

Research Article

Profile of Oral Antidiabetic Sales at Pharmacy "X" Semarang City Period January – June 2024

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Abstract. Indonesia ranks fifth in the world for diabetes mellitus (DM) sufferers and is expected to continue increasing until 2050 according to the International Diabetes Federation (IDF). The increase in DM cases will impact the fulfillment of the medication needs in the community. Based on this, the sales data of antidiabetic drugs need to be monitored to ensure that the drug stock is well available because the prevalence of diabetes continues to increase. This study aims to determine the quantity and types of oral antidiabetic medications sold at Pharmacy "X" in Semarang City with and without prescriptions during the period of January – June 2024. This research is a type of observational study with a descriptive method. Data collection was conducted retrospectively using purposive sampling technique. Sample data collection includes the number of drug sales with BPJS (Social Security Organizing Agency) prescriptions and non-BPJS prescriptions, as well as direct purchases without prescriptions, referred to as general sales. The research results show that the best-selling prescription drugs for both BPJS and non-BPJS (general) patients are metformin 500 mg, with sales of (64.51%) and (61%) respectively. Based on their pharmacological classification, the most sold group is biguanides at 64.87%, followed by sulfonylureas at 29.09%, and alpha-glucosidase inhibitors at 6.04%.

Keywords: Metformin; Oral Antidiabetic; Pharmacy; Sales.

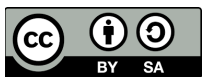
Received: April 21, 2026

Revised: April 29, 2026

Accepted: May 12, 2026

Published: May 16, 2026

Curr. Ver.: May 16, 2026



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1. Introduction

Diabetes mellitus (DM) has become a global issue threatening public health and socio-economic development. Worldwide, it is estimated that 537 million people lived with diabetes in 2021, with a projected drastic increase to 783 million by 2045 [1]. Indonesia, with 19.47 million diabetes sufferers in 2021, ranks fifth among countries with the highest number of diabetes patients in the world [1]. The significant increase in diabetes cases demands a transformation of the healthcare system, considering that the current system is not yet fully capable of handling the growing burden of diabetes, especially in terms of prevention and management of complications. The Indonesian Health Survey (SKI) 2023 and Riskesdas 2018 reveal a concerning trend of increasing diabetes prevalence in Indonesia [2,3]. The IDF Atlas Report (2021) shows that around 28.6 million Indonesians aged 20-79 are affected by Type 2 Diabetes Mellitus (T2DM) with a prevalence of 10.6%. This figure is significantly higher compared to the Riskesdas data (2018), which indicated a diabetes prevalence of about 2% based on doctor diagnoses and 8.5% based on blood sugar test results. This increase is particularly evident in urban areas, with unhealthy lifestyles, obesity, and other risk factors being the main drivers [4]. According to data from the Central Java Provincial Health Office in 2022, the prevalence of diabetes mellitus (DM) in the province reached 623,973 sufferers. Out of the 35 regencies or cities in Central Java, Semarang City ranks third in the highest number of cases [5].

Based on the above prevalence of DM, in order to reduce the increase in complications caused by the disease, it is hoped that healthcare facilities such as pharmacies, clinics, community health centers, and hospitals can meet the medication needs used for DM therapy in the community [6].

Therefore, antidiabetic sales data need to be monitored to ensure that stock is always available in healthcare services, especially in pharmacies. Thus, a field study is necessary to determine the antidiabetic sales profile at Pharmacy "X" in Semarang City.

2. Method

This research was conducted at Pharmacy X in Semarang City with the study object being the sales data of oral antidiabetic drugs for the period of January – June 2024. The data used are retrospective data with purposive sampling technique. The inclusion criteria for this study include data on oral antidiabetic sales from both BPJS and non-BPJS patient prescriptions (general prescriptions and including direct purchases) for the period of January – June 2024. The research period is August 2024 with Ethical Approval Number: 679/EVM-NA/KEPK/STIFAR/EC/VII/2024.

3. Results and Discussion

This study aims to determine the quantity and types of oral antidiabetic drugs sold at Pharmacy "X" in Semarang City with and without prescriptions during the period of January – June 2024. The researcher only collected data from 3 groups of oral antidiabetic drugs sold at the pharmacy, namely biguanides (metformin 500 mg and 850 mg), sulfonylureas (glimepiride 1 mg, 2 mg, 3 mg, and 4 mg), and alpha-glucosidase inhibitors (acarbose 50 mg and 100 mg). Table 1 illustrates the sales data of oral antidiabetic medications from BPJS patient prescriptions from January to June 2024, and Table 2 presents the sales data of oral antidiabetic medications from non-BPJS patient prescriptions from January to June 2024.

Table 1. Data on Oral Antidiabetic Sales from BPJS Patient Prescriptions from January to June 2024.

No	Generic name	Monthly sales (Tablets)						Total (Tablet)	%
		Jan	Feb	Mar	Apr	May	Jun		
1	Metformin 500 mg	9,955	12,288	8,797	10,206	10,320	10,500	62,066	64.51
2	Metformin 850 mg	6	0	0	0	60	60	126	0.13
3	Glimepiride 1 mg	900	1,050	630	870	780	840	5,070	5.27
4	Glimepiride 2 mg	3,340	3,393	3,324	3,703	3,390	3,690	20,840	22.00
5	Glimepiride 3 mg	330	453	190	690	240	330	2,233	2.00
6	Glimepiride 4 mg	30	0	0	0	30	0	60	0.00
7	Acarbose 50 mg	540	300	390	390	600	540	2,760	3.00
8	Acarbose 100 mg	540	480	450	570	420	600	3,060	3.00
		15,641	17,964	13,781	16,429	15,840	16,560	96,215	100.00

Table 2. Data on Oral Antidiabetic Sales from Non-BPJS Patient Prescriptions for January – June 2024.

No	Generic name	Monthly sales (Tablets)						Total (Tablets)	%
		Jan	Feb	Mar	Apr	May	Jun		
1	Metformin 500 mg	130	300	370	420	460	410	2,090	61.00
2	Metformin 850 mg	0	50	0	40	50	50	190	6.00
3	Glimepiride 1 mg	0	20	0	100	70	30	220	6.00
4	Glimepiride 2 mg	40	40	50	60	180	40	410	12.00
5	Glimepiride 3 mg	10	40	0	30	20	70	170	5.00
6	Glimepiride 4 mg	10	20	10	40	40	20	140	4.00
7	Acarbose 50 mg	40	60	10	30	20	10	170	5.00
8	Acarbose 100 mg	0	10	0	0	0	0	0	0.00
		230	540	440	720	840	630	3,400	100.00

Based on the sales data of oral antidiabetic medications from both BPJS and non-BPJS patient prescriptions, it shows that metformin 500 mg is the most sold preparation from January to June 2024, with 64.51% and 61% respectively, followed by glimepiride 2 mg at 22% for BPJS prescriptions and 12% for non-BPJS. Pharmacy "X" is one of the healthcare facilities serving the needs of BPJS patients in Semarang City, so the majority of antidiabetic sales come from BPJS prescriptions.

Metformin is the first-line oral antidiabetic used to control blood sugar levels in type 2 DM patients after failure of non-pharmacological lifestyle modification therapy according to PERKENI (2021). This drug belongs to the biguanide class, which works by increasing insulin sensitivity, inhibiting glucose production in the liver, and reducing levels of low-density lipoprotein (LDL) and triglycerides [7]. The second most sold drug is glimepiride (a sulfonylurea class) followed by acarbose (an alpha-glucosidase inhibitor class). Both of these drugs are also classified as oral antidiabetic agents that can be administered to DM patients either in combination or as monotherapy, each working by increasing insulin secretion and slowing the absorption of blood glucose after meals [8].

4. Conclusions

The best-selling oral antidiabetic is metformin, which belongs to the biguanide class, followed by glimepiride (a sulfonylurea class).

Author Contributions: Conceptualization: AAW and ADEP; Methodology: AAW and ADEP; Formal analysis: AAW; Investigation: ADEP; Resources: ADEP; Data curation: ADEP; Writing—original draft preparation: AAW; Writing—review and editing: ADEP.; Visualization: ADEP; Supervision: ADEP; Project administration: AAW; Funding acquisition: AAW.”

Funding: This research received no external funding

Data Availability Statement: Data unavailable due to privacy or ethical restrictions

Acknowledgments: Expression of gratitude to Pharmacy “X” Semarang City for the research facilities used.

Conflicts of Interest: The authors declare no conflict of interest.”

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