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Private bariatric surgery in Poland: insights into procedures, distribution, and standards of care

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Abstract: Introduction: Bariatric surgery is critical for management of pathological obesity. In Poland, there is a paucity of data regarding bariatric care in the private sector.
Aim: This study evaluates the characteristics of private bariatric centres in terms of performed procedure types, regional distribution, and the level of care in comparison to public facilities.
Materials and Methods: An online survey was distributed to bariatric centres in Poland. Collected data included numbers and types of bariatric procedures performed in 2023 and centre characteristics. Responses were analysed using chi-square and Kruskal–Wallis tests, with significance set at $p < 0.05$.
Results: 7 of 54 surveyed centres were private and performed 872 bariatric surgeries (9.1% of the total procedures in Poland). The most common type of surgery was laparoscopic sleeve gastrectomy (LSG) in both sectors (70.1% in private, 83.1% in public). Endoscopic sleeve gastroplasty (ESG) was exclusive to private centres. Significant regional disparities were noted. The level of care was comparable with public hospitals. Private centres offered significantly shorter wait times (median 1.5 months vs. 4 months in public).
Discussion: Private centers demonstrated comparable care standards to public facilities, with certified surgeons, multidisciplinary teams, and postoperative support. Factors such as cost and regional disparities can limit the access to private healthcare.
Conclusions: One in ten bariatric procedures in Poland are performed in private centers. These centers offer similar procedure types and quality standards as public hospitals while providing shorter wait times and procedures unavailable in the nationalized healthcare system, such as ESG.

Keywords: bariatric surgery, obesity, private healthcare, healthcare accessibility, Poland.

Introduction

Obesity has become one of the most serious medical challenges of the 21st century, affecting an increasing number of people around the world [1]. In Poland, it is estimated to affect up to 9 million adults [2]. Obesity not only reduces quality of life but also leads to a number of serious health complications, including type 2 diabetes, hypertension, and heart disease [3, 4]. Given the inadequate effectiveness of conservative treatment, more and more patients are being referred for bariatric surgery [5], which is regarded as one of the most effective interventions for achieving sustained weight loss and improving obesity-related health outcomes [4, 6].

The access to publicly funded bariatric care varies globally, depending on the structure of national healthcare systems and economic factors, in countries with strong nationalized healthcare systems, such as the UK [7] or Israel [8], public funding is more prominent, while nations like Brazil [9] or Australia [10] there is a higher prevalence of self-funded healthcare. Since 2021, Poland has had a pilot comprehensive specialist care in bariatrics program (KOS-BAR), a multidisciplinary approach for treatment for patients with obesity, which, in addition to bariatric surgery, provides broad preoperative and postoperative care. This program is an important factor leading to a significant increase in the number of bariatric surgeries in Poland [11]. Aside from publicly affiliated centres, there is also a number of privately operating hospitals providing bariatric health services. Previous reports regarding the state of bariatrics in Poland [11–13] did not consider the contributions of these facilities.

Aim

The aim of this study is to evaluate the characteristics of private bariatric care in Poland, its scope and the regional distribution of commercial centres, the procedures types and volumes, and care standards in comparison to public healthcare.

Materials and Methods

An online survey was conducted between January and February 2024 to collect data from bariatric centres in Poland. The questionnaire gathered information about the number and types of bariatric procedures performed in 2023, centre characteristics (commercial vs. public), and their KOS-BAR status. The survey was distributed to all members of the Bariatric Society affiliated with the Association of Polish Surgeons. Centres were categorized as commercial if they operated as private enterprises without public funding, while public centres were defined as those operating within the national healthcare system. Follow-up reminders were sent via email and through personal contacts to maximize response rate. Inclusion in the survey was required for centres to be listed in the society's official directory of bariatric treatment providers.

The procedure types and volumes between commercial and public centres were compared using descriptive statistics and chi-square tests where appropriate.

Statistical Analysis

Statistical analyses were performed using SAS® OnDemand for Academics version (SAS Institute Inc., Cary, NC, USA). Differences in procedure distributions between commercial and public centres were assessed using chi-square tests, with $p < 0.05$ considered statistically significant.

Ethics

This type of study did not require Institutional Review Board review or approval as per institutional guidelines.

Results

Volume of operations

Fifty-four bariatric centres took part in this study, of which the Polish National Health Fund (NFZ) and 7 were private centres. In total, 9,102 bariatric procedures were performed in 2023 across these centres, among these, 872 (9.1%) were private sector operations.

Regional distribution

The largest number of privately operating bariatric centres in Poland was located in Dolnośląskie Voivodship, with three centres, while one centre operated in each of the Podlaskie, Pomorskie, Łódzkie, and Śląskie Voivodeships. There were significant regional variations in both the volume and types of procedures conducted (as presented in Table 1). Except for the centre in the Łódzkie Voivodeship, which specialized in ESG, the majority of commercial bariatric surgeries performed were SG procedures. The three facilities in the Dolnośląskie Voivodship accounted for almost 60% of all commercial surgeries.

Table 1. Bariatric procedures by region in commercial centres.

Region	Total number of bariatric procedures	LSG		RYGB		OAGB		SASI		SADI-S		ESG	
Dolnośląskie Voivodship	517	387	74.9%	52	10.1%	3	0.6%	1	0.2%	0	0.0%	0	0.0%
Podlaskie Voivodship	24	21	87.5%	0	0.0%	3	12.5%	0	0.0%	0	0.0%	0	0.0%
Pomorskie Voivodship	15	15	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Łódzkie Voivodship	95	20	21.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	75	78.9%
Śląskie Voivodship	221	168	76.0%	4	1.8%	16	7.2%	9	4.1%	0	0.0%	0	0.0%
Total	872	611	70.1%	56	6.4%	22	2.5%	10	1.1%	0	0.0%	75	8.6%

Types of procedures

The breakdown of procedures by type within the private and public sector is presented in Fig. 1.

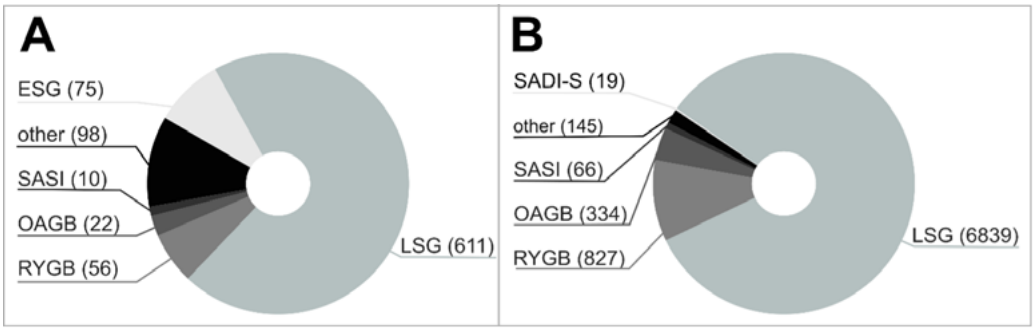

Fig. 1. Bariatric procedures in Poland in 2023 in private (A) and public (B) sectors by type.

In both sectors, laparoscopic sleeve gastrectomy (LSG) was the most frequently performed type of bariatric surgery, in the private sector accounting for 70.1% (611 procedures). The Roux-en-Y gastric bypass (RYGB), one anastomosis gastric bypass (OAGB) and single anastomosis sleeve ileal bypass (SASI) accounted for less than 10% of commercial procedures, performed 56, 22 and 10 times, respectively. None of the private centres reported cases of single anastomosis duodenal ileal switch (SADI-S). Other procedures (gastric banding, minimizers and other revisional procedures) accounted for 145 in public and 98 in private sector. Of note is that 7 public funds-affiliated centres reported performing a total of 53 private operations, however due to the lack of clarity in the record, they could not be classified. There was a significant association between the bariatric procedure type (excluding ESG) and centres' private/public affiliation, χ^2 (4, N = 8784) = 9.73, p = 0.045, with a small effect size, as indicated by Cramer's V at 0.03. 75 endoscopic sleeve gastroplasties (ESGs), which are not currently eligible for national healthcare funding, were performed in private sector.

Characteristics of private bariatric care

There was a significant difference (Kruskal–Wallis p <0.001) in wait times between private centres median 1.5 months (IQR = 1 month, 2 months) and public centres median 4 months (IQR = 4 months, 6 months). With a maximum time of 2.5 months in private and 16 months in public centres (see Fig. 2).

Given the common belief that private sector bariatric treatment can be inferior to nationally subsidized health care programs, such as the KOS-BAR program, whose goal was to provide comprehensive specialist care to patients, questions regarding the amenities and scope of care offered by commercial facilities were asked in the survey. In every surveyed private centre, there was at least one surgeon (four centres) or two surgeons (three centres) with a certificate issued by the Metabolic and Bariatric Surgery Chapter of the Association of Polish Surgeons. The largest number of surgeons performing bariatric procedures in one centre was five (one centre), followed by three surgeons (two centres) and two surgeons (four centres). Four private centres had over 10 years of experience in bariatric surgeries and only one centre reported starting their bariatric treatment programs less than two years earlier. Five centres had the ability to conduct endoscopic examinations. In every surveyed private facility, the patients had access to dietitian, psychologist and were supported by the dedicated bariatric coordinator. The median number of follow up visits

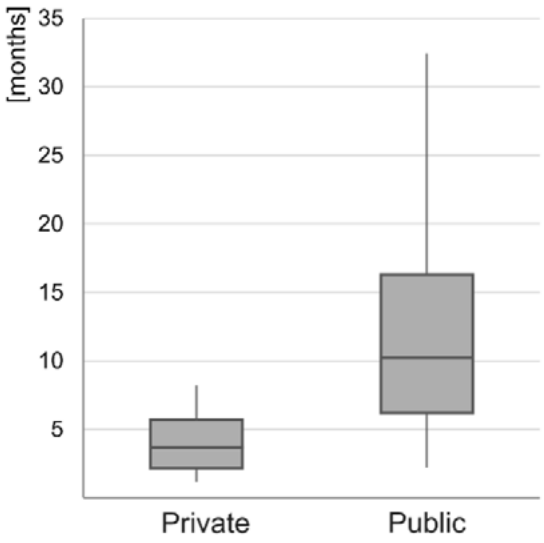

Fig. 2. Box-plots of wait times between qualification and operation in private and public sectors, p <0.001.

in the postoperative period in private centres was 4 (IQR = 4, 5), which did not differ from the median amount of (4, IQR = 3, 5) visits in public sector affiliated centres (Kruskal–Wallis p = 0.28).

Discussion

The findings of this study provide the first insights into the privately funded bariatric surgery landscape in Poland, focusing on types of procedures performed, distribution of bariatric operations between commercial and public healthcare institutions and the quality of care within private centres.

This report highlights regional variations in distributions of privately operating bariatric centres in Poland as well as their volumes. The Dolnośląskie Voivodship is leading with three centres that collectively performed nearly 60% of all privately funded bariatric surgeries with Śląskie Voivodship performing 25.3% of reported bariatric surgeries. This concentration could in part reflect the socioeconomic factors that allow populations of these regions to access privatized healthcare. These two voivodeships place high in regional GDP [14], that could reflect a population more able to afford private healthcare. Of note is that some regions of Poland lack even publicly funded bariatric centres [11]. The diversity in procedure type is also significant. The centre in the Łódzkie Voivodeship's specialization in endoscopic sleeve gastroplasty (ESG) indicated a response to the niche market, reminiscent of the Canadian private clinics offering of adjustable gastric banding, with RYGB being the only publicly insured option [15].

In 2023, the percentage of bariatric surgeries performed in private centres was relatively low compared to the public sector, which means that the vast majority of the procedures were conducted within the public healthcare system. This distribution is rather different from available studies from other countries. Data from the 2020 report of the United Kingdom National Bariatric Surgery Registry [7] showed that, from 2010 to 2019, over 70% of bariatric surgeries were funded by Britain's national healthcare system. In South Korea, from 2020 to 2022 the highest volume of bariatric surgeries was achieved by a private hospital [16], while the overall data from the Korean

Society of Metabolic and Bariatric Surgery show a roughly equal allocation of procedures between private and public hospitals. Similarly, an even distribution was observed in Israel [8]. In New Zealand, between 2004 and 2017, there was a slightly higher volume of bariatric surgeries in private hospitals [17]. Available data from France between 2005 and 2011 shows that bariatric surgery is predominantly performed in private centres [18], a trend echoed in the Australia and New Zealand Bariatric Surgery Registry, where privately funded hospitals performed 85% of weight loss surgeries between 2015 and 2020 [10]. Data from Brazil indicated an even more skew toward the private sector, with 92.1% of procedures being privately funded in 2014 [9]. Differences in the comparative volume of bariatric surgeries in private and public sectors are likely influenced by local healthcare policies. A comparatively high proportion of publicly funded procedures in Poland presumably reflects their greater accessibility and cost-effectiveness, which might be attributed in part to the implementation of the KOS-BAR program [11].

The breakdown of bariatric procedures in Poland shows a predominance of LSG, which constituted the majority of operations in both private (70.1%) and public sectors (83.1%), reflecting the trends observed globally. According to the 2023 8th IFSO registry report [5], sleeve gastrectomy at 60.4% of the cases, is the most prevalent type of surgery among all contributing countries with the exception of South Africa, where RYGB was the most predominant. Poland's use of RYGB is lower than other regions, as discussed by Janik *et al.* [11] and the proportion of RYGB in Poland's private surgeries (6.4%) is even lower than in the public sector (10.0%). There was an absence of SADI-s and lower utilization of OAGB, which suggests that the private sector in Poland may lean towards procedures with broader acceptance. Notable proportion of private procedures was ESG, which is ineligible for reimbursement under the nationalized healthcare system. This type minimally-invasive bariatric intervention has been associated with less severe adverse effects [19] and has less strict eligibility criteria [20], which underscores the private sector's role in providing access to bariatric solutions for patient willing to self-fund. The significant but small association between procedure type and sector affiliation suggest that these modest differences may be influenced partially by factors such as patients' preference, financial considerations, or institutional policies.

The analysis of wait times and the quality of care in private versus public bariatric centres in Poland reveals critical insights into the functioning of these two sectors. The private sector is providing bariatric care at shorter preoperative wait times, observed also in other regions [15]. Given that the longer wait times have not been shown to contribute to greater weight loss or reduced adverse events [21, 22] and have been associated with patient's attrition [23, 24], shortened wait may be a more attractive option for patients who can afford it.

This report also challenges the notion that private care or medical tourism may be inferior to nationally subsidized programs and patients who choose to self-fund may be at risk of inappropriate or less comprehensive care [15, 25]. Private centres in Poland demonstrated robust credentials, all of the participating facilities employed certified bariatric surgeons often with extensive experience. And similarly to the KOS-BAR program, emphasized comprehensive specialist care and presence of multidisciplinary teams, including dietitians, psychologist, and bariatric coordinators, as well as an access to the endoscopy lab, showing that private centres are capable of providing holistic patient care. There was also no detected differences.

Despite perceptions that private care may be inferior to nationally subsidized programs like KOS-BAR, which emphasize comprehensive specialist care, the survey results challenge this notion. Private centres demonstrated robust credentials, with all facilities employing certified bariatric surgeons — many with extensive experience exceeding a decade. The presence of

multidisciplinary teams, including nutritionists, psychologists, and bariatric coordinators, further underscores the commitment to holistic patient care. Additionally, private centres offering endoscopic examinations reflect their readiness to provide advanced diagnostic support. The postoperative follow-up care, which has been associated with better outcomes in terms of weight loss [26], in private and public centres was comparable. All of these suggest that Poland's private centres are committed to providing high quality of care.

Nonetheless, while private centres offer competitive care, the high out-of-pocket payment, makes those procedures available only to wealthier patients. The costs of the procedures range most commonly from around 10,000 PLN for gastric balloons, to between 20,000 to 25,000 PLN for laparoscopic surgeries (LSG, RYGB), and over 30 00 PLN for ESG, which often does not include the cost of necessary diagnostics and far exceeds the average monthly earnings in Poland. Therefore, public centres, supported by programs like KOS-BAR, remain critical for providing equitable care, and there is a need to address the longer preoperative wait times to mitigate disparities.

Limitations

Among the limitations of this study is a reliance on survey data, which introduces some incompleteness regarding the adverse events, outcomes and patients' epidemiological characteristics. Access to such data would certainly enhance the analysis in terms of safety and efficacy of private bariatric centres and the profile of the patients. Future research should explore also the patients attitudes and motivations for choosing self-funded bariatric care. The collection of longitudinal data is essential to better the understanding of Poland's private bariatric care landscape which could be crucial for recognizing the patients' preferences and needs.

Conclusions

Poland's private bariatric care centres perform close to 10% of bariatric procedures in the country. The most common operation in commercial settings is LSG. The types of procedures performed in private centres are similar to publicly funded hospitals with an added possibility of providing patients with ESG treatment, which is still not covered by national healthcare. Private bariatric centres demonstrate comparable care standards to public facilities but have the advantage of significantly shorter wait times.

Authors contributions

Study design and data collection: P.M., M.J.; statistical analysis: M.J.; data interpretation and literature search: M.K., R.M., A.P., manuscript preparation: M.K., R.M., P.M., A.P.

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1. Wojewódzki Szpital Specjalistyczny, Oddział Chirurgii Ogólnej, Legnica
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4. EuroMediCare Szpital Specjalistyczny, Wrocław
5. Wojewódzki Szpital Specjalistyczny, Wrocław
6. Regionalne Centrum Zdrowia, Lubin
7. Szpital Specjalistyczny KCM Clinic SA, Oddział Chirurgii Ogólnej z Pododdziałem Chirurgii Bariatrycznej i Metabolicznej, Jelenia Góra
8. Regionalny Szpital Specjalistyczny im. dr. Władysława Biegańskiego, Grudziądz
9. Uniwersytet Mikołaja Kopernika, Collegium Medicum, Katedra i Klinika Chirurgii Ogólnej, Gastroenterologicznej i Onkologicznej Collegium Medicum, Toruń
10. Szpital Uniwersytecki nr 2 im. dr. Jana Biziela, Klinika Chirurgii Ogólnej i Małoinwazyjnej, Bydgoszcz
11. Uniwersytecki Szpital Kliniczny nr 1, II Klinika Chirurgii Ogólnej, Gastroenterologicznej i Nowotworów Układu Pokarmowego, Lublin
12. Samodzielny Publiczny Zakład Opieki Zdrowotnej, Łęczna
13. 1 Wojskowy Szpital Kliniczny, Lublin
14. Wielospecjalistyczny Szpital, Oddział Chirurgii Ogólnej, Onkologicznej i Gastroenterologii, Nowa Sól
15. Nowy Szpital, Oddział Chirurgii Ogólnej, Kostrzyn nad Odrą
16. Wojskowy Instytut Medycyny Lotniczej, Klinika Chirurgii Ogólnej, Warszawa
17. Wojskowy Instytut Medyczny — Państwowy Instytut Badawczy, Klinika Chirurgii Ogólnej, Onkologicznej, Metabolicznej i Torakochirurgii, Warszawa
18. Specjalistyczny Szpital Wojewódzki, Oddział Chirurgii Ogólnej, Onkologicznej i Bariatrycznej, Ciechanów
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21. Klinika Chirurgii Ogólnej Onkologicznej i Bariatrycznej, Warszawa
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23. Wojewódzki Szpital Specjalistyczny im. Ludwika Rydygiera, Kraków
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27. Carella — Klinika Chirurgii i Medycyny Estetycznej, Białystok
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33. SP ZOZ MSWiA w Gdańsku, Centrum Chirurgicznego Leczenia Otyłości, Gdańsk
34. Wojewódzki Szpital Specjalistyczny im. Janusza Korczaka, Słupsk
35. Swissmed — Centrum Zdrowia, Gdańsk
36. „Pro-Medica" w Ełku Sp. z o.o. — Szpital, Oddział Chirurgii Ogólnej, Ełk
37. Miejski Szpital Zespolony, Oddział Kliniczny Chirurgii Ogólnej z Pododdziałem Chirurgii Bariatrycznej, Olsztyn
38. Szpital Powiatowy im. Jana Pawła II, Oddział Chirurgii Ogólnej i Małoinwazyjnej, Bartoszyce
39. Centrum Medyczne HCP Sp. z o.o. Szpital im. św. Jana Pawła II, Poznań
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44. Szpital Wojewódzki im. Prymasa Kardynała Stefana Wyszyńskiego, Oddział Chirurgiczny, Sieradz
45. Szpital Specjalistyczny, Brzeziny
46. Wojewódzkie Wielospecjalistyczne Centrum Onkologii i Traumatologii im. Mikołaja Kopernika, Oddział Chirurgii Naczyniowej, Ogólnej i Onkologicznej z Pododdziałem Chirurgii Wideoskopowej, Łódź
47. Pabianickie Centrum Medyczne Sp. z o.o., Oddział Chirurgii Ogólnej i Naczyniowej, Łódź
48. Górnośląskie Centrum Zdrowia Dziecka im. św. Jana Pawła II — Samodzielny Publiczny Szpital Kliniczny nr 6 Śląskiego Uniwersytetu Medycznego, Katowice
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50. Szpital Wielospecjalistyczny, Jaworzno
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53. Wojewódzki Szpital Zespolony, Klinika Chirurgii Ogólnej, Onkologicznej i Endokrynologicznej, Kielce
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Conflict of interest

None declared.

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