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RESEARCH ARTICLE
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"EVALUATING NSAIDs PRICE DISPARITIES: INSIGHTS FROM JAN AUSHADHI, E-PHARMACIES AND NPPA PRICE CAP"

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ABSTRACT

Objectives

Non-steroidal anti-inflammatory drugs (NSAIDs) are widely used in India for pain, inflammation and fever management. However, significant price disparities exist across different distribution channels, including government-subsidized PMBJP (Pradhan Mantri Bhartiya Jan Aushadhi Pariyojana) stores, online pharmacies and NPPA (National Pharmaceutical Pricing Authority)-regulated pricing. This study aims to evaluate price variations of NSAIDs across these platforms.

Methods

This cross-sectional observational study was conducted at King George's Medical University, Lucknow over four weeks in January 2025. Data were collected from the PMBJP drug list (2024), NPPA portal (2024) and online pharmacies (PharmEasy, Netmeds, Tata 1mg, and Apollo Pharmacy). Maximum and minimum market prices were recorded for each NSAID, and comparative analysis was performed. Descriptive statistics were used to compute percentage variations and paired t-tests were applied to assess statistical significance. The Cost Index Formula was utilized to quantify price disparities between market prices and regulatory limits.

Results

NSAIDs displayed considerable price disparities across different pricing platforms. Mefenamic Acid 500 mg exhibited the highest price inflation (35 times PMBJP price), while Tramadol 50mg showed a 23 times markup. Paracetamol 500 mg, with a cost index of 98.00, indicated extreme price variability. Certain NSAIDs, such as Etoricoxib, Nimesulide and Etodolac, lacked NPPA price caps, leading to unregulated price fluctuations (8-12 times PMBJP prices). While PMBJP provided the lowest prices, some market minimum prices matched or even undercut PMBJP rates, suggesting the influence of competitive pricing. NPPA ceiling prices remained significantly higher than PMBJP rates, raising concerns about the effectiveness of price regulation policies

Conclusion
Despite NPPA regulations, NSAID price variations remain substantial, with private retailers often exceeding price limits. The PMBJP initiative effectively reduces costs, but its limited reach affects accessibility. Expanding PMBJP centers and ensuring frequent NPPA price revisions aligned with market trends can improve affordability. The study underscores the need for stronger enforcement of price regulations and policy adjustments to bridge gaps between government pricing and market realities.

Keywords: NSAIDs, NPPA, Jan Aushadhi, Drug Pricing, Price Disparity

INTRODUCTION

NSAIDs (non-steroidal anti-inflammatory drugs) are among the most commonly used medications in India for pain, inflammation & fever with studies suggesting that nearly 40% of all prescriptions in India contain at least one NSAIDs.(1)

According to various studies, out-of-pocket expenditure on healthcare in India accounts for nearly 60-65% of total health expenses, one of the highest globally,(2) with medication costs constituting a significant portion of healthcare expenses (15-18%). Estimates suggest, out of this 4-5% of medication expenses are directed towards NSAIDs, as they are most widely used for pain & inflammation.(3)

Given the widespread use of NSAIDs in India, ensuring their affordability becomes a crucial aspect of healthcare accessibility. To address this issue, the Indian government launched the Pradhan Mantri Bhartiya Jan Aushadhi Pariyojana (PMBJP), a government program aimed at providing essential drugs at significantly lower prices through dedicated Jan Aushadhi Kendras. As of 2024, there are 13,822 Jan Aushadhi stores operating across India, which play a crucial role in providing affordable medicines.(4)

To regulate the prices of essential medicines, government of India has launched NPPA (National Pharmaceutical Pricing Authority), which is empowered by DPCO (Drug Prices Control Order)(5) Online pharmacies such as 1mg(6), Pharmeasy(7), Apollo pharmacy(8) & Netmeds(9) have drastically changed pharmacy scenario with marked availability of different branded medications, which in turn result in marked variation in prices.

High prices of medications discourage adherence, especially for chronic users. Inconsistency in pricing create disparities in access to essential medications, disproportionately affecting economically disadvantaged groups.(10)

Despite the widespread use of NSAIDs and their significant contribution to out-of-pocket healthcare expenditures, there has been limited research analysing their pricing trends across different distribution channels in India. Given the absence of prior research in this area, thus we aim to bridge the knowledge gap by evaluating & comparing the price trends of selected NSAIDs in India by analysing data from three key resources: the government subsidized PMBJP, online pharmacies & NPPA regulated price limits.

MATERIALS & METHODS

This is a cross- sectional analysis conducted in King George's Medical University, Lucknow over a period of 4 weeks in the month of January 2025.

Data was collected from PMBJP drug list 2024(4), NPPA list as on 2024(5) & online platforms- PharmEasy, 1mg, Apollo pharmacy & Netmeds (January 2025) for comparison. The study included NSAIDs (tablet formulations) in both monotherapy and combination forms. Online pharmacy maximum & minimum prices were considered without considering temporary discounts to maintain uniformity in price comparison. Also prices were recorded on a per tablet basis to ensure the same. Drugs with three or more doses were not taken into account. Suspension, injections & capsules were not included.

Descriptive & analytical statistics was used for analysis. Percentage differences between the maximum and minimum prices, as well as between PMBJP and maximum prices, were computed.

Paired t-tests was applied to determine the significance of differences between price groups. P-value of <0.05 was considered statistically significant. Cost index is used to quantify the price disparity among NSAIDs by comparing the highest & lowest observed market prices. It provides a measure of price variation within the retail market to identify drugs with extreme price fluctuations. SPSS (version 29.0.2.0) & Microsoft Excel (2024) were used for data analysis.

$$\textbf{COST INDEX} = \frac{maximum\ market\ price - minimum\ market\ price}{minimum\ market\ price} \quad (11)$$

RESULTS

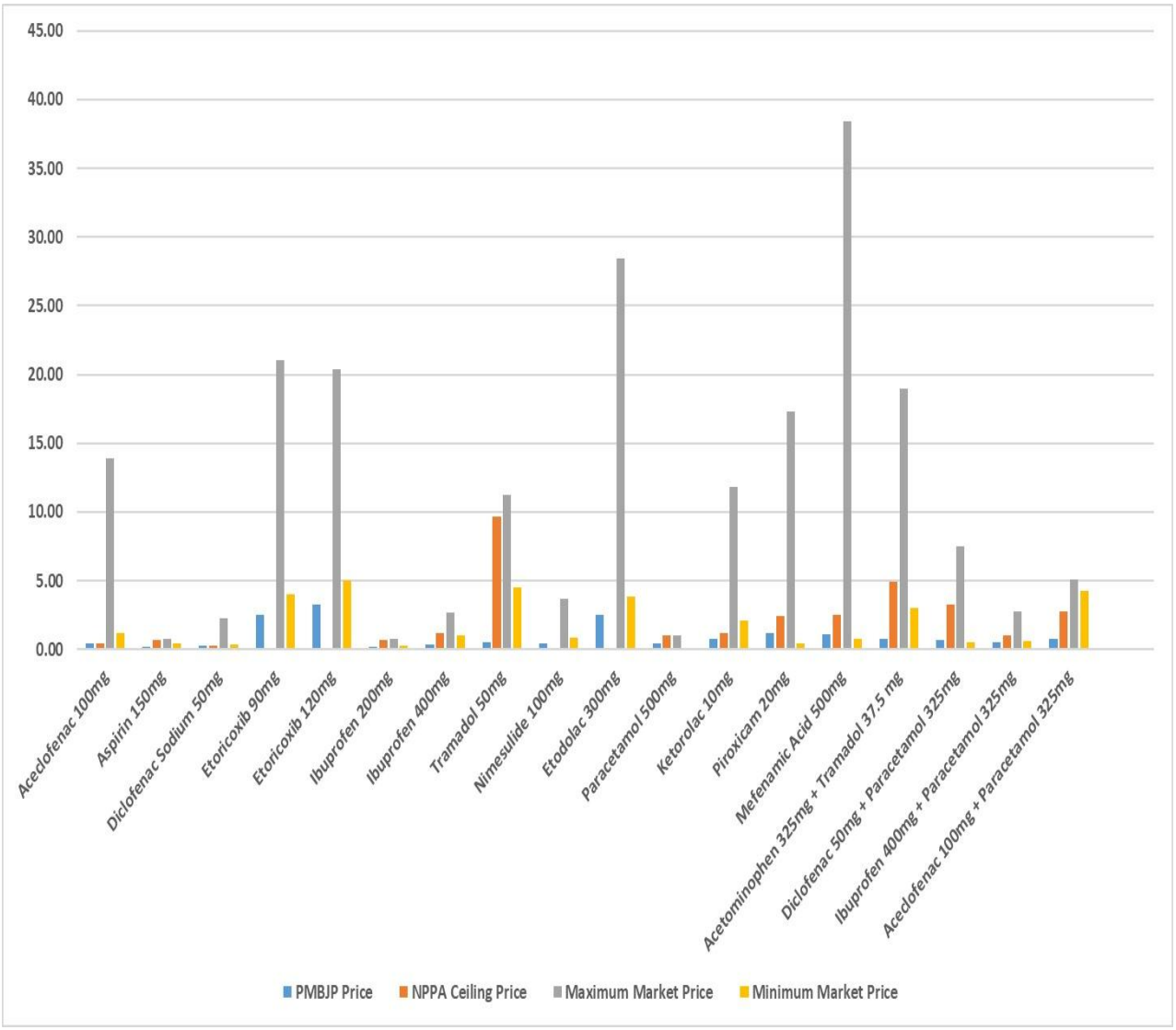

Fig 1: Comparing variation in Jan Aushadhi price, NPPA ceiling price, maximum & minimum market prices of various NSAIDs per tablet (in Rupees) (NPPA-National Pharmaceutical pricing authority)

NSAIDs show significantly inflated market prices when compared to PMBJP rates ranging from approximately 35 times to 2.20 times the PMBJP prices (Figure 1). Few drugs are not under NPPA regulation resulting in Maximum market price range of 8-12 times the PMBJP prices & with extensive variation observed between maximum & minimum market prices.

Paracetamol has the highest cost index (98.00) – The maximum price is 98 times the minimum price (₹0.99 vs. ₹0.01), indicating extreme price variability. Few drugs like tramadol 50mg, Ketorolac 10mg and acetaminophen + tramadol combination have lowest cost indices (<1.5), indicating relatively stable market pricing.

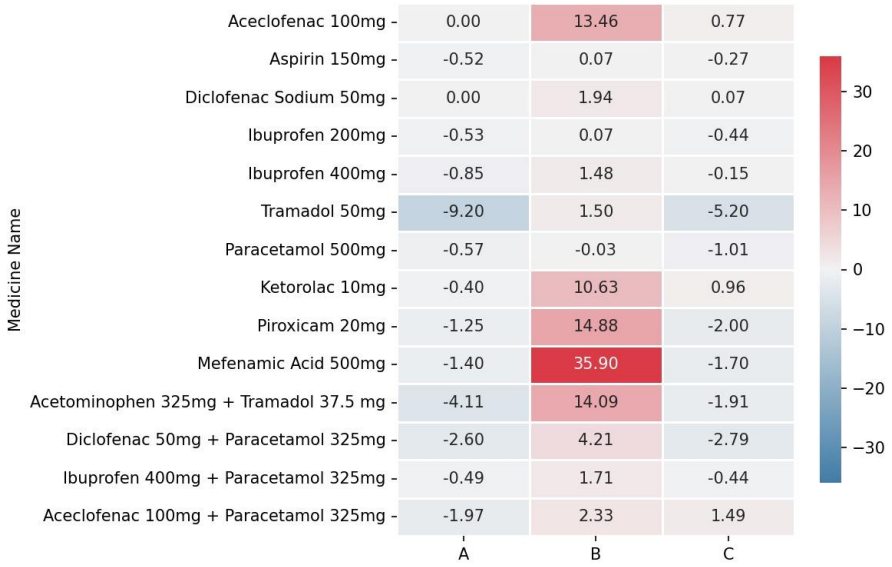

Fig 2: Comparing Jan Aushadhi prices, maximum market prices & minimum market prices considering NPPA as baseline (NPPA-National Pharmaceutical pricing authority)
A: Jan Aushadhi Prices **B:** Maximum Market Prices **C:** Minimum Market Prices

Maximum market price of all drugs was found above NPPA & significant deviation was observed for Mefenamic Acid 500 mg. PMBJP prices generally remained lower or close to NPPA ceiling prices. This trend indicates that for certain formulations, even market-driven pricing mechanisms maintain affordability below the NPPA limits. (Figure 2)

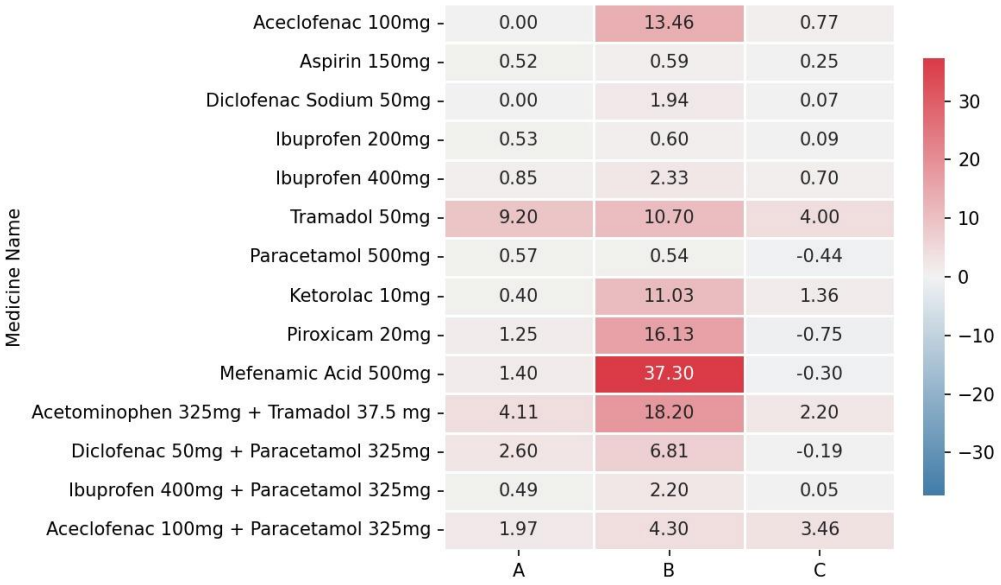

Fig 3: Comparing NPPA ceiling prices, maximum market prices & minimum market prices considering Jan Aushadhi pricing as baseline
A: NPPA ceiling prices **B:** Maximum Market Prices **C:** Minimum Market Prices

The minimum market prices remain closer to PMBJP in most cases, except for a few outliers like Tramadol which have a significant gap. Some medicines show minimal price differences, suggesting

that these drugs have more stable pricing across PMBJP, NPPA, and market rates and indicating better price control across all segments.
Most substantial price deviation was observed for maximum market price of Mefenamic acid which is 35.90 times the NPPA ceiling price & 37.30 times the Jan Aushadhi price, suggesting its price in open market is significantly higher than both.

DISCUSSION

NPPA ceiling prices aim to regulate drug costs, but few NSAIDs such as Etoricoxib, Nimesulide and Etodolac are not included in the NPPA price cap list (Figure 1)(5). This exclusion allows high market price fluctuations, leading to significant disparities. Even for price-regulated drugs, maximum market prices frequently exceed NPPA limits, indicating the need for stronger enforcement mechanisms in the private sector.
The extreme price index of even basic drugs like Paracetamol (98.00), which is a part of National list pf essential medicines (NLEM) is alarming(12). The NLEM includes essential NSAIDs to ensure affordability and accessibility. However, price discrepancies persist, and some widely used NSAIDs remain outside its scope. Expanding the NLEM and integrating it with stricter price controls could improve affordability.
The Jan Aushadhi scheme offers significantly lower-priced NSAIDs than NPPA-regulated and market rates both, improving access to essential medicines suggesting good policy initiative. However, its limited presence restricts accessibility, particularly in rural and underserved areas. To solve the above problem number of Jan Aushadhi Kendras should be increased in number enhance affordability for a wider population.
Generally Jan Aushadhi prices are the lowest but some minimum market prices match with or even undercut PMBJP rates(4). This suggests competitive pricing can drive down costs, yet maximum market prices remain disproportionately high. If private companies and PMBJP can offer medicines at significantly lower rates, it raises concerns about NPPA ceiling prices remain inflated.
Regular comparative pricing analyses with market-driven models improve NPPA effectiveness in regulating prices. Moreover, NPPA price regulations should be revised more frequently, incorporating real-time market data to ensure alignment with the pricing trends. There should be strict enforcement of the same to prevent high disparities in prices.

CONCLUSION

This study highlights significant price variations among NSAIDs, including prices of some drugs above NPPA limits. The presence of lower minimum market prices suggests competitive pricing, but the inconsistency raises concerns about regulatory enforcement and price control effectiveness.
The findings underscore the need for a more dynamic and stringent regulatory framework to bridge the gap between policy-driven pricing and market realities. Despite a very good initiative by government, wider adoption of PMBJP formulations, coupled with increased awareness among healthcare providers and consumers, could help mitigate unwarranted price disparities. Future research should explore the impact of such pricing variations on patient adherence, clinical outcomes, and the overall economic burden on healthcare systems.

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