Assessment of patient care and health facility indicators among urban and rural private practitioners in Kancheepuram district of Tamil Nadu, India.

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**ABSTRACT**

**Objectives:** To assess the patient care and health facility indicators among the private medical practitioners in the rural and urban areas of Kancheepuram district in Tamil Nadu. **Materials and methods:** A comparative cross-sectional study was conducted among 20 private practitioners, 10 from urban and 10 from rural catchment areas of the training centres of a medical college in Kancheepuram district of Tamil Nadu. WHO core drug use indicators questionnaire was used for the assessment which comprises of 5 patient care indicators and 2 facility indicators. Thirty exit interviews from patients in each practitioner’s clinic were carried out to assess the quality of the services rendered. **Results:** The study revealed that average consulting time was 4 minutes, average dispensing time was 2.19 minutes, percentage of drugs actually dispensed was 43% and all the drugs dispensed was adequately labelled, only 22% percentage of patients had knowledge of correct dosage of drugs, the copy of essential drugs lists was not available in any facility and about 73% of the key drugs were available in the health facilities. The average time spent by a patient in the health facility was 18.39 minutes and 93% of the patients expressed satisfaction over the services they received. **Conclusion:** The study outcome reflects irrational patient care practices among private practitioners in both urban and rural areas. Even though the concept of essential drugs and the benefits of rational use of medicines are being popularized in the country, the importance of these was not recognized by the doctors and the pharmacists.

**Key words:** Health facility, Patient care, Primary care, Private practitioners, Rational use of drugs

**Introduction**

An efficient Health Care Delivery system is a pre-requisite to achieve “Better Health for All” in the 21st century. The quality of service in health means an inexpensive type of service with minimum side effects that can cure or relieve the health problems of the patients. Appropriate treatment of commonly occurring diseases and injuries and the provision of essential drugs are the two vital components of the primary health care concept as per the Alma-Ata declaration of 1978. Essential drugs offer a cost-effective solution to many health problems in a developing country. They should be selected with due regard to the disease prevalence, be affordable, with assured quality and available in the appropriate dosage forms. Essential drugs are required for the management of 90% of commonly occurring medical...
conditions in the area. It is found that there are more than 60,000 drug formulations available in the Indian drug market. But 90% of the commonly prevalent diseases can be treated with about 10% of the drugs available in the market. There are many medical, economical, social and administrative advantages over the concept of essential drugs.

It is well documented that safe and effective drug therapy is possible only when patients are well informed about the medications and their use. Essential drugs should be used only when it is really needed. Rational use of drugs means reasonable or sensible use of drugs. Rational use of drugs is defined as appropriate use of drugs, when it is really needed, in appropriate strength, dosage and duration which will have a beneficial effect on the individual. The five important criteria for rational drug use are accurate diagnosis, proper prescribing, correct dispensing, suitable packing and patient adherence. The prescribers should make an accurate diagnosis and prescribe rationally and the pharmacist should ensure that effective form of the drug reaches the right patient in prescribed dosage and quantity, with clear instructions on its appropriate use.

Bad Prescription Practices leads to ineffective and unsafe treatment, exacerbation or prolongation of illness, distress and harm to the patient and higher costs. Worldwide more than 50% of all medicines are prescribed, dispensed, or sold inappropriately, while 50% of patients fail to take them correctly. Lack of access to medicines and inappropriate doses result in serious morbidity and mortality.

Studying the drug use pattern including the patient care and health facility aspect of the health centres in relation to the rational use of drugs concept among the private practitioners is of vital importance in the present scenario where irrational drug use is rampant. So far the impact and effects of the drug use pattern practiced in the catchment areas around the urban and rural health training centres in the Kattankulathur block in Tamil Nadu is not evaluated.

Materials and Methods

This comparative cross-sectional study was conducted among private practitioners in Kancheepuram district of Tamilnadu in and around the rural and urban health training centres of SRM Medical College Hospital & Research Centre. The study was conducted among 20 private practitioners [10 from urban and 10 from rural] identified in the catchment area of training centres over a period of three months. WHO core drug use indicators questionnaire was used to assess the drug use pattern among the private practitioners which comprises of 7 indicators in 2 parts (Patient Care and Facility indicators). The practitioners were identified and prior informed consent was obtained after explaining the aims and objectives of the study. Thirty exit interviews from patients in each practitioner’s clinic were included in the study. Data thus collected was tabulated and appropriate statistical analysis was done to demonstrate the findings.

Results

Following observations were made during the study to describe about the drug use patterns and the indicators in explaining the quality of service rendered by them. WHO manual of drug use indicators was used to calculate the patient care and health facility indicators. Exit interviews were conducted to calculate the patient care indicators and the observations were tabulated in table 1.

It was observed that urban practitioners spent more time (5.7 minutes) than the rural practitioners (2.3 minutes) with the patients during the consultation. In the pharmacy attached with their clinic, the average time taken to dispense drugs were seen to be more in rural than urban practitioners, however overall the average time taken to dispense drugs was found to be 2.19 minutes. In both urban and rural private
practitioners clinics all the drugs were adequately labelled and dispensed in strips/blister packs. It was seen that only 28% of the urban and 16.4% of the rural private practitioner’s patients were having the knowledge of the correct dosage of the drugs given to them.

Table 1. Distribution of the Core drug use indicators based on the patient care and health facility indicators of the private practitioners

<table>
<thead>
<tr>
<th>Core Indicators</th>
<th>Indicators</th>
<th>Urban Practitioner Clinic</th>
<th>Rural Practitioner Clinic</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Care Indicators</td>
<td>Average consulting time (in minutes)</td>
<td>5.7</td>
<td>2.3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Average dispensing time (in minutes)</td>
<td>2.03</td>
<td>2.33</td>
<td>2.19</td>
</tr>
<tr>
<td></td>
<td>Percentage of drugs actually dispensed</td>
<td>44%</td>
<td>42%</td>
<td>43%</td>
</tr>
<tr>
<td></td>
<td>Percentage of drugs adequately labelled</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>Percentage knowledge of correct dosage</td>
<td>28%</td>
<td>16.4%</td>
<td>22%</td>
</tr>
</tbody>
</table>

On assessing the health facility indicators, it is seen from the table 1 that essential drug list was not available in both urban and rural private practitioners and nearly 71% and 74% of the essential drugs were available among both rural and urban private practitioners pharmacy.

Table -2 Numbers of visits by patients to health facility for the same illness

<table>
<thead>
<tr>
<th>N o</th>
<th>No. of visit (Last 6 Months)</th>
<th>Urban practitioners No</th>
<th>Rural practitioners No</th>
<th>Overall No</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Once</td>
<td>140</td>
<td>100</td>
<td>240</td>
<td>40.00</td>
</tr>
<tr>
<td>2</td>
<td>Twice</td>
<td>51</td>
<td>60</td>
<td>111</td>
<td>18.50</td>
</tr>
<tr>
<td>3</td>
<td>Thrice</td>
<td>60</td>
<td>30</td>
<td>90</td>
<td>14.83</td>
</tr>
<tr>
<td>4</td>
<td>More than 3</td>
<td>49</td>
<td>90</td>
<td>139</td>
<td>22.83</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>300</td>
<td>300</td>
<td>600</td>
<td>100</td>
</tr>
</tbody>
</table>

The table 2 shows the frequency of visits to the health facility by the patients in the past six months. In the urban health centre’s 46.6% were first time visitors while it is 33.33% in the rural health centre. On average 18.50 % patients visited twice and 18.33% thrice a week and 23.17% visited the health centre more than three times for the same illness. This study also revealed the fact that the prescription counseling by the doctors regarding the illness or the dosage, administration, frequency of the drug intake and their side effects were not at all done both in the urban and rural health centres by the private practitioners. The pharmacists give instructions regarding the mode of administration and the frequency of the drug intake to the patients to an extent.

Table 3: Patients response to quality of services rendered in Health facility

<table>
<thead>
<tr>
<th>N o</th>
<th>Response</th>
<th>Urban No.</th>
<th>Rural No.</th>
<th>Total No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Good</td>
<td>170</td>
<td>117</td>
<td>287</td>
<td>47.78</td>
</tr>
<tr>
<td>2</td>
<td>Satisfactory</td>
<td>120</td>
<td>153</td>
<td>273</td>
<td>45.56</td>
</tr>
<tr>
<td>3</td>
<td>Unsatisfactory</td>
<td>10</td>
<td>30</td>
<td>40</td>
<td>6.66</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>300</td>
<td>300</td>
<td>600</td>
<td>100</td>
</tr>
</tbody>
</table>

Nearly 56.66% of the patients visiting the Urban health facility and 38.89% of the patients visiting the rural facility felt that the services rendered by them was very satisfactory, while40% visiting the urban and 51.11% visiting the rural facility felt the services rendered were satisfactory and about 3.34% urban and 10% rural patients felt the services rendered were unsatisfactory. (Table 3) Thus an overall 93%
of the patients attending the urban and rural health facilities expressed satisfaction positively over the services they received. [Combining the very satisfactory and satisfactory responses together]

**Table -4 Average times spent in the health facility**

<table>
<thead>
<tr>
<th>No</th>
<th>Location</th>
<th>Urban [minutes]</th>
<th>Rural [minutes]</th>
<th>Average [minutes]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>At OP Counter</td>
<td>2.93</td>
<td>7.66</td>
<td>5.30</td>
</tr>
<tr>
<td>2</td>
<td>Outside Doctor’s Room</td>
<td>5.10</td>
<td>8.70</td>
<td>6.90</td>
</tr>
<tr>
<td>3</td>
<td>With the doctor</td>
<td>5.70</td>
<td>2.33</td>
<td>4.00</td>
</tr>
<tr>
<td>4</td>
<td>At the Pharmacy</td>
<td>2.03</td>
<td>2.33</td>
<td>2.18</td>
</tr>
<tr>
<td></td>
<td>Average times spent in the health facility</td>
<td>15.76</td>
<td>21.02</td>
<td>18.39</td>
</tr>
</tbody>
</table>

The patients spent an average of 15.76 minutes to get treatment in the urban health centres while the time spent in the rural health centres was 21 minute. The urban health centre doctors spent an average of 5.7 minutes with their patients while the rural health centre doctors spent only 2.33 minutes with their patients. (Table 4)

**Discussion**

The main objective of the present study using the standard World Health Organization core drug use indicators was to find out the rational use of medicines based on the current patient care indicator and health facility indicators among the urban and rural private practitioners in the field practice area of SRM Medical College Hospital & Research Centre, in Kancheepuram district of Tamil Nadu.

In this study, the average consulting time was found to be 4 minutes [Rural 2.3 and Urban 5.7 minutes]. In a study in South Ethiopia, the average consultation time in facilities was 6.14 minute, which was almost similar with the study conducted in North West of Ethiopia which was 5.8 minute. In another study conducted in Niger it was 5.75 minutes and in Jordan it was 3.90 minutes. This results is not in accordance with other studies conducted in six European countries where the average consultation time was estimated to be 10.7 minutes and in United Arab Emirates it was 10 minutes but it was shorter in another study conducted in Jordan (3.9 minutes), During the consultation, the physician has to make a complete patient evaluation, select the appropriate medications, and enable for proper patient- physicians interaction The consultation time is too short to enable physicians to communicate with their patients regarding their therapy and illness.

The average dispensing time in this study was found to be 1.4 minutes [Rural 1.7 and Urban 1.1 minutes]. In the South Ethiopia study, the average dispensing time was 1.28 minutes, while in North West of Ethiopia it was 1.9 minute. In the study conducted in Niger it was 3.25 minutes on an average and in Jordan it was 28.80 seconds(0.48 minutes). A descriptive study in UAE observed an average dispensing time of 68 seconds (1.1 minute) and in Sharjah it was 89 seconds, i.e. 1.5 min. A study conducted in Nepal observed 52 seconds (0.9 min) as the average dispensing time which was longer than another study conducted in India which is 14.1 seconds i.e. 0.2 min. The dispensing time observed in these studies is found to be very low. A pharmacist can hardly explain about the dosage regimen, any side effect of drug therapy and precautions to be taken along with appropriate labelling of envelope in such a short period of time. As per the WHO recommendation the pharmacist should spend at least 3 minutes in orienting each patient which was found to be lacking in our study. This study shows that the average percentage of drugs, which were adequately labelled, was 100% both in the rural and urban areas since they are supplied in strips and blister packs. This in turn means that most patients know which drug they were taking for their illness. The percentage of correctly labelled prescriptions in a study by Otoom S et al was 91.4%, and in some instances as high as 100%. Bounxou Keohavong et al revealed that 67% of dispensed drugs were adequately labelled. A study conducted in Islamic republic of Iran showed that 60% of the drugs were adequately labelled. A study in Southwest Ethiopia also revealed that 70.05% of dispensed drugs were adequately
labelled. A similar study conducted in India showed that the adequate labeling was only 18.5% while in another study 43.8% of dispensed products were inadequately labelled. Providing adequate information to patients about their drugs is an essential principle of rational pharmacotherapy, since a patient’s level of knowledge about his/her medication is highly associated with a favourable outcome of the therapy. Inadequate labelling may not only result in poor information on drug use but also in poor compliance.

Dispensing is the end point of contact between pharmacist and patient or the patient's attendant. At this point it is the duty and responsibility of pharmacist to provide adequate information on proper use of drug. In this study the average percentage of patients with correct knowledge of dosage, time period or duration for taking the medicines was, found to be 22% [rural 16.4% and urban 28%]. A prospective cross-sectional descriptive study in a teaching hospital, Western Nepal, the patient's knowledge on correct drug dosage was found to be 81%. Similar study revealed 52.8% in Chennai, India, 55% in Cambodia, 70% in Brazil and 80.8% in paediatric patients in India. In South 24 Parganas district of West Bengal, 64.5% of the patients knew the correct mode of use of dispensed drugs.

In this study availability of key essential drugs was found to be nearly 73% (74% and 71% in urban and rural private practitioner’s pharmacy respectively.). An average of 80% of key drugs was available at PHC’s in a drug use study in Jordan while it was 82.6% in a study done the Gaza Strip, Palestine. In the outpatient paediatric department in Mumbai, the availability of key drugs was found to be 85%. This study also quotes a figure of 86.6% availability of key drugs from Cambodia, a lower figure of 54% from Bangladesh, and an optimal figure of 100% from Ethiopia. Another study conducted in West Bengal shows that the proportion of prescribed drugs (45.7%) included in the WHO model list of essential drugs fell short of the 50% level.

It was also observed in this study that the average percentage of drugs actually dispensed based on the prescription were 43% [42% in the rural area and 44% in the urban area] even though it is desirable to dispense all the drugs prescribed. A study in Mumbai in paediatric OPD revealed that 76.9% of prescribed drugs were dispensed, which is higher than figures reported in other Indian studies but lower than those from Burkina Faso, Cambodia, and Ethiopia (82% to 100%). In the West Bengal study, all the prescribed drugs were supplied [dispensed] for only 11.6% of prescriptions.

The copy of essential drugs lists [EDL] was not availability at both urban and rural areas health centres. This has been the scenario in most of the other studies conducted in India and elsewhere. But a study conducted in six medical college hospitals in North India showed that 28.6% of the doctors interviewed had a copy of the EDL which was also available at their hospitals. Regarding the numbers of visits by patients to health facility in the past six months for the same illness, it was mainly for getting medical assistance for their chronic illnesses. Not much detailed data was available to go into details of this repeat visit to the health facility.

Patient’s response to quality of services rendered in Health facility shows that overall 93% of the patients attending the urban (96.6%) and rural (90%) health facilities expressed satisfaction over the services they received. A study comparing patient satisfaction with primary health care services in two health districts in Egypt showed that the overall satisfaction of the patients regarding the health care services provided at primary health care level was about 98% in both study sites. The same study also quoted other studies which also reported a satisfaction rate of 95.9% for patients attending the outpatient clinics of university hospitals and an overall satisfaction rate of 90.5% among patients attending rural health units. In another study in India the overall satisfaction of the patient’s attending primary care centres in Lucknow district was found
to be 60%.[25] But Only less than half of the patients expressed satisfaction with their visit to health facility in different healthcare services of West Bengal.[26]

In this study the average time spent in the health facility by a patient is 18.39 minutes [urban health facility 15.76 minutes, rural health facility 21.02 minutes]. A cross-sectional study conducted in twenty-one hospitals in Malaysia shows that the average contact time increases from small hospitals (8 minutes) to bigger hospitals (15 minutes). The contact time also varies between the clinics of various disciplines. This might be due to the fact that in smaller hospitals, the cases seen are usually less complicated than that in bigger or tertiary hospitals.[27]

A study conducted in Lucknow in India shows that the waiting time was less than 30 minutes for the patients attending the primary level health facilities. The same study also refers to the registration time and waiting time at the primary level in Malaysia where the patients waited for 52 minutes on an average and with long waiting time as compared to other studies.[25] Patients attending primary health centres in Davangere district revealed that the major client dissatisfaction was with waiting time >30 minutes.[28] Reduction of the waiting time should be achieved as much as possible while providing with appropriate treatment. The waiting time and waiting area could be utilized to provide health education to the people.

**Conclusion**

Even though the concept of essential drugs and the benefits of rational use of medicines are being popularized in the country, the importance of these was not recognized by the doctors and the pharmacists. The outcome of this study reflects irrational patient care practices among the private practitioners in both urban and rural areas. The quality of the services rendered to the patient in this study was also unsatisfactory. The practitioners are legally bound to give a proper patient care and health facility services, which is intended to serve as guidance for the dispensers and patients for effective use of medicines. Otherwise it will create unnecessary confusions among the health seeking behaviour of the patient who will be ill advised and will be confused regarding the knowledge about their illness and the correct treatment to be administered. Though the short term effects of such irrational prescriptions are overlooked by the professional community, the long term effect can lead to serious public health problems. Therefore all sorts of interventions need to be tried to improve the rational use of medicines by medical practitioners. It is hoped that the lessons learnt from this study shall pave way for more studies in the primary care sector to further evaluate the factors involved in irrational use of medicines.

**References**


