Impact. *Therapeutic Advances in Endocrinology and Metabolism*, 11, 2042018820934955. DOI: 10.1177/2042018820934955

Augustynowicz, A., Czerw, A., Borowska, M., Deptała, A., Dykowska, G., & Fronczak, A. (2019). Prevention of Overweight and Obesity Undertaken by Local Government Units in Poland. *Health Policy*, *123*(5), 499–502. DOI: 10.1016/j.healthpol.2019.03.006

Blüher, M. (2025). An Overview of Obesity-Related Complications: The Epidemiological Evidence Linking Body Weight and Other Markers of Obesity to Adverse Health Outcomes. *Diabetes, Obesity and Metabolism*, *27*(Suppl 2), 3–19. DOI: 10.1111/dom.16263

Elmaleh-Sachs, A., Schwartz, J.L., Bramante, C.T., Nicklas, J.M., Gudzune, K.A., & Jay, M. (2023). Obesity Management in Adults: A Review. *JAMA*, *330*(20), 2000–2015. DOI: 10.1001/jama.2023.19897

GBD 2021 Adult BMI Collaborators. (2025). Global, Regional, and National Prevalence of Adult Overweight and Obesity, 1990–2021, With Forecasts to 2050: A Forecasting Study for the Global Burden of Disease Study 2021. *The Lancet*, *405*(10481), 813–838. DOI: 10.1016/S0140-6736(25)00355-1

National Health Fund [NFZ]. (2025). *Numbers of BMI Categories in Poland*. Retrieved October 8, 2025 from https://ezdrowie.gov.pl/portal/home/badania-i-dane/zdrowe-dane/zestawienia/bmi-2025

Nour, T.Y. & Altintaş, K.H. (2023). Effect of the COVID-19 Pandemic on Obesity and Its Risk Factors: A Systematic Review. *BMC Public Health*, *23*(1), 1018. DOI: 10.1186/s12889-023-15833-2

Nuttall, F.Q. (2015). Body Mass Index: Obesity, BMI, and Health: A Critical Review. *Nutrition Today*, *50*(3), 117–128. DOI: 10.1097/NT.0000000000000092

Sękowski, K., Mazurek, A., Grześczyk-Nojszewska, Z., Jankowski, M., Kamińska, A., Olearczyk, A., Silczuk, A., & Grudziąż-Sękowska, J. (2025). Public Awareness of Obesity Causes, Complications, and Treatment Methods in a Representative Sample of Adults in Poland. *Frontiers in Public Health*, 13, 1656877. DOI: 10.3389/fpubh.2025.1656877

Stival, C., Lugo, A., Odone, A., van den Brandt, P.A., Fernandez, E., Tigova, O., Soriano, J.B., José López, M., Scaglioni, S., & Gallus, S., TackSHS Project Investigators. (2022). Prevalence and Correlates of Overweight and Obesity in 12 European Countries in 2017–2018. *Obesity Facts*, *15*(5), 655–665. DOI: 10.1159/000525792

Stoś, K., Rychlik, E., Woźniak, A., Ołtarzewski, M., Jankowski, M., Gujski, M., & Juszczyk, G. (2022). Prevalence and Sociodemographic Factors Associated with Overweight and Obesity Among Adults in Poland: A 2019/2020 Nationwide Cross-Sectional Survey. *International Journal of Environmental Research and Public Health*, *19*(3), 1502. DOI: 10.3390/ijerph19031502

Washington, T.B., Johnson, V.R., Kendrick, K., Ibrahim, A.A., Tu, L., Sun, K., & Stanford, F.C. (2023). Disparities in Access and Quality of Obesity Care. *Gastroenterology Clinics of North America*, *52*(2), 429–441. DOI: 10.1016/j.gtc.2023.02.003

Williams, M.S., McKinney, S.J., & Cheskin, L.J. (2024). Social and Structural Determinants of Health and Social Injustices Contributing to Obesity Disparities. *Current Obesity Reports*, *13*(3), 617–625. DOI: 10.1007/s13679-024-00578-9

EJoHP 2(5)/2025

DOI: https://doi.org/10.21697/ejhp.0707.04
e-ISSN 2957-2002

2025, 5, 2: 31-47

Dealing with Overtreatment in Regional Politics: An Interview Study in Region Zealand, Denmark

Katrine L. Albrechtsen, Sara Ebbesen, Sarah Brandt, Alexandra B. Jønsson
Center for Health & Society, Department of People and Technology, Roskilde University, Denmark
Katrine.albrechtsen@outlook.dk

Received: 16 Oct 2025; Revised: 15 Nov 2025; Accepted: 18 Nov 2025

Abstract

Background: Overtreatment in healthcare is a growing concern, not only due to rising costs but also due to the potential harm to patients. This issue is particularly complex within political decision-making frameworks, where the expectations of citizens and the reality of resource limitations collide. In Region Zealand, Denmark, the challenges of overtreatment are amplified by a combination of high patient expectations, political pressures, and resource scarcity.
Aim: This study investigates how overtreatment is perceived and addressed by regional politicians in Region Zealand, focusing on the interplay between patient expectations, political decision-making, and healthcare resource management.
Methods: A qualitative study was conducted involving interviews with regional politicians, healthcare professionals, and patient representatives. Thematic analysis was used to identify the key factors influencing overtreatment and the way that these factors shape political decision-making in the healthcare sector.
Results: Three major themes emerged from the data: (1) the role of patient expectations in driving overtreatment, (2) political constraints and the complexity of decision-making, and (3) the influence that vocal citizens with many resources have on healthcare policies.
Conclusion: Addressing overtreatment requires a balanced approach that considers both the medical needs of patients and the broader political and economic context. The study highlights the need for differentiated healthcare policies that align with the varying needs of citizens in different regions.

Keywords: overtreatment, health policy, political decision-making, patient expectations, healthism, defensive medicine, public healthcare systems, regional healthcare governance

Introduction

Healthcare systems across the globe are facing increasing strain – not only from escalating costs, demographic shifts, and inequalities in access, but also from the rise in overtreatment and overdiagnosis. Overtreatment, often leading to overdiagnosis, refers to medical interventions being applied without a clear clinical benefit, and in many cases with the potential to do harm rather than to heal (Brodersen et al., 2018). This burdens healthcare budgets while exposing patients to unnecessary procedures, side effects, and psychological distress (Braithwaite et al., 2020). In the context of aging populations and chronic staff shortages, such as in Denmark, these inefficiencies pose critical threats to the sustainability of the healthcare system (Fredriksson et al., 2013).

Importantly, the consequences of overdiagnosis extend beyond individual and economic costs: they also have significant environmental implications. As Barratt and McGain (2021) argue, overdiagnosis contributes directly to healthcare's carbon footprint by proliferating carbon-intensive assays and treatments without any corresponding health benefits. In an era of climate emergency, this amounts to an ecological problem in addition to a clinical and ethical one. Tackling overdiagnosis, therefore, is not only about better medicine, but also about climate responsibility and sustainability in the provision of care.

These patterns of excess coexist with persistent underuse of care in marginalized groups – a duality encapsulated by Julian Tudor Hart's inverse care law, which holds that those in greatest need of healthcare often receive the least (Hart, 1971). This phenomenon amplifies existing health inequities and underscores a paradox in modern healthcare: while some receive too much care, others receive too little (Berwick, 2017). Addressing both overtreatment and underprovision is thus central to building a healthcare system that is equitable, efficient, and environmentally sustainable.

Research on political decision-making in health policy has traditionally focused on structural factors such as institutional frameworks, economic incentives, and evidence-based guidelines. Much of the existing literature emphasizes rational prioritization and technocratic governance in the allocation of healthcare resources. Other studies have explored the role of stakeholders, bureaucratic actors, and lobbying efforts by professional groups.

However, considerably less attention has been paid to how politicians' personal values, cultural backgrounds, and individual perceptions of illness, treatment, and health shape their decisions. Moreover, there is a notable lack of research examining how contemporary concerns – such as overtreatment – are perceived and addressed in political processes, and to what extent these concerns influence actual policy choices.

This study aimed to explore how regional politicians in Region Zealand perceive and navigate the issue of overtreatment in healthcare, with a particular focus on the role

of cultural expectations, political constraints, and pressure from citizens in shaping decision-making processes. In this paper, we report the results using a thematic analysis.

Background: Health Policy-Making in Denmark

The Danish healthcare system is a universal, publicly financed system primarily funded through taxes. It is built on the principle of equal access to care for all citizens and is characterized by a high degree of decentralization. Responsibility for providing and organizing healthcare services lies mainly with Denmark's five regions, each governed by an elected regional council (Greve, 2022).

The regions hold the operational and financial responsibility for most healthcare services, including hospitals, mental health care, specialized services, and agreements with private providers. They also coordinate with family doctors, who function as gatekeepers to secondary care. This means that although the national government sets the overall policy frameworks and allocates block grants to the regions, it is the regions that make concrete decisions about service delivery, resource allocation, and the priorities of care (Greve, 2022).

Each regional council consists of 41 elected politicians who are responsible for strategic leadership and overall management of healthcare services within the region. These regional politicians make crucial decisions about budgets, hospital planning, service levels, and healthcare infrastructure. They must balance national policy directives and fiscal constraints with regional healthcare needs and the expectations of citizens, professionals, and interest groups (Sørensen et al., 2011).

Regional politicians thus play a dual role: they are both implementers of national policy and autonomous decision-makers within their own jurisdictions. They operate in a politically complex environment where healthcare delivery must be adapted to local conditions, demographic changes, and shifting public expectations. At the same time, they are held accountable by voters and are responsive to stakeholder pressures, including patient groups, professional associations, and the media (Sørensen et al., 2011).

Methods

Study Design

This study was designed as an exploratory qualitative study using semi-structured interviews. The exploratory approach allowed for a deeper understanding of the perceptions of overtreatment from the perspective of regional politicians in Region Zealand. Semi-structured interviews were chosen to provide flexibility in exploring participants'

views while maintaining the focus on key topics related to overtreatment and healthcare decision-making.

Participants

The participants were selected using purposive sampling among regional politicians from different political parties in Region Zealand. A total of 7 politicians representing a diverse range of political perspectives participated in the study. This approach allowed for an exploration of how political ideologies and affiliations influence perceptions of overtreatment and healthcare decision-making.

Politician	Gender	Interview type	Regional political experience	Party affiliation	Date(s) of interview(s)
Politician A	Male	Explorative + Semi-structured	2+ years	Left-wing	January 11, 2024; April 2, 2024
Politician B	Female	Explorative + Semi-structured	2+ years	Left-wing	January 17, 2024; March 4, 2024
Politician C	Female	Explorative	10+ years	Right-wing	January 18, 2024
Politician D	Female	Semi-structured	10+ years	Center	March 8, 2024
Politician E	Female	Semi-structured	2+ years	Right-wing	March 15, 2024
Politician F	Male	Semi-structured	2+ years	Right-wing	March 26, 2024
Politician G	Male	Semi-structured	6+ years	Right-wing	April 5, 2024

Data Collection

The data were collected through both face-to-face and virtual interviews conducted via Microsoft Teams. Each interview lasted approximately 60 minutes and was audio--recorded with the participant's consent. The semi-structured format allowed the interviewers to explore the participants' views on overtreatment, healthcare decision-making, and patient expectations while maintaining the flexibility to follow emerging themes. The interviews were conducted in Danish; the transcripts were later translated into English for the purposes of this article. All participating politicians were assured anonymity to encourage openness during the discussions.

Data Analysis

Thematic analysis was conducted using NVivo software to manage and analyze the interview data. The transcribed interviews were imported into NVivo, where they were

coded by three researchers independently. This process identified key themes and patterns within the data. The researchers then compared and refined their codes through an iterative process, ensuring consistency and reliability. The use of NVivo facilitated the organization of large amounts of qualitative data, making it easier to explore complex themes such as political decision-making, patient expectations, and overtreatment.

The findings were examined through the lens of *healthism*, a concept that frames health as both an individual moral responsibility and a societal value (Crawford, 1980). In Denmark, where public health culture is deeply embedded and preventive healthcare is prioritized, healthism helps explain why citizens increasingly seek medical services even when there is no clear clinical need. This ethos promotes self-optimization, amplifies demand, and contributes to the normalization of overtreatment (Kristensen et al., 2016).

Results

1. The Role of Patient Expectations in Driving Overtreatment

One of the central themes that emerged from the interviews with regional politicians from Zealand is the significant influence that patient expectations have on healthcare provision. Though it is not directly linked to their work as politicians, the data revealed how concerns over growing patient expectations are present among politicians as healthcare policymakers. Across multiple interviews, the interviewees expressed concern that patients often expect access to the most advanced or comprehensive care, regardless of clinical necessity. As Politician C put it: "Expectations of what people can get are sky-high." This mismatch between public expectations and medical judgment places considerable pressure on healthcare providers, who must navigate demands for interventions that may not offer a clinical benefit.

The data also showed that politicians refer to healthcare professionals and patient experiences when explaining why overuse is present in healthcare provision, thus linking it directly to the healthcare encounters and not just the structural policies that surround them.

Politician C elaborated: "When it's your father or your mother, you see it differently. You want everything possible to be done." This personal dimension reinforces how emotionally charged situations can override more abstract understandings of overtreatment. The tendency to equate more interventions with better care reflects a broader societal narrative, where medical treatment becomes a moral entitlement.

Politician B, another interviewee, observed that "people come into the clinic already convinced that they need a scan or a prescription… and it's difficult for doctors to say no when the patient believes it's their right." This dynamic illustrates a common challenge for healthcare professionals, who must reconcile their clinical judgment with patient satisfaction and the increasing consumer orientation of healthcare.

1.1 Cultural Pressures

Politician D explained the cultural trend of individual prevention through an exaggerated focus on one's health, while also pointing out how this would divide the population and enforce health inequities: "We have many citizens who listen too much to the signals from their bodies. If they feel something is wrong, they demand that it be checked. But at the same time, there are others who ignore symptoms altogether." This interviewee concluded that such behavior results in uneven healthcare-seeking and increased pressure on providers to respond to subjective concerns.

Politician F emphasized the fear-based decision-making that results from this cultural context. "People would prefer one treatment too many rather than too few. Even when a doctor says there's nothing more to be done, patients still push for more tests or treatments." This fear of missing something reflects both cultural ideals of health vigilance and the emotional weight of potential illness.

The cultural pressure was mentioned in the context of patients, but also as something that would influence their position in policy decisions. Politician D described how rising medical capabilities, longer life expectancy, and public expectations have led to unsustainable patterns of overtreatment: "We overtreat. Professionally, we are becoming more and more capable. And we have a population that lives longer, which means more years where treatment is needed. […] The medical assessments show that we allocate a relatively large portion of resources to overtreatment. And this is not sustainable unless we, as the regional council, address it. It is a sensitive issue because it touches something in all of us – overtreatment." This illustrates how cultural and emotional dimensions of health – such as longevity, expectations for care, and discomfort with setting limits – interact with structural constraints and professional concerns. Policymakers find themselves caught between public demand and medical sustainability.

Politician G emphasized how public resistance to denial of care reinforces this cultural trend:

"I'm quite convinced that many citizens won't accept being told no. There would likely be many who would file complaints. I mean, we already have many complaints today about all kinds of things, right?" This highlights how political decisions are constrained not only by clinical considerations, but also by an anticipatory logic of public dissatisfaction. The cultural expectation of access to care, combined with a strong tendency to contest limits, contributes to a political environment in which avoiding overtreatment becomes both technically and politically difficult.

1.2 Legal and Institutional Pressures Fueling Defensive Medicine

According to our interviewees, legal frameworks and institutional structures also play a significant role in shaping overtreatment. In the interviews, the politicians kept bringing

up what they thought healthcare professionals would feel or how and why patients acted in particular ways, thus revealing underlying notions that may inform their own political practice. For instance, Politician B explained that healthcare professionals are under pressure not only from patients, but also from a system that fosters defensive medicine: "As a nurse or doctor, you don't want to miss anything because it could cost you your medical license."

According to the participants, this defensive mindset leads to excessive tests or procedures being ordered, as a safeguard against complaints or litigation rather than out of medical necessity. Politician F added that "doctors say they fear complaints. It's happening more and more, and they're afraid that if they don't [order extra tests], they might face a lawsuit."

This legal insecurity, combined with the pressure to meet patient demands, results in a clinical environment where the safest course of action is often to overtreat, according to the politicians. Politician B also discussed what they expected to be professional uncertainty among younger doctors: "They'll take an X-ray, and then they'll also order scans – both a CT and an MRI. They do it because they're uncertain and don't have the professional confidence that comes from having had good mentors."

1.3 Misinformation and the Unequal Impact of Health Literacy

Another amplifying factor in the patient-driven overtreatment mentioned by our interviewees is the widespread access to health information online. According to the politicians, this can empower patients, but it can also lead to misinformation and incorrect self-diagnoses. Politian B remarked that "patients often come in with pre-diagnosed conditions they've read about online. They demand scans or treatments, believing they know what's wrong."

Politician D pointed out that this dynamic challenges clinical authority and reinforces social inequalities: "Well-educated citizens are often more articulate and persistent when they demand care. They argue convincingly with doctors, pushing for tests and treatments that others might not." Thus, those with greater health literacy and confidence are more likely to secure services – whether necessary or not – underscoring how healthism interacts with class and education.

1.4 Over-Specialization and Fragmented Care

Finally, several of the politicians pointed to over-specialization and poor coordination as systemic contributors to overtreatment. Because patients receive care from multiple specialists, the risk of duplicate or conflicting treatments increases. Politician E highlighted this issue in relation to cancer care in Denmark: "We've focused so much on cancer, but there are also other life-threatening diseases being sidelined. If a patient has 2 or 3

diseases, there's a lack of coordination between them. This means that patients might receive treatments that actually work against each other."

Politician D echoed the need for better interdisciplinary collaboration: "Overtreatment often happens because our healthcare system is siloed. We need stronger cross-disciplinary collaboration to ensure that treatments are holistic and necessary."

2. Political Constraints and the Complexity of Decision-Making

A recurring theme across the interviews was the complexity of political decision-making and its impact on addressing overtreatment. Regional politicians expressed frustration with the bureaucratic and systemic limitations they face, which often hinder their ability to implement meaningful changes. As Politician B, a first-term regional member, put it: "It's not easy… we can't just do what we want because there are so many layers to the decision-making process."

This sentiment was echoed by Politician E, who reflected on the ethical and practical dilemmas inherent in health policy: "It's a sensitive issue because it touches something within all of us. We understand that we're using the resources wrongly, we distribute them wrongly." Although the inefficiencies are widely recognized, the challenge lies in balancing competing priorities with tight budgets and high public expectations. "We want to give everyone the best care possible, but the reality is that we can't do everything for everyone. It's a matter of prioritization, and that's never an easy choice," Politician E added.

2.1 Navigating National Constraints and Operational Responsibility

One of the key structural barriers to reform identified by the interviewees is the division of authority between national and regional governments. While the regions are responsible for implementing care, many key healthcare priorities – such as the national cancer treatment packages – are mandated at the national level. As Politician C explained, "there are so many national standards we have to meet… we can't change those even if we wanted to prioritize differently." This limits the flexibility of regional policymakers and leaves them little room to reallocate resources or implement reforms tailored to local needs.

Politician A reinforced this tension: "We are bound by what's been agreed upon nationally, but we also face local demands that don't always align with those policies. It's a balancing act we have to navigate constantly." The lack of local autonomy, combined with top-down targets, creates a governance environment that is resistant to adaptive or nuanced responses to overtreatment.

2.2 The Political Risks of Reducing Services

Another significant constraint is the political cost associated with reducing services, even when they are medically unnecessary. As Politician A noted, "It's a difficult political decision to take something away from people – it's always easier to add something." This reflects a broader political logic where expanding healthcare offerings is viewed more favorably than restricting them, regardless of their clinical value.

Politician F raised a similar point: "There's no doubt that many citizens will push for more treatment, but sometimes you have to be tough and say no. In politics, it's all about prioritization." The reluctance to limit access to care – even when such care is of low or no value – stems from a fear of public backlash, complaints, and political damage. […] This was brought up in our regional council… so why do we continue doing it?" The persistence of overtreatment, despite an awareness of its harms, highlights the difficulty of translating insight into action under political pressure.

2.3 The Influence of Vocal, Privileged Groups

A critical issue raised by several interviewees is the disproportionate influence of vocal people of means in shaping healthcare priorities. Politician B remarked: "It's the people with the most resources who shout the loudest. They have the most airtime." These groups, often better educated and more articulate, are more successful in advocating for access to healthcare services – even when the clinical justification is weak.

Politician E added that "when patients pressure doctors for more tests, it's often those who are better at articulating their demands that get what they want." This dynamic contributes to inequities in healthcare access, where more assertive individuals receive more care – sometimes unnecessarily – while less vocal populations may go underserved. As a result, political decision-making is not always guided by need, but by who can make the most noise.

2.4 Administrative Complexity and Structural Inertia

In addition to public and political pressures, many politicians pointed to the administrative complexity of the healthcare system as a major barrier to addressing overtreatment. The need to build consensus across political parties, follow established procedures, and adhere to numerous rules can slow down or block reform efforts. Politician F described this frustration clearly: "This was brought up in our regional council… so why do we continue doing it?" Despite recognizing the problem, the system's structure often makes it difficult to act decisively.

This bureaucratic inertia means that even well-intentioned politicians may feel powerless to effect change. As Politician B noted, "We're bound by the system. Even when we

know something isn't working, changing it is incredibly slow." These systemic obstacles contribute to the continuation of practices that are recognized as unnecessary or even harmful.

2.5 Financial Pressures and Missed Opportunities for Reallocation

A final, but critical, issue raised by interviewees is the financial strain that overtreatment places on the public healthcare system. With limited resources and rising demand – particularly from an aging population – several politicians expressed concern about wasteful spending on treatments with little or no clinical benefit. Politician G emphasized the opportunity cost of overtreatment: "If 20% of what we do is completely useless, that's a billion kroner. We can't save that billion, but even if we could say that 5% or 10% of what we do has no value, we could redirect those funds to other areas in need."

This underscores the importance of evaluating and phasing out low-value interventions, not only to reduce harm but also to free up resources for more impactful care. Yet, as Politician G also pointed out, societal attitudes remain a barrier: "It's difficult because we live in a society where if people don't get what they want, there's a complaint." This culture of consumerism and entitlement, combined with legal fears and patient dissatisfaction, perpetuates overtreatment and diverts resources from areas of genuine medical need.

3. The Influence of Vocal, Privileged Citizens

A central theme emerging from the interviews is the disproportionate influence that vocal citizens with many resources have on healthcare policy and service delivery. These individuals – often from wealthier or more educated backgrounds – tend to have greater access to media platforms, political networks, and healthcare literacy. This allows them to advocate effectively for their personal healthcare needs, often at the expense of broader equity.

As politician B observed: "It's the people with the most resources who shout the loudest… they have the most airtime." This unequal access to platforms of influence can skew political and administrative attention toward the concerns of well-organized, articulate groups, even when their demands do not align with medical needs or system-wide priorities.

3.1 Healthcare Navigation and Strategic Advocacy

Several politicians emphasized how privileged citizens are better equipped to navigate and challenge the healthcare system, using their knowledge and confidence to secure

services more easily. Politician D noted that "there's a difference in how people interact with the system. If you're well-educated, you're also well-spoken. You know how to communicate with health professionals and ensure that your needs are met." In areas such as the Capital Region, she added, these citizens are often more assertive, resulting in disproportionate access to advanced diagnostics or specialist care.

This dynamic leads to a skewed allocation of services, where those already advantaged are more likely to receive frequent or high-level interventions – even when they are not clinically necessary. Politician F captured this pressure from patients: "People would prefer one treatment too many rather than too few." This mindset, which is particularly prevalent among the vocal, privileged groups, fosters a healthcare culture that favors intervention over restraint.

3.2 Defensive Medicine and Legal Pressures

The fear of legal consequences also plays a critical role in this dynamic. When vocal citizens demand care, healthcare professionals often feel compelled to comply – not out of clinical judgment, but to avoid complaints or litigation. As Politician F explained, "many doctors say they're afraid of complaints. It's getting worse, and they worry that if they don't do one more scan or take one more test, they'll get a complaint." This environment contributes to defensive medical practices, where overtreatment becomes a means of legal self-protection rather than patient benefit.

Such practices not only strain healthcare resources, but also undermine the principle of evidence-based medicine. When doctors are pressured to act against their clinical instincts, the result is a system that prioritizes patient satisfaction and legal safety over quality and necessity.

3.3 Political Challenges in Maintaining Equity

Politicians expressed frustration with the challenges of balancing these unequal demands. As Politician B noted, "it's difficult… certain groups with resources and organization can make their voices heard much louder, which puts pressure on us." This creates a policy environment where decisions are influenced more by who can advocate effectively than by who is most in need.

Politician E shared similar concerns, emphasizing that "we've seen cases where certain communities receive more attention and resources because they know how to make noise, while other, perhaps more vulnerable groups, don't get the same level of care." This systemic inequity reflects the inverse care law, where those with the greatest needs often receive the least attention, while the most organized groups receive more than their fair share.

3.4 Equity Through Differentiation

In grappling with this imbalance, Politician B argued for a differentiated approach: "If you want equity in healthcare, you must differentiate healthcare." This statement suggests that equal treatment is not necessarily equitable, and that targeted policies may be required to ensure that vulnerable populations receive adequate care, even if they are less able to articulate or advocate for their needs.

However, in practice, this vision is difficult to realize. Policymakers are often caught between competing pressures to satisfy public demands and uphold principles of fairness and need-based allocation. As Politician G summarized, "healthcare resources are often allocated not based on medical necessity, but on who can make the most noise."

Discussion

The findings from this study highlight how overtreatment in the Danish healthcare system is not merely a clinical or organizational issue, but a deeply embedded sociocultural phenomenon. Through the lens of healthism – as defined by Crawford (1980) – the moralization of health, and the individualization of responsibility, we gain insight into the underlying drivers of patient behavior, healthcare policy, and systemic responses that sustain overtreatment. Health is increasingly perceived as a symbol of self-discipline and success, encouraging individuals to pursue extensive preventive measures and self-monitoring.

Healthism and the Moral Imperative to Seek Care

The growing societal influence of healthism – the belief that individuals are morally responsible for achieving and maintaining optimal health – helps to explain these elevated expectations. Health is increasingly perceived as a symbol of self-discipline and success, encouraging individuals to pursue extensive preventive measures and self-monitoring.

One of the most pervasive themes emerging from the interviews was the role of patient expectations in driving unnecessary medical interventions. Healthism encourages individuals to view health as a personal achievement and moral obligation, prompting them to seek out screenings, tests, and treatments – even in the absence of a clear medical need. As noted in the literature (Kristensen et al., 2016), this ideology positions health as a "super-value," intertwining it with identity, citizenship, and self-worth.

This cultural logic was clearly reflected in the politicians' observations. Patients were described as appearing at consultations already convinced of their diagnosis and the necessity of specific treatments, often citing information found online. This aligns with

the self-monitoring and self-diagnosing behaviors typical of a health-obsessed society shaped by market-oriented healthcare services. In such a context, "more healthcare" becomes equated with "better care," reinforcing both public and professional tendencies toward overtreatment.

Systemic and Political Amplifiers of Healthism

While healthism operates at the cultural level, its effects are compounded by institutional and political structures. The regional politicians repeatedly described a healthcare system constrained by national standards, bureaucratic inertia, and risk-averse practices. The political reluctance to reduce services – even when clinically unjustified – is shaped in part by the public's deeply internalized expectations around healthcare entitlement. As Politician F put it, "it's easier to add something than to take it away," reflecting the political cost of challenging the healthcare-as-a-right narrative central to healthism.

This reluctance is further intensified by legal pressures. The fear of complaints or litigation fuels a culture of defensive medicine, where clinicians prioritize precaution over necessity. Under the moral framework of healthism, failure to act can appear negligent – to legal and administrative systems as well as patients. Consequently, healthcare professionals often choose to over-intervene rather than risk professional sanction.

Unequal Access and the Inverse Care Law

Healthism's emphasis on personal responsibility also exacerbates health inequalities, as it implicitly favors individuals with the education, resources, and time to navigate and advocate within the healthcare system. This was a recurring concern among the interviewees, who noted that vocal, privileged citizens exert disproportionate influence on healthcare policy and practice. These individuals are better positioned to demand care, sometimes unnecessarily – thereby distorting the equitable distribution of healthcare resources.

This dynamic reflects Tudor Hart's inverse care law (1971), where those most in need of care often receive less and those with the least need consume more services. In the Danish healthcare context, this plays out in two ways: firstly, affluent individuals use their social capital to access more care, and secondly, healthcare services are increasingly tailored to meet the demands of these groups rather than broader public health priorities. The cultural and systemic normalization of overtreatment thus risks deepening existing disparities, undermining the equity goals of a publicly funded healthcare system.

The Paradox of Empowerment

Although patient empowerment and health literacy are often celebrated, the findings suggest a paradox: empowered patients may inadvertently drive overtreatment by insisting on interventions that align with their understanding of "good care," but not necessarily with clinical guidelines. This form of empowerment, shaped by healthism and fueled by digital health culture, challenges the authority of clinicians and complicates efforts to rationalize care. As some politicians noted, citizens often reject the label of "overtreatment," yet consistently push for more services when their own health is at stake.

Toward a More Reflective Health Culture

Addressing overtreatment therefore requires more than policy reform or clinical restraint. It demands a cultural shift: a rethinking of what constitutes responsible health behavior and appropriate care. This includes fostering public awareness of the risks of unnecessary interventions and encouraging trust in professional discretion, as well as providing political and institutional support for healthcare professionals to say no to interventions that lack medical justification.

At the systemic level, promoting cross-disciplinary coordination and revisiting national care standards – such as the rigid focus on specific diseases – may help reduce fragmentation and encourage more nuanced, person-centered care. However, such changes must be accompanied by broader conversations about the limits of medicine, the meaning of health, and the collective responsibility for sustainable healthcare.

Practical Implications

This study highlights several practical implications for healthcare policy and decision-making. Policymakers should account for patient expectations and sociocultural pressures when designing interventions to reduce overtreatment. Healthcare professionals need institutional support to prioritize medically justified care over unnecessary interventions. Public awareness initiatives may help recalibrate patient expectations and promote trust in clinical discretion. Ensuring equitable access to care can prevent citizens with more resources from disproportionately influencing healthcare provision.

At the policy level, strategies to address overtreatment should move beyond purely economic or clinical rationales and acknowledge the social drivers of medical demand. Policy frameworks that recognize these moral and cultural dimensions can better support realistic expectations for what medicine can and cannot provide.

Healthcare leaders and policymakers must collaborate to create a system that prioritizes sustainable, patient-centered care. This involves reducing unnecessary interventions while building trust in the system through transparency and equity. By addressing the systemic, cultural, and political drivers of overtreatment, Region Zealand has the opportunity to set an example of how healthcare can be delivered in a way that truly benefits all citizens, ensuring that resources are used where they are needed most.

Comparison with Related Studies

The findings of this study resonate with and extend a growing body of international research examining the cultural, political, and systemic factors that contribute to overtreatment within high-income healthcare systems. Several studies highlight the central role of healthism in shaping both patient behavior and healthcare policy. Crawford's (1980) foundational concept of healthism remains a critical analytical lens for understanding these dynamics. This is further reflected in the work of Kristensen et al. (2016), who demonstrated how Danish family doctors face increasing pressure from patients, who often moralize symptoms and demand tests based on digital self-diagnoses. Similarly, Armstrong (2020) explores how clinical autonomy is increasingly constrained, not only by managerial oversight but also by sociopolitical narratives that insist on action and responsiveness. These narratives reinforce a "more is better" ethos, which continues to shape healthcare practices. This study makes a unique contribution by exploring the political dimensions of overtreatment in a Danish context, illustrating how elected officials are caught in a "double bind" between national mandates and local voter expectations. This finding complements the work of Cupit and Armstrong (2021), who describe similar challenges faced by UK health policymakers. They highlight the difficulty in implementing restrictive policies due to political sensitivities and the public's perception of fairness. Our results suggest that these challenges are not unique to the UK, but rather reflect broader tensions within welfare-state health systems, which struggle to balance equity, efficiency, and public satisfaction.

In line with recent work on health inequalities and welfare state regimes, this study also resonates with the theoretical insights provided by Bambra (2011), who describes how different welfare state models produce different patterns of health inequality. Although Nordic welfare states aim to promote universalism and equity, Bambra argues that they can still reproduce inequalities when healthcare access and outcomes are mediated by social gradients such as education, income, and cultural capital. Our findings support this, showing that individuals with higher socioeconomic status are more likely to access – and demand – unnecessary healthcare interventions, contributing to a skewed allocation of healthcare resources.

From a systemic perspective, the influence of defensive medicine noted by our study participants echoes concerns raised by Hofmann (2022), who warns about "overdiagnosis creep," a phenomenon driven by earlier detection and broader diagnostic criteria. This study confirms that risk-averse clinical behavior is amplified by legal pressures and administrative expectations; this makes it an important addition to the literature, which often underemphasizes the role of the legal/cultural context in shaping healthcare practices.

Finally, this study engages with the literature on healthcare inequalities, particularly the inverse care law outlined by Tudor Hart (1971). Our findings echo those from other Nordic and UK-based studies, which show that individuals with higher socioeconomic status often gain greater access to healthcare, including unnecessary interventions. This suggests a misallocation of resources that risks undermining health equity.

Conclusion

Overtreatment in healthcare is a nuanced, complex challenge that extends beyond clinical practices into the realms of societal expectations, political decision-making, and healthcare resource management. This study highlights how high patient expectations, political constraints, and the influence of vocal, privileged citizens contribute to the persistence of overtreatment in Region Zealand.

Therefore, reducing overtreatment requires more than technical reforms. It calls for a cultural and institutional reorientation. Politicians and healthcare leaders must confront the social and moral narratives that sustain excessive medicalization, while strengthening conditions that allow clinicians to rely on their professional judgment without fear of reprisal for their actions. Addressing inequities in voice and access, fostering trust in medical discretion, and encouraging a broader understanding of what constitutes "good care" are essential to achieving a more balanced and sustainable healthcare system.

By situating overtreatment within its political, cultural, and ethical contexts, this study highlights the fact that meaningful change will depend on aligning public expectations, professional practice, and political accountability around a shared commitment to necessity, equity, and care.

References

Armstrong, N. (2020). The Political Anatomy of Clinical Decision Making: The Influence of Health Policy on Clinical Autonomy. *Social Science & Medicine*, *256*, 113038. https://doi.org/10.1016/j.socscimed.2020.113038

Attena, F. (2019). Too Much Medicine? Scientific and Ethical Issues From a Comparison Between Two Conflicting Paradigms. *BMC Public Health*, *19*(1), 97. https://doi.org/10.1186/s12889-019-6442-9

Bambra, C. (2011, September). Health Inequalities and Welfare State Regimes: Theoretical Insights on a Public Health "Puzzle". *J Epidemiol Community Health*, *65*(9), 740–45. DOI: 10.1136/jech.2011.136333.

Berwick, D. M. (2017). Avoiding Overuse: The Next Quality Frontier. *The Lancet*, *390*(10090), 102–104. https://doi.org/10.1016/S0140-6736(16)32570-3

Braithwaite, J., Glasziou, P., & Westbrook, J. (2020). The Three Numbers You Need to Know About Healthcare: The 60-30-10 Challenge. *BMC Medicine*, *18*(1), 102. https://doi.org/10.1186/s12916-020-01563-4

Crawford, R. (1980). Healthism and the Medicalization of Everyday Life. *International Journal of Health Services*, *10*(3), 365–388. https://doi.org/10.2190/3H2H-3XJN-3KAY-G9NY

Cupit, C. & Armstrong, N. (2021, November 22). A Win-Win Scenario? Restrictive Policies From Alternative Standpoints. *J Health Organ Manag.*, *35*(9), 378–384. DOI: 10.1108/JHOM-06-2021-0239

Fredriksson, M., Blomqvist, P., & Winblad, U. (2013). The Trade-Off Between Choice and Equity: Swedish Policymakers' Arguments When Introducing Patient Choice. *Journal of European Social Policy*, *23*(2), 192–209. https://doi.org/10.1177/0958928712463158

Greenhalgh, T., Hinder, S., Stramer, K., Bratan, T., & Russell, J. (2011). Adoption, Non-Adoption, and Abandonment of a Personal Electronic Health Record: Case Study of HealthSpace. *BMJ, 341*, c5814. https://doi.org/10.1136/bmj.c5814

Greve, B. (2022). Kort rids over den danske forvaltning. *Velfærdssamfundet: En grundbog* (6th ed., pp. 47–71). Hans Reitzels Forlag.

Gupta, P., Gupta, M., & Koul, N. (2020). Overdiagnosis and Overtreatment: How to Deal With Too Much Medicine. *Journal of Family Medicine and Primary Care*, *9*(8), 3815–3819. https://doi.org/10.4103/jfmpc.jfmpc_433_20

Hart, J. T. (1971). The Inverse Care Law. *The Lancet*, *297*(7696), 405–412. https://doi.org/10.1016/S0140--6736(71)92410-X

Hofmann, B. (2022, August 6). Too Much, Too Mild, Too Early: Diagnosing the Excessive Expansion of Diagnoses. *Int J Gen Med.*, 15, 6441–50. DOI: 10.2147/IJGM.S368541. PMID: 35966506

Kristensen, D. B., Lim, M., & Askegaard, S. (2016). Healthism in Denmark: State, Market, and the Search for a "Moral Compass". *Health*, *20*(5), 485–504. https://doi.org/10.1177/1363459316638541

Moynihan, R., Glasziou, P., Woloshin, S., Schwartz, L., Santa, J., & Godlee, F. (2013, February 26). Winding Back the Harms of Too Much Medicine. *BMJ*, 346, f1271. DOI: 10.1136/bmj.f1271

O'Sullivan, J. W. (2022). The Harms of Too Much Medicine: Evidence, Perceptions, and Strategies to Reduce Overtreatment. *BMJ*, *379*, e071159. https://doi.org/10.1136/bmj-2022-071159

Sørensen, E. & Christensen, C. (2011). Regionspolitikere i en pluricentrisk kontekst. In E. Sørensen & J. Torfing (Eds.), *Offentlig styring som pluricentrisk koordination* (1st ed., pp. 235–265). Jurist- og Økonomforbundets Forlag.

EJoHP 2(5)/2025

DOI: https://doi.org/10.21697/ejhp.0707.05
e-ISSN 2957-2002

2025, 5, 2: 49-58

Geographic Variation in Screening Mammography Coverage Across Poland: A Nationwide Dataset Analysis

Mateusz Jankowski

Department of Population Health, School of Public Health, Centre for Medical Postgraduate Education, Warsaw, Poland
ORCID: 0000-0002-7142-5167
ul. Kleczewska 61/63, 01-826 Warszawa, Polska
Email: mateusz.jankowski@cmkp.edu.pl
Phone: +48 22-5601-150

Received: 12 Nov 2025; Revised: 17 Nov 2025; Accepted: 25 Nov 2025

Abstract

Breast cancer is the most commonly diagnosed cancer among women worldwide. Early detection enables timely therapy and improves prognosis. Therefore, this study assesses the coverage of screening mammography in counties and communes in Poland based on data published by the National Health Fund. This study is a retrospective analysis of a dataset on a publicly funded breast cancer prevention program, published on October 1, 2025 by the National Health Fund. Data are presented for all counties and communes in Poland. Regional differences in screening mammography coverage were found, with the lowest coverage being in southeastern Poland and the highest in central-western Poland. In one commune (Bolesław commune in Dąbrowski County), the coverage was below 10%. Overall, 6 of the bottom 20 communes with the lowest rates were in Gorlicki County. The highest screening mammography coverage rate (65.59%) was in Latowicz commune in Miński County. Only in 4 communes in Poland did the coverage exceed 60% of the eligible population. Overall, 4 of the top 20 communes with the highest coverage were in Siedlecki County (Table 1). Out of the 20 communes with the highest screening mammography coverage rates, 7 were located in Mazowieckie Voivodeship. This study found that screening mammography coverage under the publicly funded cancer screening program in Poland was significantly below the population targets. Moreover, regional differences in coverage were observed.

Keywords: breast cancer; mammography; prevention; early detection; screening

Introduction

Breast cancer is the most commonly diagnosed cancer among women worldwide (Heer et al., 2020; Kim et al., 2025). It is also a leading cause of cancer-related death (Kim et al., 2025). Early detection – particularly at more treatable stages – enables timely therapy and improves prognosis (Ginsburg et al., 2020). In response to the global burden, many countries have organized mammography screening to reduce mortality (Ren et al., 2022). Effective, population-based screening programs ensure regular screening intervals, minimize administrative barriers, and extend geographic reach (Ren et al., 2022). To achieve a meaningful reduction in mortality, population coverage is generally expected to exceed 70%–80% of the target group (Ren et al., 2022; Katsika et al., 2024).

In Poland, the publicly funded breast cancer screening program offers a free mammography every two years to women aged 45–74 years (with specific provisions for those with a prior diagnosis of breast cancer) (Koczkodaj & Michalek, 2024; Sierocki et al., 2025; National Health Fund, 2025). Examinations are available in outpatient clinics and via mobile mammography units that reach areas with limited access to healthcare (Koczkodaj & Michalek, 2024; Sierocki et al., 2025). No referral is required. Participants with abnormal results are referred to specialists for further diagnostic assessment and treatment within the national healthcare system (Koczkodaj & Michalek, 2024; Sierocki et al., 2025). The program has undergone several modifications: for example, a key change in November 2023 expanded the eligible age range from 50–69 to 45–74 years (National Health Fund, 2025).

Despite the broad availability, screening coverage remains below target (Koczkodaj & Michalek, 2024; Sierocki et al., 2025). As of October 2025, the National Health Fund estimated that approximately 33.5% of eligible women had participated in the publicly funded program (National Health Fund, 2025); uptake varies geographically. Reported barriers include limited awareness, low health literacy, organizational and transportation constraints, and sociocultural factors (Ozcelik & Avci, 2025; Fazeli et al., 2025). Systematic, local monitoring of screening coverage can inform policy and healthcare professionals on local needs, guiding deployment of mobile units and supporting targeted educational campaigns, organizational improvements, and resource allocation (Katsika et al., 2024).

Therefore, the aim of this study was to assess the screening mammography coverage in counties (*powiaty*) and communes (*gminy*) in Poland using data published by the National Health Fund.

Material and Methods

This study is a retrospective analysis of a dataset published on October 1, 2025 by the National Health Fund (NHF). The NHF publishes data on the implementation of publicly funded cancer prevention programs (breast, cervical, and colorectal). We derived the data from the dataset published on the NHF's official website (National Health Fund, 2025).

For each county and commune, the dataset included the number of women aged 45–74 years residing there, the number of women excluded from screening due to prior breast cancer treatment, and the number of women temporarily ineligible for mammography in a given month because less than 24 months had elapsed since their last examination. We used the number of eligible women as of October 1, 2025 (by county/commune) and the number of women who had undergone screening in the prior 24 months to calculate screening coverage, defined as the percentage of eligible women who received screening.

The data were summarized for all counties and communes in Poland and those with the lowest and highest screening coverage were identified.

The analysis was performed in Microsoft Excel (Microsoft Corporation, Redmond, WA, USA). As this was a retrospective analysis of a publicly available dataset, informed consent was waived. All procedures complied with the Declaration of Helsinki.

The figures were prepared by the author, based on the data published by the National Health Fund (2025).

Results

Screening mammography coverage (as of October 1, 2025) is presented by county in Figure 1 and by commune in Figure 2. The screening mammography coverage varied from 6.34% to 65.59% (Figure 2). There were regional differences in screening mammography coverage, with the lowest coverage being in southeastern Poland (especially in Małopolskie [Lesser Poland] Voivodeship) (Figures 1 and 2). The highest rates of coverage were observed in central-western Poland.

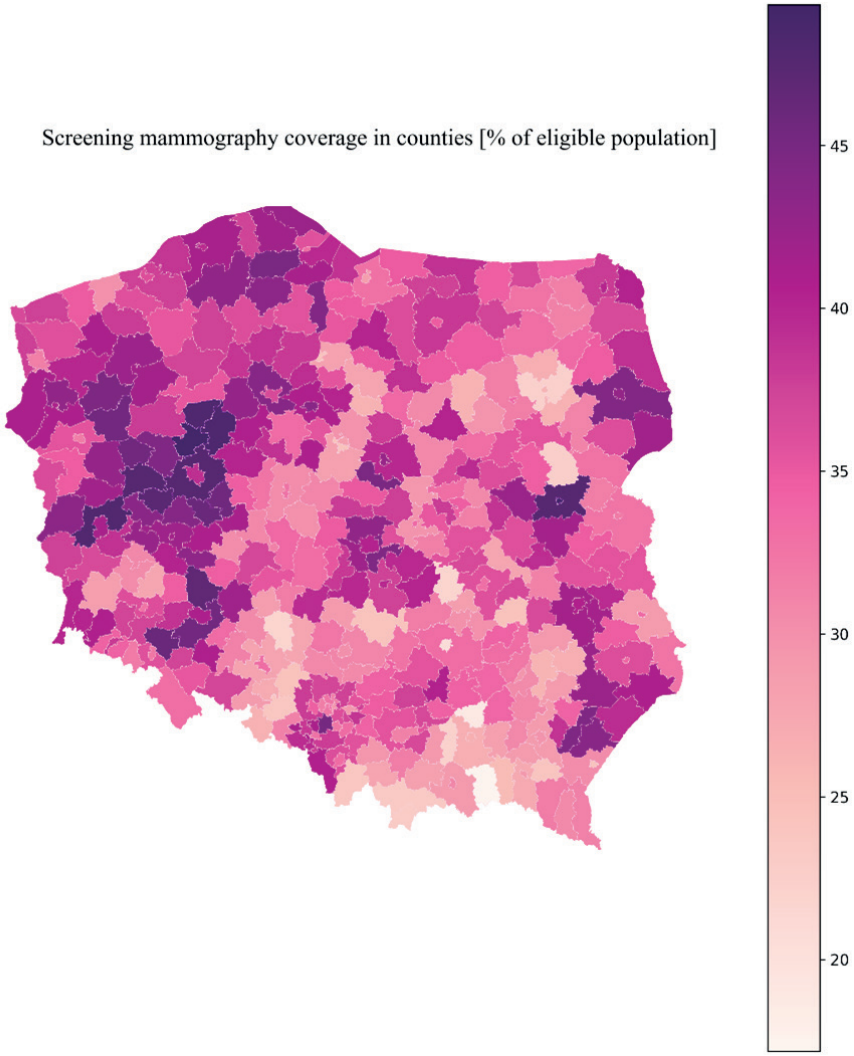

Figure 1. Screening mammography coverage in Poland, by county, October 2025

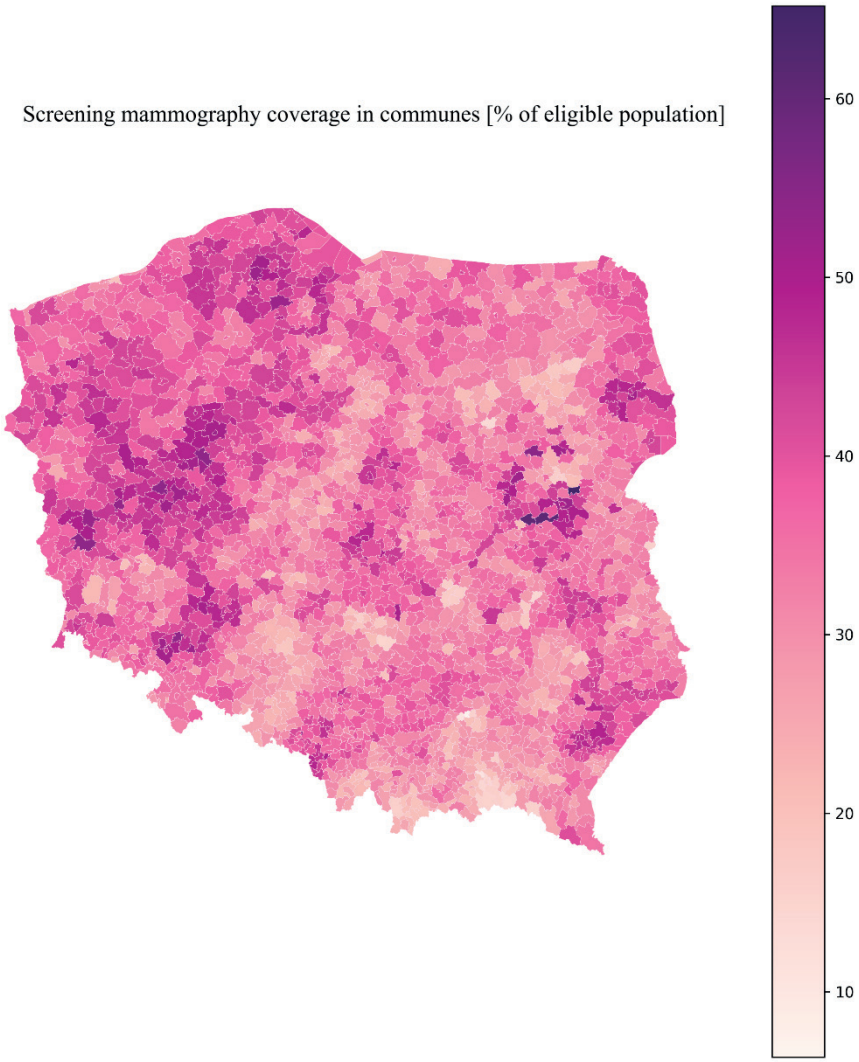

Figure 2. Screening mammography coverage in Poland, by commune, October 2025

In one commune (Bolesław commune in Dąbrowski County), the screening mammography coverage was below 10% (Table 1). Overall, 6 of the bottom 20 communes with the lowest rates were in Gorlicki County (Table 1). Another 4 communes in this group were in Dąbrowski County (Table 1).

Table 1. Bottom 20 communes with the lowest screening mammography coverage rates in Poland, October 2025

Voivodeship	County	Commune	Screening mammography coverage [%]
Małopolskie	Dąbrowski	Bolesław	6.34
Małopolskie	Dąbrowski	Gręboszów	10.5
Małopolskie	Gorlicki	Moszczenica	10.53
Mazowieckie	Makowski	Czerwonka	13.45
Lubelskie	Puławski	Janowiec	14.11
Małopolskie	Gorlicki	Gorlice	14.16
Podkarpackie	Jasielski	Krempna	14.24
Małopolskie	Nowotarski	Czarny Dunajec	14.82
Wielkopolskie	Ostrzeszowski	Mikstat	14.88
Łódzkie	Radomszczański	Żytno	14.98
Małopolskie	Dąbrowski	Mędrzechów	15.09
Podkarpackie	Krośnieński	Jaśliska	15.35
Małopolskie	Gorlicki	Uście gorlickie	15.45
Lubelskie	Bialski	Sławatycze	15.62
Małopolskie	Gorlicki	Lipinki	15.85
Mazowieckie	Przysuski	Przysucha	15.89
Łódzkie	Radomszczański	Lgota Wielka	15.91
Małopolskie	Gorlicki	Sękowa	15.96
Małopolskie	Gorlicki	Gorlice	16.04
Podkarpackie	Dębicki	Jodłowa	16.12

The highest screening mammography coverage rate (65.59%) was in Latowicz commune in Miński County (Table 2). In only 4 communes in Poland did the coverage rate exceed 60% of the eligible population (as of October 1, 2025) (Table 2). Overall, 4 of the top 20 communes with the highest rates were in Siedlecki County (Table 1). Out of the 20 communes with the highest screening mammography coverage rates, 7 were located in Mazowieckie Voivodeship (Table 2).

Table 2. Top 20 communes with the highest screening mammography coverage rates in Poland, October 2025

Voivodeship	County	Commune	Screening mammography coverage [%]
Mazowieckie	Miński	Latowicz	65.59
Mazowieckie	Siedlecki	Paprotnia	65.19
Mazowieckie	Siedlecki	Domanice	60.75
Mazowieckie	Siedlecki	Wodynie	60.73
Mazowieckie	Miński	Latowicz	58.68
Lubuskie	Zielonogórski	Czerwieńsk	57.3
Wielkopolskie	Poznański	Murowana Goślina	55.91
Lubuskie	Zielonogórski	Babimost	55.42
Wielkopolskie	Poznański	Stęszew	55.39
Lubuskie	Zielonogórski	Nowogród Bobrzański	55.21
Mazowieckie	Węgrowski	Sadowne	54.24
Wielkopolskie	Nowotomyski	Opalenica	53.99
Dolnośląskie	Wrocławski	Mietków	53.85
Śląskie	Rybnicki	Jejkowice	52.5
Dolnośląskie	Świdnicki	Jaworzyna Śląska	52.44
Wielkopolskie	Wągrowiecki	Wągrowiec	52.42
Pomorskie	Kartuski	Sulęczyno	52.05
Podlaskie	Białostocki	Supraśl	52.03
Mazowieckie	Siedlecki	Siedlce	51.94
Kujawsko-pomorskie	Świecki	Pruszcz	51.92

Discussion

This study provides population-based data on screening mammography coverage in Poland. Coverage of the publicly funded program remains well below population targets; only 4 communes exceeded 60% coverage among eligible women. Marked geographic heterogeneity was observed, with the lowest coverage being in southeastern Poland and the highest in central-western regions.

In Poland, debate continues regarding the effectiveness of cancer screening programs (Koczkodaj & Michalek, 2024; Sierocki et al., 2025). Breast cancer prevention and early detection remain priorities for policymakers and clinicians, given the high incidence among women (Sierocki et al., 2025). Over the past decade, population coverage in the publicly funded screening program has declined by 10 percentage points (National Health

Fund, 2025). In response to persistently low uptake, public health authorities are exploring new communication strategies for eligible women (Koczkodaj & Michalek, 2024). Paper letters, once used to invite participants, have been discontinued. To reduce transportation barriers, mobile mammography units operate nationwide, particularly in areas with limited access to outpatient clinics (Seweryn et al., 2022; Koczkodaj & Michalek, 2024). In parallel, non-governmental organizations, especially patient groups, are active in breast cancer education and promotion of early detection (Ciuba, 2025). Discussions are also underway regarding the use of smartphone apps and e-health services to build awareness and streamline participation.

Findings from this study underscored significant regional differences in screening mammography coverage in Poland. This observation indicates significant inequalities in breast cancer screening in Poland. Southeastern Poland was identified as having the lowest screening mammography coverage. Further actions are needed to identify potential barriers to access to screening mammography in these regions. Particular attention should be paid to barriers related to health literacy and personal beliefs, as well as sociocultural factors (Ozcelik & Avci, 2025; Fazeli et al., 2025). Moreover, potential organizational and transportation barriers to breast cancer screening should be analyzed.

Non-governmental organizations play important roles in raising public awareness on breast cancer prevention and screening. Those led by women with a history of breast cancer are particularly involved in educational campaigns on breast cancer screening, including mammography and self-examinations. Non-governmental organizations should be actively involved in the national strategy on breast cancer prevention.

Communes and counties with the highest screening mammography coverage rates should be treated as benchmarks and carefully analyzed to identify factors associated with high rates of coverage. Lessons learned from this region may inform policymakers how to increase screening mammography in Poland, especially in regions with lower coverage rates. Moreover, this study highlights the need for updated communication strategies regarding breast cancer screening. Personalized communication, targeted to different socioeconomic groups, should be used.

This study has several limitations. Firstly, it is a retrospective analysis of data published by the National Health Fund; it is therefore constrained by the variables available in that dataset (National Health Fund, 2025). Secondly, we only report coverage from publicly funded screening mammography; examinations financed through private insurance or by the patients were not captured. Thirdly, the analysis is limited to mammography and does not include data on breast self-examination or breast ultrasound.

Conclusions

This study found that the coverage of the publicly funded breast cancer screening program in Poland was significantly below the population targets. It revealed regional differences in screening mammography coverage in Poland, with the highest coverage being in central-western Poland and the lowest in southeastern Poland. This study also found that excess body weight is an emerging public health problem in Poland. Disparities in screening mammography coverage in counties and communes across the country should be addressed through public health policies. Barriers to accessing breast cancer screening should be removed, as they can contribute to health inequalities in Poland.

References

Ciuba, A. (2024). Breast Cancer in Poland – The Urgent Need for Effective Prevention. *Family Medicine & Primary Care Review*, *26*(1), 107–111. https://doi.org/10.5114/fmpcr.2024.134711

Fazeli, S., Narayan, A.K., Mango, V.L., Wahab, R., Mehta, T.S., & Ojeda-Fournier, H. (2025). Access to Breast Cancer Screening: Disparities and Determinants—AJR Expert Panel Narrative Review. *AJR American Journal of Roentgenology*, *225*(2), e2432151. https://doi.org/10.2214/AJR.24.32151

Ginsburg, O., Yip, C.H., Brooks, A., Cabanes, A., Caleffi, M., Dunstan Yataco, J.A., Gyawali, B., McCormack, V., McLaughlin de Anderson, M., Mehrotra, R., Mohar, A., Murillo, R., Pace, L.E., Paskett, E.D., Romanoff, A., Rositch, A.F., Scheel, J.R., Schneidman, M., Unger-Saldaña, K., Vanderpuye, V., Wu, T.Y., Yuma, S., Dvaladze, A., Duggan, C., & Anderson, B.O. (2020). Breast Cancer Early Detection: A Phased Approach to Implementation. *Cancer*, *126*(Suppl 10), 2379–2393. https://doi.org/10.1002/cncr.32887

Heer, E., Harper, A., Escandor, N., Sung, H., McCormack, V., & Fidler-Benaoudia, M.M. (2020). Global Burden and Trends in Premenopausal and Postmenopausal Breast Cancer: A Population-Based Study. *The Lancet Global Health*, *8*(8), e1027–e1037. https://doi.org/10.1016/S2214-109X(20)30215-1

Katsika, L., Boureka, E., Kalogiannidis, I., Tsakiridis, I., Tirodimos, I., Lallas, K., Tsimtsiou, Z., & Dagklis, T. (2024). Screening for Breast Cancer: A Comparative Review of Guidelines. *Life*, *14*(6), 777. https://doi.org/10.3390/life14060777

Kim, J., Harper, A., McCormack, V., Sung, H., Houssami, N., Morgan, E., Mutebi, M., Garvey, G., Soerjomataram, I., & Fidler-Benaoudia, M.M. (2025). Global Patterns and Trends in Breast Cancer Incidence and Mortality Across 185 Countries. *Nature Medicine*, *31*(4), 1154–1162. https://doi.org/10.1038/s41591-025-03502-3

Koczkodaj, P. & Michalek, I.M. (2024). Cancer Screenings in Poland: A Call to the New Government and Health Minister for Informed Leadership. *European Journal of Cancer*, 198, 113526.

National Health Fund [Narodowy Fundusz Zdrowia]. (2025). *Data on the Implementation of Preventive Programs (Mammography, Cytology, Colonoscopy)*. Retrieved November 2, 2025 from https://www.nfz.gov.pl/dla-pacjenta/programy-profilaktyczne/dane-o-realizacji-programow/

Ozcelik, H. & Avci, H.H. (2025). Evaluation of Barriers Preventing Regular Mammography Screening. *Oncology Nursing Forum*, *52*(3), E65–E76. https://doi.org/10.1188/25.ONF.E65-E76

Ren, W., Chen, M., Qiao, Y., & Zhao, F. (2022). Global Guidelines for Breast Cancer Screening: A Systematic Review. *The Breast*, 64, 85–99. https://doi.org/10.1016/j.breast.2022.04.003

Seweryn, M., Banas, T., Augustynska, J., Lorenc, O., Kopel, J., Pluta, E., & Skora, T. (2022). The Direct and Indirect Costs of Breast Cancer in Poland: Estimates for 2017–2019. *International Journal of Environmental Research and Public Health*, *19*(24), 16384. https://doi.org/10.3390/ijerph192416384

Sierocki, W., Kornowska, L., Dudek, A., Szpakowicz, M., Dompe, C., & Roszak, M. (2025). The Burden of Breast Cancer in Poland: Current Status and Future Directions. *Frontiers in Oncology*, 15, 1599741. https://doi.org/10.3389/fonc.2025.1599741