A SURVEY OF PRESCRIBING PRACTICES OF HEALTH CARE WORKERS IN KIBAHA DISTRICT IN TANZANIA

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Abstract

Background: Previous studies in the public sector in Tanzania, have demonstrated major prescribing problems due to poly-pharmacy and irrational use of antibiotics and injections. Little is understood about prescribing in the private sector.

Broad objective: This paper measures and compares prescribing practices in public and private dispensaries in Kibaha District Tanzania.

Design and Sampling: This was a retrospective survey of patient records for the period January – December, 2002.One thousand patient records were randomly selected from public dispensaries and 1,000 from private dispensaries. WHO drug use indicators were used to assess prescribing in both sectors.

Outcome measures: The following WHO indicators were measured; the average number of drugs per patient, percentage antibiotic prescriptions, percentage injection prescriptions, percentage of drugs prescribed in generic names and percentage of prescriptions according to national essential drug list of Tanzania (NEDLIT).

Results: Prescribing of antibiotic and injections was significantly higher in private than in public dispensaries ($P<0.05$).

Conclusion: The extent of prescribing in private dispensaries calls for intervention to reduce overuse of antibiotics and injections.

Key words: Prescribing practices, Tanzania, health workers

Introduction

Rational use of Drugs means that patients receive drugs appropriate to their clinical needs in doses that meet their own individual requirement, for an adequate period of time, and at the lowest cost to them and the community.[1]

The International Network for Rational Use of Drugs (INRUD) in collaboration with WHO has developed core indicators for assessing rational use of drugs at heath care facilities that can be used to evaluate rational use of drugs.[2] Many developing countries have a limited budget allocated to health care especially for drug procurement.

Therefore it is imperative to optimize expenditures for drug purchases by selecting an essential drug list and promoting rational use of drugs. Inappropriate, ineffective and inefficient use of drugs commonly occurs at health facilities in developing countries.[3]

Common types of irrational use of drugs include non compliance with health workers prescription, self medication with prescription drugs, overuse and misuse of antibiotics, overuse of injections, overuse of relatively safe drugs, use of unnecessary expensive drugs and poor patient compliance.[4] Many factors influence irrational use of drugs such as patients, prescribers, and the work environment, the supply system including industry influence, government regulations, drug information and misinformation.[4] Irrational prescribing is a global problem; studies have shown that prescribing awareness of rational drug use does not seem to improve prescribing practices.[5]

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In their role as overseers of public health, governments produce Standard Treatment Guidelines (STGs) and national pharmaceutical policies to promote appropriate drugs use by both private and public sector health workers.[5] Although different in many respects, the private and public sectors must work in concert to improve the quality of health care.

In Tanzania, as in most developing countries, the private sector consists of providers from religious and other non-governmental organization (NGOs) which contribute significantly in the provision of health care services. Private health facilities usually tend to be urban based, although 80% of Tanzania's population live in rural areas.

In private sector, previous studies demonstrated poor prescribing practices. A survey conducted by Massele et al in 2001 revealed that over 35% of prescriptions dispensed in private health care facilities contained an antibiotic while the percentage of encounters with an injection prescribed was 20%.[6] These findings raise concern about overall prescribing in the private sector where there is little government regulation and relatively high utilization of services by the community.

This study was conducted to compare the prescribing practices of health care workers in public against those in private sector dispensaries in Kibaha district.

Materials and Methods

Ten public and ten private dispensaries were randomly selected from a list of all government and private dispensaries in Kibaha district. Each dispensary was visited by a team of four research assistants to collect the data. At each dispensary, patient registers were requested from the clinical officer in charge of the dispensary by the research team. After going through a number of previous registers (2001, 2000 & 1999 patient registers) only registers covering the period January-December, 2002 were selected because the registers had complete patient data records.

Prescribing Survey

A retrospective prescribing survey to estimate the proportion of patient receiving injections, number of drugs prescribed per patient, percent of patients prescribed antibiotics, generics and percent of drugs prescribed according to the essential drug list of Tanzania (EDLIT) was carried out by randomly selecting 100 patient records from each dispensary between January – December, 2002.

A total of 1,000 (one thousand) patient records were obtained from public dispensaries and 1,000 (one thousand) patient record were obtained from private dispensaries as well during the same period. Data was collected by research assistants using WHO data collecting forms WHO (1).

Data collectors were blinded to the study condition of individual dispensaries. Data collection was supervised and

the accuracy of data validated by members of the study team.

Analysis

The percentage of cases receiving on injection, the average number of drugs per patient, percentage of patients prescribed on antibiotic, percentage of drugs prescribed in generic and percent of drugs prescribed according to EDLT were computed manually separately for each dispensary for the entire period (January – December 2002). The means and standard deviations (± SD) were computed separately for public and private dispensaries. Student's t-test was used to test the difference between the means. The level of significance was set at $P<0.05$.

Results

The number of patient records analyzed retrospectively in the year 2002 was 1000 at public and 1000 at private dispensaries. Results of the analysis of patient records are shown in table 1 and table 2 below:

The average number of drugs prescribed per patient was comparable in both public and private dispensaries (refer to table 3). There was no statistical significant difference between public and private practices on this indicator ($P>0.05$). Prescribing in generic names was high in public dispensaries compared to private ones, and the difference was significant ($P<0.05$, refer to table 3). On average, the percent of cases prescribed an antibiotic was higher in private 49.6%.

(±11.0 SD) compared to 30% (± 10.8 SD) in public dispensaries and the difference was statically significant ($P<0.01$, refer to table 3) while the percent of patient encounters with an injection prescribed was 45.3% (± 19.5 SD) in private compared to 25.9% (11.1 SD) in public dispensaries and the difference was statistically significant. This means health workers in private dispensaries prescribed more injections than health workers in public dispensaries ($P<0.5$ refer to table 3).

Table 1: Prescribing indicators for Public dispensaries 2002

Facility SN	Name	N	Ave # Drugs	% Generics	% antibiotics	% Injection	% on EDL
1.	Mkoani	100	2.6	61.1	50.0	42.9	77.8
2.	Mwendapole	100	2.4	95.8	30.0	43.3	90.4
3.	Kongowe	100	2.4	93.2	49.2	32.8	98.6
4.	Soga	100	2.4	100	17.1	19.5	96.0
5.	Mlandizi	100	2.1	84.5	22.3	33.9	86.8
6.	Mbwawa	100	1.5	78.6	21.7	13.0	92.9
7.	Kikongo	100	2.7	81.5	31.1	23.3	99.6
8.	Kwala	100	1.9	84.7	25.7	18.9	94.4
9.	Magindu	100	1.8	95.3	31.5	10.2	97.9
10.	Ruvu Station	100	3.2	95.2	21.2	21.2	96.1
Mean			2.3	87	30	25.9	93.1
± Standard Deviation			±0.47	±11.0	±1.8	±11.1	±6.3

Table 2: Prescribing indicators for Private dispensaries 2002

Facility SN	**Name**	**N**	**Ave # Drugs**	**% Generics**	**% antibiotics**	**% Injection**	**% on EDL**
1.	Fansi	100	1.6	76.6	40.0	53.3	83.0
2.	Marie Stopes	100	2.4	68.1	63.0	43.3	83.3
3.	Keleni	100	2.1	68.3	60.0	70.0	87.0
4.	Kibondeni	100	1.8	98.2	36.7	63.3	98.2
5.	St.Mary's Visiga	100	2.0	72.1	53.3	26.7	85.3
6.	Putu	100	1.9	69.6	36.7	36.7	76.8
7.	Tegemeo	100	2.4	61.1	46.7	26.7	69.4
8.	Chalinze	100	1.4	83.3	46.7	16.0	88.1
9.	C T	100	2.2	81.0	43.3	43.3	81.0
10.	Upendo	30	3.5	78.9	70.0	73.3	55.8
Mean			2.1	75.7	49.6	45.3	80.9
± Standard Deviation			0.6	19.0	11.0	19.5	11.0

Table 3. Comparison of prescription patterns between public and private dispensaries in Kibaha district, Tanzania

Indicator	Public	Private	Mean	Significance
	N=1000 Mean ± SD	N=1000 Mean ± SD	differences	public Vs private
Average	2.3±0.4	2.1 ± 0.6	+ 0.2	N.S
Number of drugs per patient				
% Generics 87±11.0	75.7±10.0	+11.3	P<0.05	P< 0.05
% Antibiotics	30±10.8	49.6±11.0	-19.6	P<0.01
% Injections	25.9±11.1	45.3±19.5	-19.4	P<0.05
% on EDL	93.1±6.3	80.8±11.0	+12.3	P<0.05

Discussion

Rational use of drugs remains a serious problem in developing countries. The measure drugs use in a health facility, drug use indicators have been developed by WHO.[1] The purpose of these indicators is to describe and compare the drug use situation in health facilities. Also, when an intervention is undertaken to improve aspects of drug use, indicators could form the basis of measuring impact. A further use of the indicators is to be a supervisory tool which can be used to monitor the quality of care.

In this study we used WHO drug use indicators[1] to compare the prescribing pattern of prescribers in public against prescribers in private dispensaries in Kibaha district.

The results showed considerable variation in drug use indicators among facilities as shown in table 1 and 2. The average number of drugs per patient was 2.3 ± 0.4 in public dispensaries versus to 2.1 ± 0.6 drugs per patient in private dispensaries but the difference was not statistically significant (P>0.05, refer to table 3).

Prescribing in generic names prevailed in public dispensaries (mean of 87 ±11.0

SD) compared to private dispensaries (mean 75.7 ±10 SD) and the difference was statically significant P<0.05, refer to table 3). The fact that health workers in public dispensaries often prescribed drugs in generic names as opposed to health workers in private ones may be due to the supply of standard treatment guidelines and essential drug lists at public facilities.[6] Prescribing in generic names is rational use of drugs and allows the cheapest form of the drug to be purchased by both the patient and health facility. There is need to sensitize private dispensaries to follow suit.

Patient prescriptions with an antibiotic prescribed were higher in private dispensaries (mean 49.6 ± 11.00) than for public facilities (mean 30±10.8). The difference was statistically significant P<0.01, refer to table 3). Private dispensaries prescribers tended to prescribe more antibiotics to boost their sales; this has also been reported in a similar study.[7]This overuses of antibiotics my favor the spread of bacterial resistance.[8]

Patient prescriptions with an injection prescribed were higher in private dispensaries (mean 45.3 ± 19.5) than public facilities (mean 25.9 ± 11.1). The difference was statistically significant (P<0.05). Overuse of injections especially where sterility can not be guaranteed has been implicated in the spread of HIV, Hepatitis B, C and poliomyelitis.[9] There is need to conduct a focus group discussion with patients and prescribers to find out why there is this practice in private dispensaries in Kibaha district and design an appropriate intervention.

Conclusion and Recommendations

Based on this study, we have shown a significant overuse of antibiotics and injections in private dispensaries compared to the same in public ones. We recommend a focus group discussion (FGD) with health workers and patients in private dispensaries to find out why there is an overuse of antibiotic and injections. This information may assist policy makers to develop appropriate intervention strategies to address antibiotic and injection overuse in private dispensaries.

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