

Gender Specific Drug Prices in Germany – A Comparative Analysis

HPR106

Objectives

Gender-based differences in medication access and pricing are an ongoing concern in both clinical practice and health economics. International studies show that women are more likely than men to experience cost-related non-adherence (CRN), meaning that they skip or delay taking their medicines because of high prices [1]. This is not only linked to income, education, or insurance coverage, but also to deeper social and structural barriers such as caregiving duties, economic insecurity, and gender roles [1-4,5]. Women also use medication more frequently because they are more likely to be prescribed it for mental health issues, thyroid issues, chronic pain, or reproductive health issues [6-8]. At the same time, women face higher prices for the same products, a phenomenon called the Pink Tax [9].

Market studies in Germany have shown that gender-based price differences in personal care products come with the result that women pay 13–15% more for items like razors, shampoos, or lotions [12]. There is no data, though, whether comparable discrepancies also exist in drugs [12]. With this study we aimed to investigate gender-based price differences in drugs for Germany. Our goals were: (1) compare the costs of prescription and over-the-counter (OTC) medications sold in Germany for comparable therapeutic purposes for men and women; and (2) determine whether pricing variations also exist for first-line cancer therapies evaluated between 2023 and 2025.

Methods

We conducted a quantitative analysis of drug prices in Germany using the Lauer-Taxe database (cut-off date: 1. September 2025). Our sample included both prescription and OTC drugs commonly used by both women and men. We focused on the following therapeutic areas:

- pain management
- hair loss treatments
- urinary tract infections (UTI)
- antidepressants
- urogenital support
- hormone replacement therapy (HRT)
- fertility drugs
- assisted reproductive treatments (ART)
- iron deficiency treatments
- micronutrient supplements

For each therapeutic group, we compared currently marketed drugs with the same active substance and dosage strength. If exact matches were not available, we compared the active ingredients used for men's and women's treatments for the same indication. In some cases, we calculated and compared the price per unit to ensure comparability between different formulations.

In a second step, we analyzed the annual therapy costs of oncology drugs evaluated in Germany between 2023 and 2025. The focus was on the comparison of first-line therapies for breast cancer and prostate cancer. For this purpose, we used official price data from the Lauer-Taxe and complemented it with health technology assessments from the Federal Joint Committee to account for treatment lines and disease status.

Conclusions

The findings suggest that for general prescription drugs, OTC products, and first-line cancer therapies, prices are often considerably higher for women. In the OTC sector, products such as pain relief drugs, minoxidil for hair loss, and urogenital support preparations showed substantial price differences, exposing women to direct out-of-pocket costs [12,9]. For prescription drugs, women's HRT and ART were consistently more expensive, which is notable given the central role of these therapies in women's long-term health [16-18]. A big difference in the pricing of novel treatments was highlighted by the fact that the average annual therapy costs for breast cancer in oncology were much higher than those for prostate cancer [19,20].

It should be highlighted that the direct burden is decreased because the German statutory health insurance covers a large number of these drugs. However, most OTC products are an exception [7].

The sustainability of healthcare systems more generally as well as women personally are impacted by gender-based disparities, which are highlighted by the general trend of our analysis.

CRN is more common among women, particularly in chronic and oncological treatment, according to earlier research [4,6]. Our results strengthen the call for further research on gender-based pricing and for the implementation of inclusive and fair healthcare policies that ensure equal access to necessary medicines [21].

Results

Dataset

We analyzed the prices of 79 currently sold drugs in Germany, focusing on both prescription and OTC medications. Among these, 26 were OTC products, commonly used by both men and women. In addition, we included 9 first-line cancer therapy regimens, specifically for breast cancer and prostate cancer.

OTC

Table 1 shows the price comparison of selected OTC preparations in Germany. The analysis demonstrates that women's products were more expensive in most therapeutic areas. For example, the price of minoxidil for hair loss, was almost double per unit for women compared to men. Large differences were also seen in urogenital support products, where women's prices were more than twice as high. Smaller, but still notable gaps appeared in pain and inflammation treatments. Iron deficiency drugs were somewhat less expensive for women than for men, and only micronutrient supplements displayed similar costs.

| Substance Average | Indication | Retail Price (€) | | Unit Price (€) | |
|---|-----------------------|------------------|--------|----------------|-------|
| | | Women | Men | Women | Men |
| Naproxen | Pain/ Inflammation | 12.16 | 11.6 | 0.61 | 0.58 |
| Hyoscine butylbromide | Pain/ Inflammation | 14.28 | 10.15 | 0.71 | 0.59 |
| Heat-patches | Pain/ Inflammation | 9.99 | 9.66 | 4.995 | 4.83 |
| Minoxidil | Hair loss (alopecia) | 38.78 | 19.102 | 0.646 | 0.318 |
| Ferrous sulfate | Iron deficiency | 5.6 | 6.4 | 0.0035 | 0.004 |
| Vit C, B9,Se | Fertility support | 22.49 | 29.99 | 0.75 | 1 |
| Vitamins B, C, D, E, zink, magnesium... | Micronutrient support | 42.89 | 42.89 | 1.43 | 1.43 |
| Lactobacillus Proanthocyan-D-Mannose/Pumpkin seed | Urogenital support | 36 | 14.1 | 1.2 | 0.47 |

Table 1: Price comparison of selected OTC preparations in Germany

OTC (Minoxidil)

Among the OTC drugs analyzed, minoxidil for hair loss showed the largest gender price difference. As Figure 1 demonstrates, the average unit price for women (0.646 €/ml) was more than twice as high as for men (0.318 €/ml). In addition, women's formulations are typically provided in 2% preparations, while men's products are usually sold as 5% preparations. To allow for a fair comparison, we recalculated the women's prices to match the men's percentage strength.

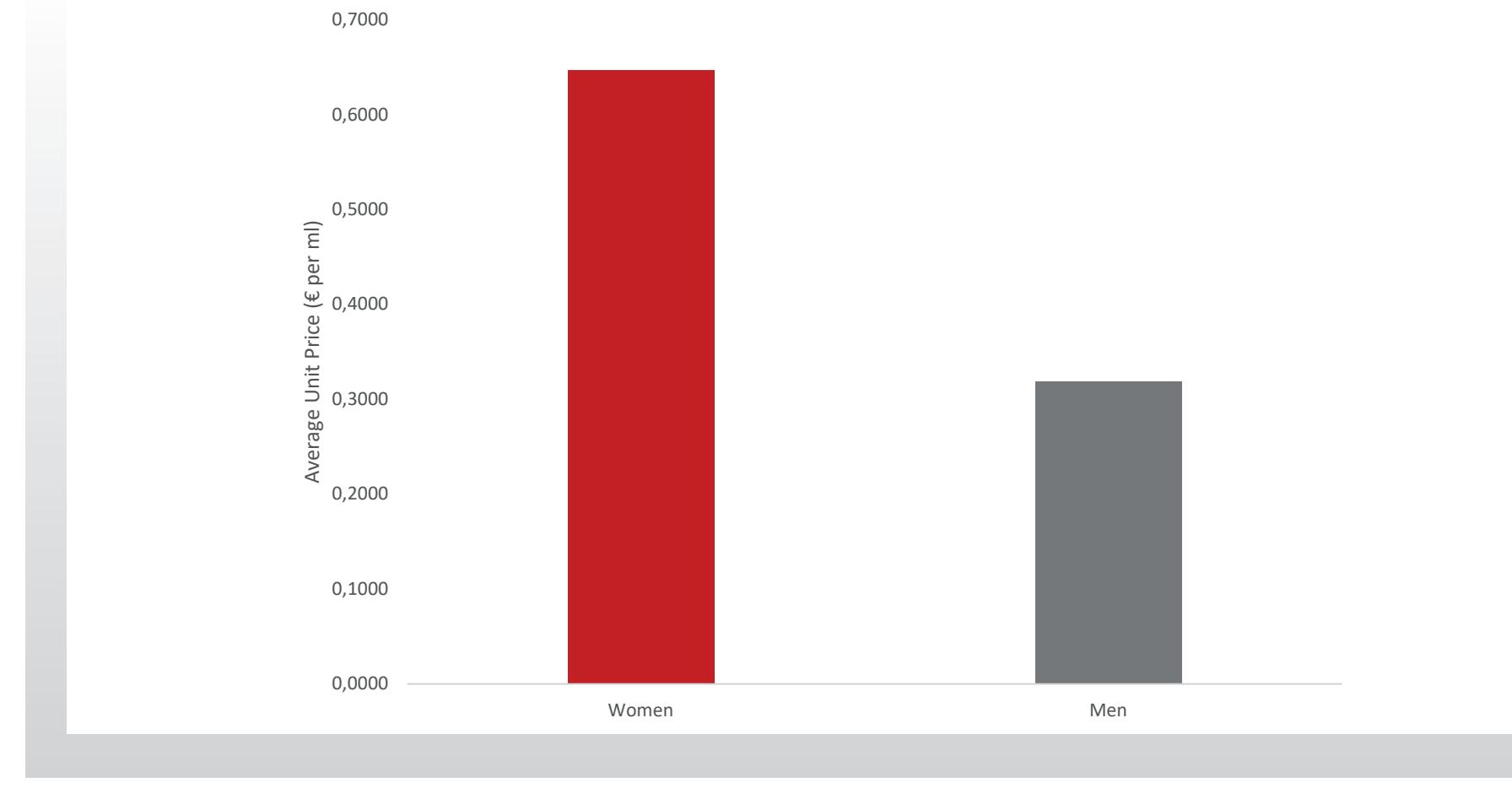


Figure 1: Average unit price comparison of Minoxidil 50 mg/ml

OTC (Pain Relief Products)

Figure 2 compares the retail prices of common pain relief products marketed to women and men. The analysis shows that the differences are relatively small compared to other OTC categories. For naproxen and heat-based products, women's prices were only slightly higher, while hyoscine butylbromide/paracetamol, often marketed for menstrual pain, showed a clearer price gap in favor of hyoscine butylbromide (HBB) used in men.

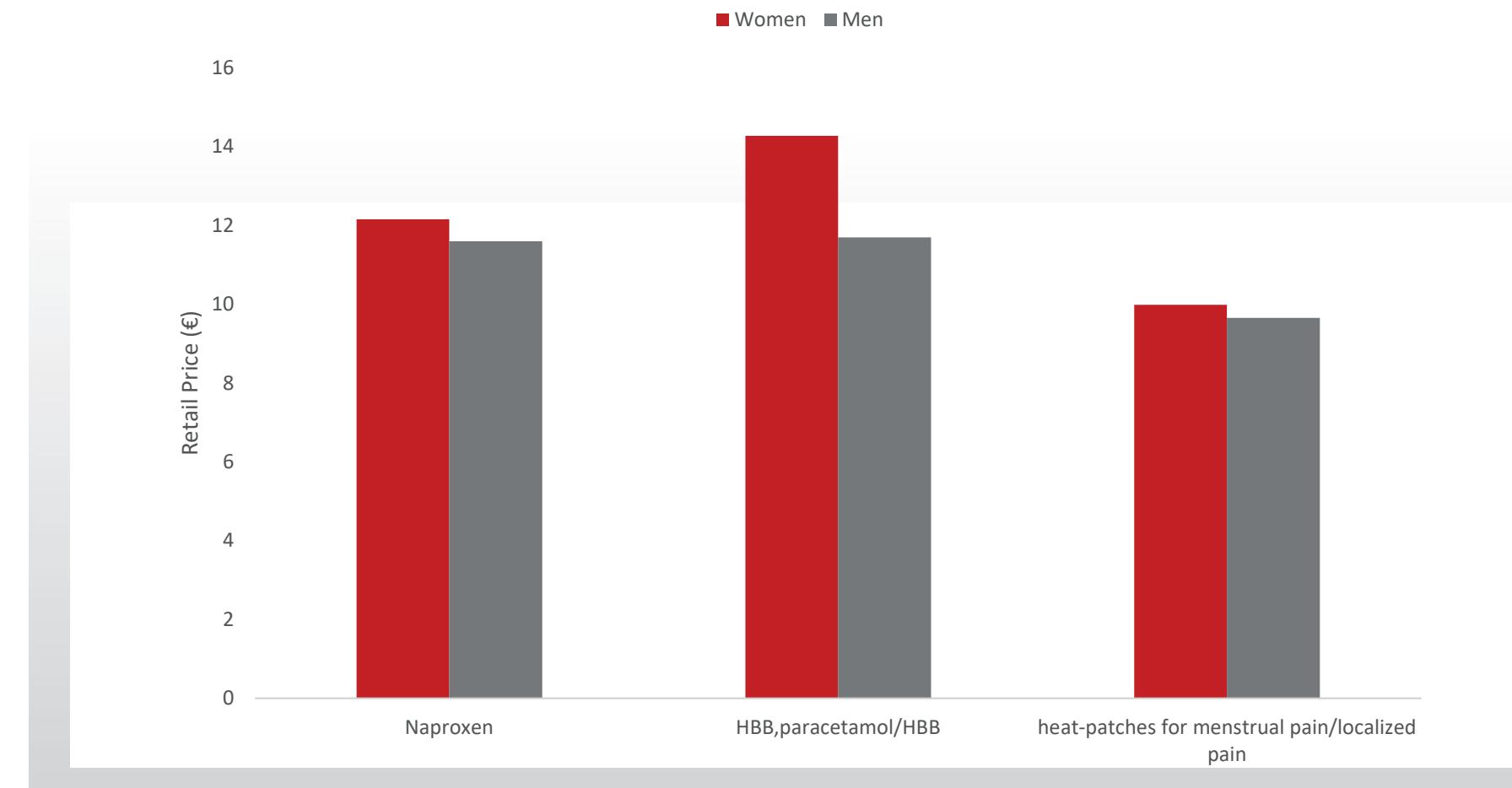


Figure 2: Retail price comparison of pain relief products

Prescription drugs

Table 2 shows clear gender-related price differences which were observed in several therapeutic groups of prescription drugs. In urogenital support, women's lactobacillus-based therapies showed much higher prices than men's tamsulosin. For HRT, women's estradiol and tibolone were cheaper per unit than men's testosterone, but progesterone for women costs more than testosterone. ART displayed some of the widest gaps: women's regimens, which include gonadotropins and GnRH analogues, were much more expensive than men's fertility drugs.

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| Substance Average | Indication | Retail Price (€) | | Unit Price (€) | |
|---|---------------------------------|------------------|-------|----------------|-------|
| | | Women | Men | Women | Men |
| Nitrofurantoin/Ciprofloxacin | Urinary tract infection | 6.15 | 14.75 | 0.615 | 1.475 |
| Fosfomycin trometamol/Levofloxacin | Urinary tract infection | 16.01 | 79.47 | 16.01 | 7.947 |
| Lactobacillus/Tamsulosin | Urogenital support | 29.6 | 2.6 | 2.96 | 0.26 |
| Estradiol/Testosterone | Hormone replacement therapy | 30.92 | 47.04 | 1.10 | 1.68 |
| Tibolone/Testosterone | Hormone replacement therapy | 23.66 | 47.04 | 0.85 | 1.68 |
| Progesterone/Testosterone | Hormone replacement therapy | 59.96 | 50.4 | 2.00 | 1.68 |
| Menotropin, Ultronip, Clomifene, Follitropin, Chorionic gonadotropin | Assisted reproductive treatment | 46.04 | 42.17 | 46.04 | 42.17 |
| Leuprorelin, Triptorelin/ Clomifene, Follitropin, Chorionic gonadotropin | Assisted reproductive treatment | 88.95 | 42.17 | 88.95 | 42.2 |
| Sertraline, Escitalopram, Fluoxetine/ Amitriptyline, Mirtazapine, Bupropion | Antidepressants | 29.17 | 20.26 | 1.46 | 1.0 |

Table 2: Price comparison of selected prescription drugs

Prescription (Antidepressants)

Antidepressants represent a very important therapeutic area because they are among the most frequently prescribed drugs in Germany and worldwide [13]. Figure 3 shows that women's products, such as sertraline, escitalopram, and fluoxetine, had higher unit prices compared to men's alternatives like amitriptyline, mirtazapine, and bupropion.

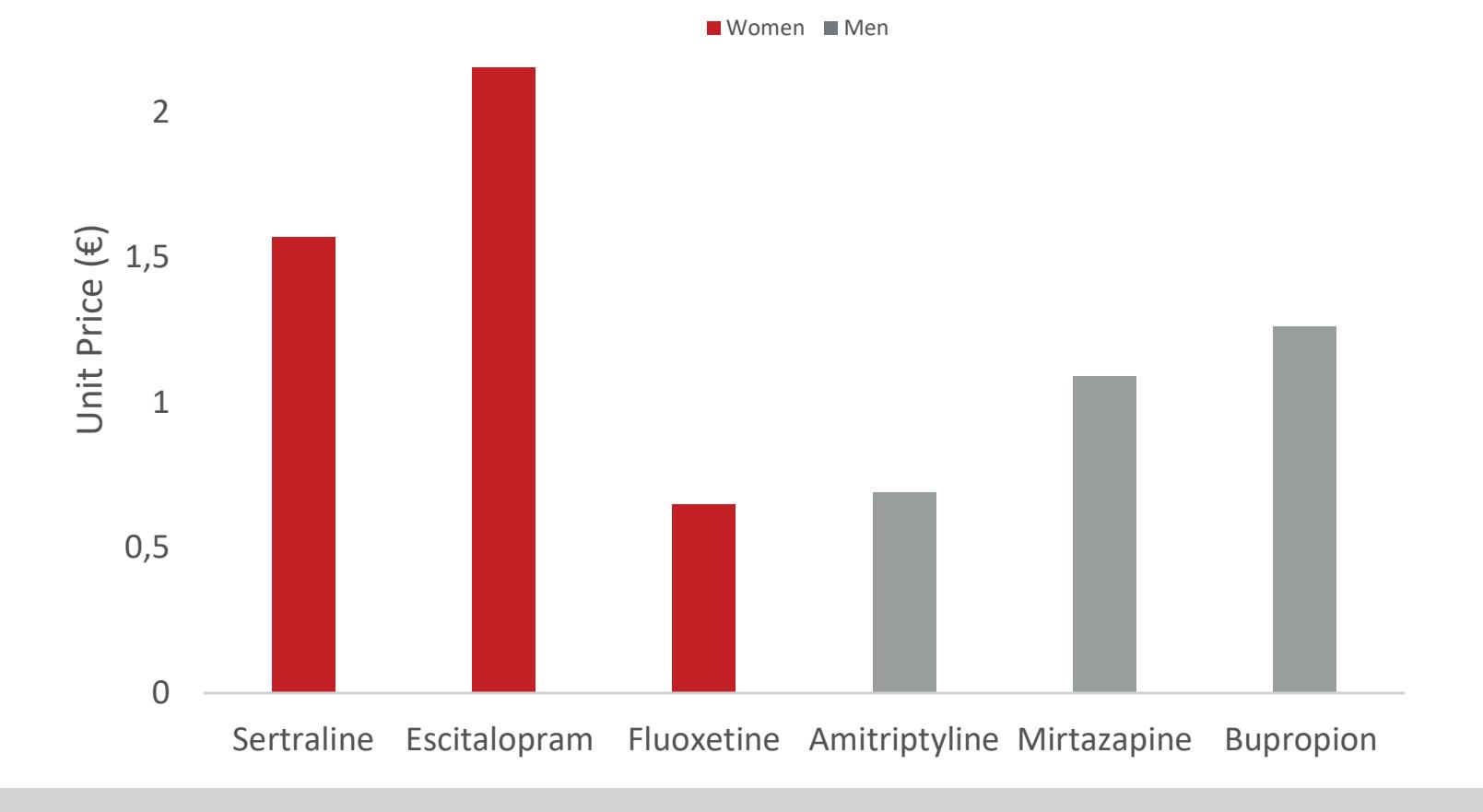


Figure 3: Unit prices of common antidepressants

Prescription (UTIs)

UTIs are one of the most common conditions for which antibiotics are prescribed, particularly among women [14,15]. There is a vice-versa effect in pricing, while women's first-line drugs such as nitrofurantoin are cheaper, other options like fosfomycin, also commonly prescribed for women, are much more expensive than men's alternatives. By contrast, men's therapies such as ciprofloxacin and levofloxacin show higher unit prices than some of the female-targeted drugs (see Figure 4).

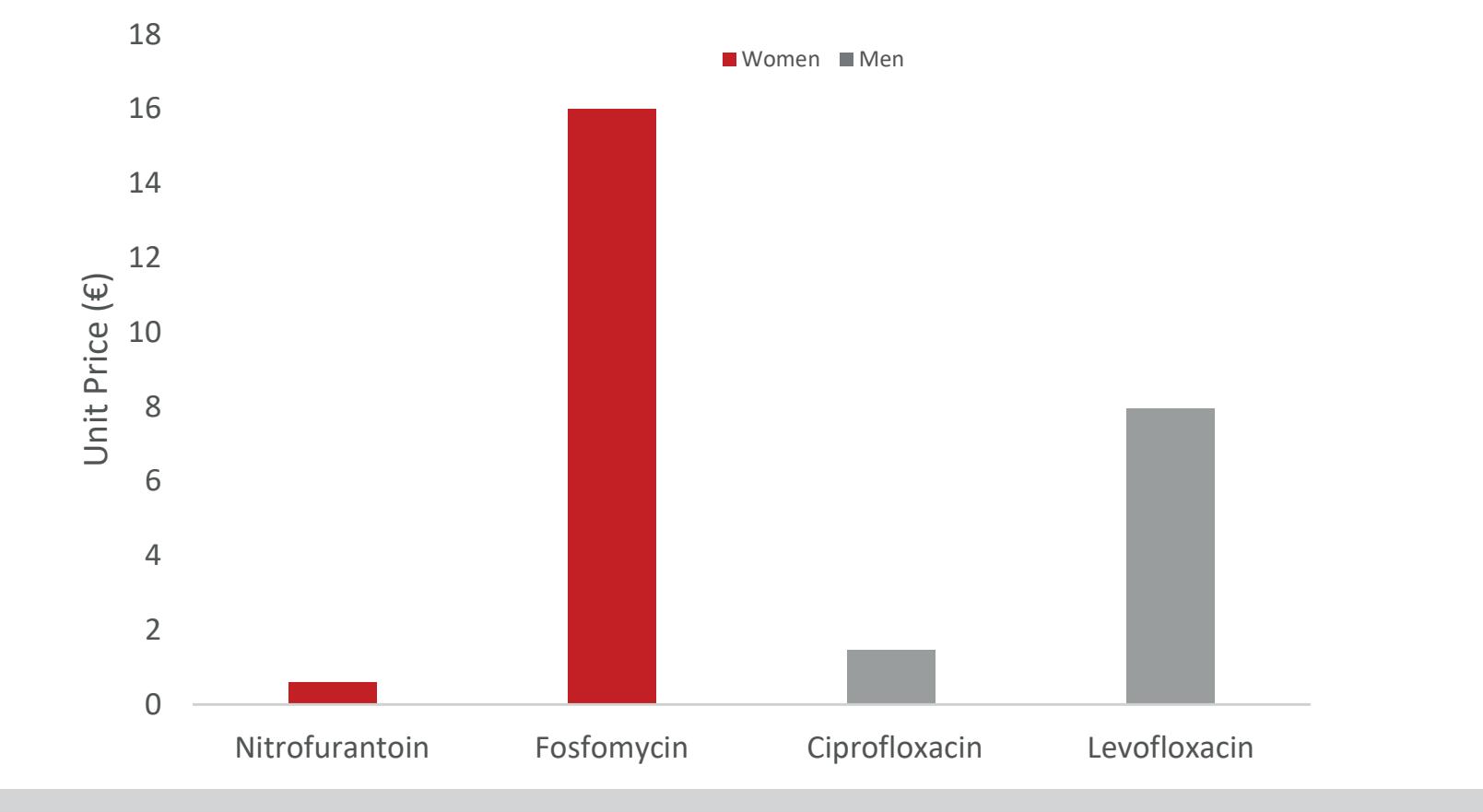


Figure 4: Unit price comparison of antibiotics for UTIs

First-Line Cancer Therapy – Overview

A deeper look into first-line cancer therapies revealed significant gender-related cost differences. We analyzed nine therapy regimens used in breast cancer and prostate cancer. Prostate cancer therapies show a wide cost range, from low-cost regimens such as relugolix (€2,391) to high-cost options like niraparib/abiraterone (€59,788). Most therapies, including enzalutamide and apalutamide, fall between €34,000 and €41,000 annually.

Breast cancer therapies showed consistently high costs, with ribociclib ranging from €60,307 to €90,461 annually and pertuzumab-based regimens exceeding €50,000 to 86,000 per year.

First-Line Cancer Therapy (Comparison)

The distribution of yearly treatment expenses for prostate and breast cancer is displayed in Figure 5. The graph shows that while breast cancer treatments are concentrated at higher levels, frequently above €60,000 per year, prostate cancer medications are concentrated at lower and more variable price ranges.

Figure 6 compares the average annual therapy costs for breast and prostate cancer. Breast cancer therapies averaged €72,003, while prostate cancer therapies averaged €33,352, making breast cancer regimens much more expensive.



Figure 5: Cost distribution of breast cancer vs. prostate cancer



Figure 6: Average annual therapy costs: breast cancer vs. prostate cancer

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Presented at
ISPOR Europe 2025
November 10th, 2025
Glasgow, Scotland

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References

- [1] Daw JR, Law MR. Compared With Other Countries, Women In The US Are More Likely Than Men To Forgo Medicines Because Of Cost. *Health Aff (Millwood)*. 2020; 39(8):1334-42.
- [2] Eason J, Borchardt C, Kiefer P, et al. The Role of Gender in Cost-Related Medication Nonadherence Among Patients with Diabetes. *J Am Board Fam Med*. 2018; 31(3):243-51.
- [3] Bhuyan SS, Shyamkela O, Keddy S, et al. Does Cost-Related Medication Nonadherence among Cardiovascular Disease Patients Vary by Gender? Evidence from a Nationally Representative Sample. *Womens Health Issues*. 2017; 27(1):108-15.
- [4] Lee M, Khan MM. Gender differences in cost-related medication non-adherence. *J Cancer Surviv*. 2016; 10(2): 384-93.
- [5] X Zhang J, O Melzer D. Is there a Gender Difference in Cost-Related Medication Non-adherence? *J Gerontol Genet Res*. 2016; 05(02).
- [6] Orlando M, Mucheno D, Guarino I, Guerriero F, Trama U, Mordini E. Gender Differences in Medication Use: A Drug Utilization Study Based on Real World Data. *Int J Environ Public Health*. 2020; 17(11).
- [7] Fidler K, Koch W. Gesundheitliche Lage der Frauen in Deutschland. *Gesundheitsberichterstattung des Bundes*. Gemeinsam getragen von RKI und BMFSFJ. 2020; 15:56-70.
- [8] Deutscher Bundestag. Drucksache 15/5670. Berlin: Bundesministerium für Gesundheit und Soziale Sicherung; 2005.
- [9] Wehner MR, Nead KT, Joplin JB. Association Between Gender and Drug Cost for Over-the-Counter Minoxidil. *JAMA Dermatol*. 2017; 153(8):825-6.
- [10] New York City Department of Consumer Affairs. From cradle to cane: The cost of being a female consumer – A study of gender pricing in New York City, 2015.
- [11] NorthwestPharmacy.com. Is there a pink tax on medication for women? NorthwestPharmacy. n. d.
- [12] Verbraucherzentrale Bundesverband. Preisdifferenzierung nach Geschlecht in Deutschland. Berlin: Verbraucherzentrale Bundesverband; 2017.
- [13] Eason J, Borchardt C, Kiefer P, et al. Testosterone Therapy in Men With Hypogonadism: An Endocrine Society Clinical Practice Guideline. *J Clin Endocrinol (Edinb)*. 2018; 161(3):1715-44.
- [14] Gupta K, Houston TM, Nuber KG, et al. International clinical practice guidelines for the treatment of acute uncomplicated cystitis and pyelonephritis in women: A 2010 update by the Infectious Diseases Society of America and the European Society for Microbiology and Infectious Diseases. *Clin Infect Dis*. 2011; 52(5):e103-20.
- [15] Welberg J. S3-Leitlinie Epidemiologie, Diagnostik, Therapie, Prävention und Management unkomplizierter bakterieller ambulant erworbener Harnwegsinfektionen bei Erwachsenen 2024.
- [16] Frank S, Le Q-K, Kremer J, Kiesel L, Farquhar C. Aromatase inhibitors (letrozole) for ovulation induction in infertile women with polycystic ovary syndrome. *Syst Rev*. 2022; 9(9):C001028.
- [17] Giudice L, Crotti A, Scialfa R, Garella A, Santi D, Perlini A. FSH Therapy in Male Factor Infertility: Evidence and Factors Which Might Predict the Response. *Life (Basel)*. 2024; 14(10):1715-26.
- [18]