

Availability of the Essential Medicines in Community Pharmacies: A Cross-Sectional Study

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World Health Organization (WHO) defines essential drugs or medicines as “those drugs that satisfy the healthcare needs of majority of the population; they should therefore be available at all times in adequate amounts and in appropriate dosage forms, at a price the community can afford.”¹ Since 1975, the WHO has taken over its role on the essential drugs, which was initially a mere concept to a well-established policy.² In the year 1977, the WHO decided to make this concept more concrete, and thus prepared and published a model list of essential drugs which had around 200 drugs including the vaccines.³ The WHO model of the essential medicine list (EML) thus came into force in 1977 and is being updated every two years since then.⁴ The current version of the list is in its 21st edition, and the essential medicine list for children is in its seventh edition which was last updated in the month of June in the year 2019.⁵ In the case of India, the first EML was published in 1996.³ The latest list was published in 2015 with 376 drugs.⁶ Many states also have their respective EML. Rajasthan is one among the many states having their EML. The current EML for the state of Rajasthan was published in the year 2019 which comprises 608 drugs.⁷ Looking at the importance of EML for patient care, it is important to ascertain that these drugs are available easily at community pharmacies at affordable cost.

As per the various previous published studies, many drugs from EML are not available in community and hospital pharmacies.^{8–11} A study done by Rathish et al.⁸ in a rural Sri Lankan district found out that there was a discrepancy in the availability of essential medicines among the base hospitals and central dispensary. It was also noted that the availability of drugs for different clinical conditions also varied considerably.⁸ Another study done by Chandani et al.⁹ in Ethiopia, Malawi, and Rwanda stated that the availability of drugs was much fragile in different countries.⁹ Tripathi et al.¹⁰ conducted a study in the state of Chhattisgarh, India, and found out that about 58% of the prescribed medicines were

found to be available, and by improving certain factors like the state financial resources, supply chain, and encouraging physicians in prescribing these drugs would certainly lead to the improvement in their overall availability.¹⁰ The drugs from the EML should not only be easily available but also be obtainable at an affordable price. A study was done by Faruqui et al.¹¹ in New Delhi, India, on the availability of drugs for chronic illnesses found out that the mean availability did not meet the 80% criteria as proposed by the WHO over all facilities.¹¹

It is very clear that there is an unavailability of robust data related to the availability of different medicines from the EML. This data is very important to know the current status of the availability of essential medicines, and would also prove to be useful in policy-making decisions. Hence, this study was conducted with the aim to assess the availability of essential medicines from central and state lists of essential medicines in community pharmacies.

This study was a cross-sectional survey. It was conducted in the community, where private pharmacies were approached with the list of essential medicines (both central and state) and the availability of these medicines were asked. These pharmacies were located near the government and private hospitals. Pharmacies attached to any specific hospitals and government-backed generic drug stores were not included in the study. This study was approved by the

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Institutional Ethics Committee (AIIMS/IEC/2020/3350). Informed consent was obtained from the owner/pharmacist who provided the information regarding the availability of the medicines at his/her pharmacy. Three government and eight private hospitals were considered to be the survey points, and pharmacies located near to these hospitals were considered to be sampling frames. As no list of these pharmacies were available, each approached the pharmacy willing to participate was included till a feasible sample of 100 pharmacies was saturated. Pharmacists were explained about the study objectives and willingness to participate was sought. The latest version of the national essential medicine list of India (NLEM, 2015) and the essential medicine list of the state of Rajasthan from 2018 to 2019 was used for this study.^{6,7} The central list has 376 medicines and state EML has 608 medicines. There is a large overlap of medicines between both the lists. After considering the overlap, a list of unique 804 medicines was prepared and pharmacists/owners of the pharmacy were approached with this list and asked about the availability of these medicines. This study was done based on data collected from 100 community pharmacies. Descriptive statistics were reported in the form of frequencies, percentages, mean, standard deviation, and range.

Out of all the drugs from the central EML, 83.6% were available, and from Rajasthan EML 72.3% of drugs were available. Of all the anesthetics in the central EML, 56% of drugs were available and 12% showed partial availability. Anti-infective drugs showed 72% availability and 1.4% of them were found to be partially available. Antineoplastic showed 97.2% and 2.8% of availability and partially

availability, respectively. Miscellaneous drugs also showed the availability of 46.1% and partial availability of 7.7%. Analgesics, antidotes and other substances, antiepileptics, antimigraine, anti-Parkinson, diuretics, GIT drugs, vitamins, and minerals were available on all pharmacies (Table 1).

Of all the categories of drugs in Rajasthan EML, anti-infective drugs showed the availability of 36.2%, and 1.6% of drugs were found to be partially available. For antiallergic drugs, 75% were available and 10% were partially available. Miscellaneous drugs showed 15.8% and 5.2% of availability and partial availability, respectively (Table 2).

This study was designed with the aim of evaluating the availability of the drugs from the essential medicine list of India and Rajasthan in the pharmacies. It was found that the majority of the drugs of the essential drug list were available in these pharmacies. As per the WHO, availability of >80% of essential medicines is considered to be adequate and good and this was fulfilled for the majority of drug categories in our study.¹² In many such studies available for public health facilities, the availability of drugs from the EML was found to be suboptimal but adequate in the case of private facilities.^{13,14}

Table 1. Percent Availability of Drugs in Central EML

Drug Categories	Available (%)	Partially Available (%)
Anesthetics	56	12
Analgesics	100	0
Antiallergic	100	0
Antidotes and other substances	100	0
Antiepileptics	100	0
Anti-infective	72	1.4
Antimigraine	100	0
Antineoplastic	97.2	2.8
Antiparkinson	100	0
Affecting blood	81.2	0
Cardiovascular	87	0
Diagnostic agents	80	0
Dialysis agent	0	0
Disinfectants	85.8	0
Diuretics	100	0
GIT drugs	100	0
Vitamins and minerals	100	0
Miscellaneous	46.1	7.7

Table 2. Percent Availability of Drugs in Rajasthan EML

Drug Categories	Available (%)	Partially Available (%)
Anaesthetics	60	0
Analgesics	85.8	0
Antiallergic	75	10
Antiepileptics	84	0
Anti-infective	36.2	1.7
Antineoplastic	100	0
Anti-Parkinson	100	0
Affecting blood	48.3	0
Cardiovascular	87.2	0
Dental drugs	100	0
Dermatological drugs	100	0
Diagnostics	27.2	0
Disinfectants and antiseptics	64.2	0
Diuretics	100	0
Drugs for ear ailments	100	0
GIT drugs	100	0
Endocrine drugs and hormones	85.8	0
Immunologicals	0	0
Neuromuscular blockers and cholinesterase inhibitors	54.9	0
Drugs acting on uterus	38.4	0
Urology drugs	100	0
Vitamins and minerals	100	0
Miscellaneous	15.8	5.2

Although the availability of essential medicine is more in the private sector as compared to the public sector, as per the data generated from other studies, many drugs available in a single brand, which is the most popular brand, are usually costly and heavily prescribed.¹⁵ In this study, it was also found that a few of the drugs were available in only a single brand. In a study done by Millard C et al. (2018) where all the brands of six important medicines from the essential drugs list were assessed for availability and it was found that the majority of the brands are not available and around 70% of these brands have zero sale.¹⁶ This reiterates the fact that only a few, heavily prescribed, market force influenced brands of the essential drugs are available in private pharmacies and that not all brands are available. Good availability of essential medicine in pharmacies and less availability in public health system encourage the movement of patients from the public health system to private pharmacies, as only a few high-cost brands are available for these drugs in private pharmacies. It increases the cost of treatment and hence the out-of-pocket expenditure. Pharmacies need to be encouraged to keep all brands of the available drugs including low-cost brands also.

This study has some limitations. This study is based on purposive sampling; based on fixed number of community pharmacies this may lead to some issue of generalization of the results. As we wanted to focus on all drugs from the central and essential medicine list, it was not feasible to cover more pharmacies. In contrary to the WHO method of doing such studies where information about only 30 drugs is asked to ascertain the availability of essential medicines, we asked for all drugs and that too from both the lists which is the strength of this study.

Based on the results obtained from this study it can be concluded that there is adequate availability of essential medicines from both lists in the private community pharmacies. It is important to explore how many brands or brand generic of these medicines were available and the affordability of these medicine in future studies.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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