Journal of Biomedicine and Biosensors, 6(1):1–6, 2026. DOI: 10.58613/jbb611

Journal of Biomedicine and Biosensors

Journal homepage: https://www.gpub.org/journal-details.php?journal-id=45

Research Article

Evaluation of Availability of Banned Drugs in Tricity Chandigarh

Rachita Sharma [1], Naveen Krishan Goel [2*], Manoj Kumar Sharma [3] and Munesh Kumar Sharma [2]

[1] *MPH Scholar Centre for Public Health Panjab University Chandigarh.*
[2] *Professor Department of Community Medicine GMCH 32 Chandigarh.*
[3] *Chairperson Centre for Public Health Panjab University Chandigarh.*
[*] *Corresponding author: nkg19631963@gmail.com*

Article Info

Keywords: *Banned drugs, Chemist awareness, Public health, Regulatory enforcement, Tricity Chandigarh.*

Received: *22.12.2025;*
Accepted: *25.01.2026;*
Published: *01.02.2026*

Abstract

Background: A drug is any substance that alters the body's normal functioning and has its own adverse effects. If harmful side effects of drugs outweigh the benefits after reaching the market, the government may ban it. However, many drugs banned in other countries continue to be sold in India due to many factors like poverty, self-medication, lack of awareness among Drug Controller General of India doctors and patients, weak regulatory enforcement, and poor communication between the DCGI and state drug authorities. Addressing these issues through stronger regulations and public awareness is essential for promoting safer drug use in the country. In this context the study aimed to evaluate the sales and availability of banned drugs in tricity Chandigarh.

Methods: The study was conducted in tricity (Chandigarh, Mohali, and Panchkula). We surveyed 165 registered chemist shops in tricity by random sampling technique. Data was collected through a self-designed questionnaire administered during operational hours, capturing details about locations, and the availability of specific banned drugs and sales either over the counter or by prescription. The data was systematically recorded and analyzed to identify trends in the availability of banned drugs.

Results: In our study, we surveyed 165 chemists across Chandigarh, Mohali, and Panchkula to assess the availability of banned drugs. Chandigarh had the highest presence, with 42 chemists stocking gatifloxacin and 23 carrying tetracycline. Panchkula showed significant availability of human placenta extract (22 chemists) and amidopyrine (30 chemists), while Mohali had comparatively lower stocks. Alarmingly, 101 chemists dispensed gatifloxacin on prescription, and 35 sold it over the counter. While some drugs were entirely not available, but many remained accessible despite restrictions. These findings underscore the urgent need for stricter enforcement to prevent the circulation of banned medications and to safeguard public health.

Conclusion: The study reveals an urgent need for stricter enforcement of drug regulations in tricity Chandigarh. Despite high awareness levels, gaps in compliance and enforcement allow banned drugs to remain accessible. Strengthened monitoring systems, targeted training for healthcare professionals, and regular public awareness campaigns are essential to curb this public health menace.

1. Introduction

A drug is any substance that can change the normal reactions of the body. There is no exact definition given, it varies and has different meanings in drug control law, government regulations, medicine and colloquial usage. In legal terms a drug is any chemical or synthetic

substance which is used to cure, prevent, or diagnose diseases or to enhance physical or mental well-being. Before being introduced in the market, a drug undergoes rigorous testing. The efficacy as well as the safety profile of a drug are tested. Despite this some adverse effects of drugs are seen only when it is introduced in the general population. These effects are detected through continuous monitoring after the drug is released in the market through pharmacovigilance [1].

When a new drug is introduced to the market, its primary goal is to improve the health of individuals or to improve quality of life. However every drug has some side effect and if the dose of the drug is correct, then it can be avoided. Some side/ adverse effects of one drug can be reduced by another drug. Hence, prescribed medication is safer than self medication [2]. Banned drugs have more adverse/ side effects. If harmful side effects exceed the benefits after being introduced in the market, the government may issue the ban order, and all manufacturers and wholesalers must stop stocking the medicine. The decision to ban a drug is based on the risk versus benefit ratio evaluated through post-marketing surveillance and the Adverse Drug Reaction Reporting System [3]. Some drugs may cause adverse effects only when combined with other drugs, in such cases only the fixed dose combinations are banned. In India the "drug controller general of India" is the highest authority that can approve or ban a drug.

Many drugs that have been banned in other countries are continuing to be sold in India. Sadly India has become a dumping ground for such banned drugs [4]. The most pitiful feature is the use of these drugs is regularly causing long term implications for physical health. The pharmaceutical companies and defaulters are playing disdainfully with the lives of thousands of people who are not aware of harmful effects of these drugs.

There are many factors that are responsible for sales and purchase of banned drugs in India. Some are as poverty, self-medication, unawareness of physicians and patients, laxity of regulatory authorities. If doctors stop prescribing drugs that are harmful to patient health, the chemists will automatically stop selling because of low demand. By doing this much of the problem can be solved to some extent. The majority of analgesics, anti- diarrheal and cough preparations that are banned in other countries are easily assessable in India as over the counter OTC drugs. This is mainly due to the lack of awareness among physicians and patients, poverty, self- medication, high cost and communication gap between DCGI and state drug controller [5]. Absence of a gold standard for a drug safety surveillance system, variations in culture and clinical practice across countries makes it more difficult for India to completely adopt another country's practices. There should be a multidisciplinary approach towards drug safety that should be implemented throughout the entire period spanning from drug discovery to usage by consumers [6].

The Drug Technical Advisory Board (DTAB) has the final say when it comes to banning a drug. The process starts with the formation of an expert committee that reviews evidence on the drug's harmful effects. Their findings are then sent to the DTAB, which decides whether the government should issue a ban. Once a ban order is issued, the Drug Controller General of India (DCGI) informs the State Drug Controllers (SDCs). The SDCs then assign officials to conduct inspections and enforce the ban regularly [7].

The health ministry of India has finalized that if any drug is banned in two or more countries, then it will be banned in India as well [8].

2. Materials and Methods

2.1. Study population

The study population comprised of chemist shops registered in tricity (Chandigarh, Mohali, Panchkula), India. Chemist shops were identified through official records and directories maintained by local regulatory authorities.

2.2. Sample size

The unit of the population was a chemist's shop. Based on the previous publication the prevalence of sub-standard medicine in low- and middle-income countries is 13%. By using 5% margin of error and using the formula, sample size

$$\text{n}= \frac{z^2 \times p \times (1-p)}{e^2}.$$

The calculated sample size is 154 and with 10% non- response rate, 165 registered chemists were interviewed. The method of (non-probability sampling technique) random sampling was adopted.

Inclusion criteria: The study included all the registered chemists in tricity and express their willingness to take part.
Exclusion criteria: Chemists who were not registered and were unwilling to participate in study.

2.3. Study tool

A self-made questionnaire was administered to participants. The questionnaire was divided into two parts. First part contains questions on availability of banned drugs and the later part included questions on awareness related to banned drugs.

All registered chemists in tricity were included in the study. Data was collected on door-to- door basis. The study area included Chandigarh, Mohali and Panchkula.

2.4. Data collection

We visited a chemist shop during operational hours to collect data. A standardized checklist was used to record the availability of banned drugs listed in the schedule of banned substances as per local regulatory guidelines. Data collection included the code for the chemist shop, locality (Chandigarh, Mohali, Panchkula), and the specific banned drugs available.

2.5. Data analysis

The collected data was entered into a spreadsheet for systematic analysis. Descriptive statistics, including frequencies and percentages, were calculated to summarize the availability of each banned drug across tricity. Comparative analysis between Chandigarh, Mohali, and Panchkula was conducted to identify any regional variations in the availability of banned drugs.

3. Results

The data was collected from 165 chemists of Tricity of Chandigarh. The results have been calculated and represented in the form of tables, graphs and pie charts. Table 1 shows the distribution of chemists across the tricity (Chandigarh, Mohali, Panchkula) based on the availability of banned drugs.

Table 1: DISTRIBUTION NUMBERS OF CHEMISTS IN TRICITY ACCORDING TO AVAILABILITY OF BANNED DRUGS (N=165)

S.NO.	DRUGS	CHANDIGARH	MOHALI	PANCHKULA	TOTAL AVAILABILITY	%
1	GATIFLOXACIN	42	22	39	103	62.4
2	HUMAN PLACENTA EXTRACT IN TOPICAL APPLICATION FOR WOUND HEALING AND INFECTION FOR PID	19	13	22	54	32.7
3	AMIDOPYRINE	12	8	30	50	30.3
4	NIMESULIDE FORMATION IN CHILDREN BELOW 12 YEARS	14	18	15	47	28.4
5	PENCILLIN PENCILLIN SKIN/EYE OINTMENT	7	12	17	36	21.8
6	TETRACYCLINE	23	15	7	31	18.7
7	CISAPRIDE	10	6	11	27	16.3
8	PHENYL PROPANOLAMINE	03	0	24	27	16.3
9	METHAQUOLONE	09	11	02	22	13.3
10	ROSIGLITAZONE	06	01	13	20	12.1
11	ASTEMIAZOLE	07	01	11	19	11.5
12	SIBUTRAMINE	05	04	09	18	10.9
13	R-SIBUTRAMINE	01	04	13	18	10.9
14	FANFLURAMINE	01	0	12	13	7.8
15	VALDECOXIB	08	02	02	12	7.2
16	ROFECOXIB	03	02	05	10	6
17	PHENACETIN	0	0	06	06	3.6

Chandigarh showed varying availability across different drugs, with notable availability of gatifloxacin (42 chemist shops), tetracycline (23 chemist shops) and human placenta extract (19 chemist shops) while Mohali showed lower availability compared to Chandigarh and Panchkula, with availability in some drugs like gatifloxacin (22 chemist shops). Panchkula showed substantial availability across several drugs; notably human placenta extract (22 chemist shops) followed by nimesulide formulation for children below 12 years (15 chemists). Amidopyrine was available mostly in Panchkula (30 chemist shops), followed by Chandigarh (12 chemist shops) and Mohali (8 chemist shops), totaling 50 units but phenacetin was available only in Panchkula in 6 chemist shops. Nialamide, dover's powder and tablets, mepacrine, methapyrilene were not available in tricity. Methaqualone was available at Chandigarh (9 chemists), Mohali (11 chemists), and Panchkula (02 chemists), totaling 22 chemists. Practolol, phenformin, dexfenfluramine, rimonabant, tegaserod were available in minimal quantities or not at all across the tricity (each with 01-03 chemists).

Table 2 shows the distribution of chemists across tricity based on availability of prescribed banned drugs. Mohali shows lower availability compared to Chandigarh and Panchkula, with notable instances of tetracycline (15 chemists) and gatifloxacin (22 chemists).Panchkula demonstrates substantial availability across several drugs, particularly human placenta extract (20 chemists) and amidopyrine (22 chemists).amidopyrine was available in Chandigarh (12 chemists), Mohali (08 chemists), and Panchkula (22 chemists), indicating a relatively widespread availability with higher numbers in Panchkula. Phenacetin was found only in Panchkula (06 chemists), not available in Chandigarh or Mohali. Nialamide, dover's powder and tablets, mepacrine, methapyrilene were not available in any of the three cities. Methaqualone was available in varying quantities across the cities: Chandigarh (9 chemists), Mohali (11 chemists), and Panchkula (02 chemists).tetracycline was widely available, particularly in Chandigarh (23 chemists) and Mohali (15 chemists), with fewer instances in Panchkula. Human placenta extract in topical application for wound healing and infection for PID was highly available across all cities, with Chandigarh (19 chemists), Mohali (13 chemists), and Panchkula (20 chemists) showing significant numbers.

Over the counter banned drugs. Chandigarh shows varied availability across different drugs, with notable example of penicillin skin/eye ointment (02 chemists) and gatifloxacin (12 chemists) available OTC. Mohali had generally lower availability compared to Chandigarh and Panchkula, with notable availability of methaqualone (07 chemists) and some drugs like penicillin skin/eye ointment (10 chemists). Panchkula demonstrates substantial availability across several drugs, particularly penicillin skin/eye ointment (12 chemists) and gatifloxacin (23 chemists) available OTC. Amidopyrine was available OTC in varying quantities across all three cities, with the highest availability in

Table 2: DISTRIBUTION OF CHEMISTS IN TRICITY ACCORDING TO ON PRESCRIPTION AVALABILITY OF BANNED DRUGS (N=165)

S.NO.	DRUGS	CHANDIGARH	MOHALI	PANCHKULA	TOTAL AVAILABILITY	%
1	GATIFLOXACIN	42	22	37	101	61.2
2	HUMAN PLACENTA EXTRACT IN TOPICAL APPLICATION FOR WOUND HEALING AND INFECTION FOR PID	19	13	20	52	31.5
3	NIMESULIDE FORMATION IN CHILDREN BELOW 12 YEARS	14	18	12	44	26.6
4	TETRACYCLINE	23	15	05	43	26.0
5	AMIDOPYRINE	12	08	22	42	25.4
6	PENCILLIN SKIN/EYE OINTMENT	07	12	17	36	21.8
7	CISAPRIDE	10	06	11	27	16.4
8	PHENYL PROPANOLAMINE	03	0	24	27	16.4
9	ROSIGLITAZONE	06	01	13	20	12.1
10	METHAQUOLONE	09	11	02	22	13.3
11	R-SIBUTRAMINE	01	04	13	18	10.9
12	ASTEMIAZOLE	06	01	11	18	10.9
13	SIBUTRAMINE	05	04	09	18	10.9
14	FANFLURAMINE	01	0	12	13	7.8
15	VALDECOXIB	08	02	02	12	7.2
16	ROFECOXIB	03	02	05	10	6
17	PHENACETIN	0	0	06	06	3.6

Panchkula (12 chemists), followed by Mohali (06 chemists) and Chandigarh (03 chemists).phenacetin, nialamide, practolol, chloral hydrate, dover's powder and tablets, mepacrine, dexfenfluramine, terfenadine, astemizole, phenformin, rosiglitazone, sibutramine, r-sibutramine, tegaserod, methapyrilene, rimonabant were not available OTC in any of the three cities (0 chemists). Methaquolone was available only in Mohali (7 chemists) OTC, not in Chandigarh or Panchkula. Penicillin skin/eye ointment was available in Chandigarh (02 chemists), Mohali (10 chemists), and Panchkula (12 chemists) OTC, indicating significant availability in all three cities. Tetracycline was available in Chandigarh (4 chemists) and Panchkula (3 chemists) OTC, not in Mohali. Chloroform exceeding 0.5% was available in Chandigarh (2 chemists) and Mohali (1 chemist) OTC, not in Panchkula. Fenfluramine was available in Panchkula (2) OTC, not in Chandigarh or Mohali. Rofecoxib, valdecoxib, cisapride, phenyl propanolamine, human placenta extract in topical application for wound healing and infection for PID was available in limited quantities OTC across the cities. Nimesulide formulation in children below 12 years was available in Chandigarh (08 chemists) and Panchkula (12 chemists) OTC, not in Mohali. Gatifloxacin was available in Chandigarh (12 chemists) and Panchkula (23 chemists) OTC, not in Mohali.

4. Discussion

The availability and distribution of banned drugs remain a critical issue in healthcare systems worldwide, impacting patient safety and regulatory compliance. This study aimed to evaluate the availability of banned drugs across Chandigarh, Mohali, and Panchkula—collectively known as Tricity-in Northern India. The study assessed both the overall availability of banned drugs and their availability through prescription. The objectives of the study were to quantify how much prevalent banned drugs were available across different regions within Tricity. The study also focused on understanding whether banned drugs were being dispensed under medical prescriptions, potentially indicating issues with regulatory enforcement or medical practices.

In present study a survey was carried out on 165 chemists across Chandigarh, Mohali, and Panchkula. Data collection was done regarding the availability of specific banned drugs both in their stock and drug/medicine provided prescription. The results highlight several glaring findings regarding the availability of banned drugs in Tricity Chandigarh. We found several banned drugs like Gatifloxacin, Human Placenta Extract, and Amidopyrine were widely available across Tricity. This indicates potential lapses in regulatory enforcement or challenges in ensuring compliance among chemists. It was opined by chemists a significant number of banned drugs were dispensed by physicians on prescriptions,which could not be verified. It suggests that many healthcare providers were not aware regarding banned drugs. It means their knowledge was not up to date.

Shaji and Lodha's study [8] on the regulatory status of banned drugs in India revealed glaring findings regarding public and professional awareness. They identify Phenylpropanamine was the most rapidly selling banned drug. Moreover, their survey on awareness among laymen, pharmacists, students, and doctors indicated alarming levels of unawareness, with 75% of laymen, 40% of healthcare professionals, and 60% of science students were unaware of banned drugs. They emphasized the critical need for enhanced regulatory education and enforcement to curb the circulation and misuse of banned substances effectively across the country.

Our study in Tricity Chandigarh also focused on assessing banned drug availability and prescription practices in 165 pharmacies, highlighting widespread access to drugs like Gatifloxacin and Human Placenta Extract. It underscored local regulatory gaps and potential misuse issues. In contrast above mentioned [8], the regulatory status study on banned drugs in India reviewed national legal frameworks and public awareness which revealed significant gaps in understanding and enforcement of regulatory guidelines regarding banned drugs among laymen, pharmacists, doctors, as well as students by concerned authorities. While the present study provided insights "regarding" the regulatory status in Tricity Chandigarh perhaps offers a broader perspective on national policies. It may also guide for further improving

Table 3: DISTRIBUTION OF CHEMISTS IN TRICITY ACCORDING TO OVER-THE-COUNTER AVALABILITY OF BANNED DRUGS (N=165)

S.NO.	DRUGS	CHANDIGARH	MOHALI	PANCHKULA	TOTAL AVAILABILITY	%
1	GATIFLOXACIN	12	0	23	35	21.2
2	PENCILLIN SKIN/EYE OINTMENT	02	10	12	24	14.5
3	NIMESULIDE FORMATION IN CHILDREN BELOW 12 YEARS	08	0	12	20	12.1
4	AMIDOPYRINE	03	06	12	21	12.7
5	METHAQUOLONE	0	07	0	07	4.2
6	TETRACYCLINE	04	0	03	07	4.2
7	PHENYL PROPANOLAMINE	0	0	07	07	4.2
8	HUMAN PLACENTA EXTRACT IN TOPICAL APPLICATION FOR WOUND HEALING AND INFECTION FOR PID	06	0	0	06	3.6
9	CHLOROFORM EXCEEDING 0.5%	02	01	0	03	1.8
10	ASTEMIAZOLE	03	0	0	03	1.8
11	ROFECOXIB	0	02	01	03	1.8
12	FANFLURAMINE	0	0	02	02	1.2
13	VALDECOXIB	0	02	0	02	1.2
14	CISAPRIDE	0	0	02	02	1.2
15	R-SIBUTRAMINE	0	01	0	01	0.6

regulatory oversight and advocate educating the public to combat the menace of banned drug availability, circulation and misuse effectively.

The study by Biyani et al. [9] highlights a critical issue regarding the availability of banned drugs, as evidenced by their case report. Their finding underscores a significant challenge in regulatory enforcement and public health. The availability of banned drugs poses substantial risks to patient safety and public health due to potential misuse, adverse effects, and legal implications. Addressing this issue requires rigorous monitoring, stringent regulatory measures, and collaborative efforts among healthcare professionals, regulatory bodies, and policymakers to prevent unauthorized access and ensure adherence to drug safety protocols.

In contrast to the above-mentioned study [9] the present study aimed to assess the availability of banned drugs across different regions within the Tricity. While both studies addressed the critical issue of banned drug availability, Biyani et al. [9] case report provides in-depth qualitative insights into a particular instance, potentially offering detailed clinical and regulatory perspectives while our study utilizes quantitative data to analyse availability of banned drugs across Tricity, offering a comprehensive overview that highlight lack/gap in regional regulatory measures and enforcement strategies.

5. Conclusion

Our study found that several banned drugs were available in Tricity Chandigarh. Therefore, it underscores the need for enhanced regulatory measures and increased awareness among healthcare professionals regarding the misuse of banned drugs. Efforts should focus on stricter enforcement of regulations, continuous monitoring of pharmacy practices, and education campaigns to prevent the inadvertent prescription as well as use of banned drugs /medicine. Addressing these issues is also crucial for safeguarding the health of the community and ensuring the integrity of healthcare practices in Tricity Chandigarh. Future research could explore the root causes behind these availability patterns and evaluate the effectiveness of interventions aimed at reducing the availability of banned drugs.

For future studies it is recommended that efforts should focus on stricter enforcement of regulations, continuous monitoring of pharmacy practices, and education campaigns to prevent the inadvertent prescription as well as use of banned drugs /medicine.

The present study is not without limitations. Due to lack of time, we could not explore the root cause behind the availability of banned drugs. We could not interview physicians regarding the prescription pattern of banned drugs in Tricity of Chandigarh.

Article Information

Disclaimer (Artificial Intelligence): The author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.), and text-to-image generators have been used during writing or editing of manuscripts.

Competing Interests: Authors have declared that no competing interests exist.

References

[1] M. Gupta, A. Ghom, F. M. Debta, S. Vyas, A. Deoghare, P. Gupta, et al. Banned drugs: Still available in India. *Journal of Indian Academy of Oral Medicine and Radiology*, 23(Supplement 3), 2011. URL https://www.researchgate.net/publication/273980781_Banned_Drugs_Still_Available_in_India. Accessed: 8 Aug 2025.

[2] D. Sunitha, K. Hemalatha, and M. Sudhakar. Banned Drugs: A Review. *Asian Journal of Pharmaceutical Research*, 6(4):205–216, December 2016. URL https://asianjpr.com/AbstractView.aspx?PID=2016-6-4-1. Accessed: 11 Aug 2025.

[3] Ghodake Vaishnavi S, Sachin Hangargekar, D Yelkot Priyanka, A Gaurav Mohini, N Siddique Ayesha, and Madhav Honrao et al. A Review on Banned Drugs. *Asian Journal of Pharmaceutical Research and Development.*, 11(6):31–35, August 2023.

[4] REGULATORY CONTROL ON BANNED DRUG: A REVIEW ARTICLE, August 2025. URL https://www.pharmatutor.org/articles/regulatory-control-banned-drug-review-article.

[5] M. D. Kengar, Jagtap Gbvam, A. S. Gavade, and M. M. Nitalikar. A Study on Banned Drugs in India: A Review. *Asian Journal of Research in Pharmaceutical Sciences*, 8(4):258–260, August 2018. URL https://ajpsonline.com/AbstractView.aspx?PID=2018-8-4-13.

[6] A. Ahmad, I. Patel, S. Sanyal, R. Balkrishnan, and G. P. Mohanta. A Study on Drug Safety Monitoring Program in India. *Indian J Pharm Sci. [cited*, 76(5):379, August 2014. URL https://pmc.ncbi.nlm.nih.gov/articles/PMC4243254/.

[7] R. Sangeetha, K. S. Charan, B. Santana, M. Kumari, P. Murali, and Priya Gh. Drugs banned in other countries, still prevailing in India, a vital matter of concern—A narrative review. *J Dr NTR Univ Health Sci*, 11(4):259, 2022.

[8] J. Shaji and S. Lodha. Regulatory Status of Banned Drugs in India. *Indian Journal of Pharmaceutical Education and Research*, 44(1): 86–94, 2010.

[9] Md Jakaria, Md Ibrahim Tarek, Abul Hasanat, A. T. M. Mostafa Kamal, Mohammed Abu Sayeed, and Md. Hazrat Ali. Banned Drugs Still Available in Bangladesh after the Declaration of the Regulatory Authority: A Cross Sectional Study Conducted in Chittagong City. *International Journal of Public Health Research*, 3(3):83–87, 2022. URL https://www.researchgate.net/publication/278849079_Banned_Drugs_Still_Available_in_Bangladesh_after_the_Declaration_of_the_Regulatory_Authority_A_Cross_Sectional_Study_Conducted_in_Chittagong_City.