

PATIENTS' VIEWS ABOUT LEVEL OF THEIR INTERACTIONS WITH PHARMACISTS

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ABSTRACT

A number of dissatisfied clients from pharmacies had been encountered and this led to an interest in the researcher to actually document the level of interactions between Pharmacists and patients in hospital and community pharmacies. The main purpose of this study was to determine the level of interactions between patients and pharmacists thereby serving as a baseline for future intervention studies. Using an exit survey method, one hundred and eighty two patients /customers had a pre-tested questionnaire administered to them (82 in hospital practice and 100 in community practice). There was 100% recovery of responses. The results obtained revealed that though patients signified their satisfaction with the current level of interaction they had with the Pharmacist, they also believe that there exists a need for improvement. It is imperative for Pharmacists and Pharmacy managers to rise up to their responsibility by providing the facilities and services required for the improvement of the level of interactions presently attained

INTRODUCTION

Interaction between the patient and the Pharmacist occurs via the various pharmacy services offered by the Pharmacist and includes:-

Drug Dispensing, Monitoring of Drug Therapy¹, Drug Information², Non-prescription Drugs Usage (Self Medication

counseling)^{4, 5, 6}, Disease screening, monitoring and maintenance care for patients with chronic diseases^{7, 8}, Patient Counseling and Education^{9, 10} and Pharmaceutical care¹¹

Patient Compliance or Patient Adherence is defined as the extent to which an individual's behavior coincides with medical or health advice¹². It has been proven that in a number of occasions, the physician and/or the pharmacist have not provided the patient with adequate instructions or have not presented the instructions in a manner that the patient understood which made non-compliance inevitable.

The individuals' adherence to treatment is influenced by many factors, including cultural and community beliefs, the communication skills and attitudes of the prescriber and dispenser, the time spent in counseling as well as use of printed information. For example, there may be a belief that injections are more powerful than capsules, or that capsules are more effective than tablets. Every effort should be made to confirm that the patient understands the instructions given. This can be difficult if someone is collecting items for a patient or for several patients, particularly if the same medicines are prescribed in different dosages. Whenever possible, the staff member dispensing the medicines should have the recipient repeat the instructions given. Some strategies to enhance compliance include

- (a) identification of risk factors for non-compliant behavior
- (b) development of treatment plan suitable for each individual
- (c) patient education using
 - * Verbal communication. Various studies have revealed the positive role of verbal communications with patients in outpatient and clinic settings^{13, 14}.
 - * Written communication. Verbal and

written communications should complement each other and many pharmacists now give patient medication instruction cards or inserts^{15, 16}. Audiovisual materials¹⁷

Controlled therapy. It has been proposed that hospitalized patients be given the responsibility for self medication prior to discharge so that health professionals on hand can respond to questions posed and help identify problems that may be encountered at home. It also gives the opportunity to identify situations that could eventually result in non-compliance¹⁸.

Patient motivation. The best-intentioned, most comprehensive educational efforts will not be effective if the patient cannot be motivated to comply with the instructions for taking the medication(s). The physician-patient interaction has been described as a negotiation and some have even extended this concept further in the development of contracts between patients and health care providers in which the agreed upon treatment goals and responsibilities are outlined¹⁹.

- (d) Use of compliance aids such as proper labeling, medication calendars and drug reminder charts, special medication containers, compliance packaging and appropriate dosage forms.

MATERIALS AND METHODOLOGY

Privately run and publicly owned hospitals in Lagos Island and Lagos Mainland were randomly selected (4 hospitals). Community pharmacies situated closest to these hospitals with a similar range of patient activity as the hospitals were then selected using the next nearest sampling method²⁰. Community pharmacies visited had the Pharmacist in attendance at the time of the interview.

A semi-structured questionnaire to find

out demographic background and opinions of patients on the research questions was administered to 182 patients/customers as an exit survey after completion of interaction with the pharmacist and/or drug purchase. One hundred percent recovery was obtained.

Data obtained was entered into and analyzed with the Epi-Info version 6 software. Comparisons of responses between different health providers were explored.

RESULTS

Demographic profile of 182 patients interviewed. 51.1% were male and 48.9% were female. Majority of patients seen (86.4%) were aged 13 and above while 3.8% each were in the age ranges of 1-12 months, 1-5 years and 6-12 years. 3 patients were under one month old. All children were accompanied by adults who responded to the questionnaire on their behalf. 13.7% of the respondents were professionals including Engineers, Doctors, Pharmacists, etc while 38.5% were categorized as skilled labor. Another 34.6% of the respondents were categorized as unskilled labor, which included housewives. Others were students, 12.6%, and a job applicant, 0.6%.

Conditions that brought the respondents to the hospital (for hospital pharmacy respondents alone) included medical conditions such as hypertension, diabetes (26.8%), obstetrics and gynecology including antenatal patients, 24.4%, and accidents, emergencies and other trauma cases (18.8%). Others included infective episodes such as malaria and typhoid fever (13.4%), dental cases (4.9%), Ear, Nose and Throat (ENT) cases (3.7%). Others included ophthalmology cases and represented 2.4% of the cases. (Table I)

Proactive communication with the patient for the one hundred patients seen in the community pharmacies showed that the Pharmacist asked only 28 persons any questions about the drug item they came to purchase. Only 16 of the respondents made any complaint to the Pharmacist before requesting the item they came to purchase. Of these, 15 people got their complaints addressed by the Pharmacist. It was ensured that the Pharmacist was on duty before

commencement of survey each day. (Table II)

For the number of drugs dispensed, 89 patients in community practice and 35 patients in hospital practice representing 68.5% had between 1 and 2 drugs dispensed to them while 10 and 46 patients respectively (31.5%) had between 3 and 6 drugs dispensed to them. No patient had more than 6 items dispensed. (Table III)

144 respondents were told how to use the items purchased/dispensed to them and of this number, 28 respondents in community practice and 58 respondents in hospital practice representing 59.7% was instructed by the Pharmacist while another 24 and 13 respondents were by the Doctor (25.7%). (Table IV) Of these people that were told how to use the items purchased/dispensed, 97.9% of the respondents said they understood what they were told. However, only 129 people could actually reproduce accurately what they were told. (Figure I).

In determining if patients were satisfied, they were asked what the attitude of the Pharmacist was to them. 84 respondents in community and 65 respondents in hospital representing 82.3% said they were friendly, 4 and 3 respondents respectively (3.9%) said they were interested while another 5 and 8 respondents respectively (7.2%) said they were just okay. 5 and 4 respondents respectively said they were busy. (Table V) When asked if they were satisfied, 177 respondents (97.3%) indicated that they were while only two people said they were not. 3 people left the item blank. (Figure II). Majority of the respondents (75, 41.4%) rated the interaction as being very good, 71 (39.2%) rated it as excellent and 28 (15.5%) rated it as good. 1 person said it was very poor while 2 people said they did not know what rating to give. The remaining 5 respondents left the item blank.

Most of the respondents counted the personality of the Pharmacist as the reason for the good interaction.

53 respondents in community practice and 50 respondents in hospital practice representing 57.9% indicated that the interactions needed to be improved while 45 and 30 respondents respectively (42.1%) indicated that it was good enough as it was.

(Figure III). Measures stated by the majority of the respondents for improving interaction included economic/managerial means (21%), drug information services (17.7%) and improvement in the personality of the Pharmacists (6.1%).

DISCUSSION

This study sought to document the level of interaction between patients and pharmacists in both community and hospital settings. A wide variation existed in the ages and occupations of the respondents in the various locations used. This study then compared the responses of patients in Community pharmacies to those obtained from the patients in hospital pharmacies. A Pharmacist is a person who possesses the educational qualifications recognized by the Pharmacists Council of Nigeria and has been licensed or registered by the same, to practice Pharmacy²¹.

The level of interaction was high in this study as observed by high number of respondents reporting that they were instructed about how to use their drugs. Over 59% of the respondents were instructed by the Pharmacist alone while about 25% of the respondents reported being instructed by the Doctor alone. In a study conducted earlier, it revealed that 35% of the respondents preferred the Doctor, 11% preferred the Pharmacist and 4% preferred the nurse. For these people medication advice sources used at home were, however, community pharmacies (22%), GPs, Books and specialist societies (18%) and others were less than 8%¹⁵.

On the level of proactive interaction in the community pharmacies, a low response rate was obtained. This is unlike an earlier study conducted in Nigeria, which indicated that Pharmacists enquired and used various types of questions in prescription and OTC drug consultations with their costumers²². Also, in this study only 15 respondents made any complaint to the Pharmacist before requesting for the items they wanted to buy. Similarly in a survey carried out in the Czech Republic on OTC counseling by Pharmacists, about 25% of the respondents stated that they were not given

any piece of information about the medication supplied and 45% of Pharmacists did not inquire whether the patient had used the items before²³.

Most of the respondents (124, 68.5%) had between 1 and 2 drugs dispensed to them. Of this number, 89 were in community practice while only 35 respondents in the hospital had between 1 and 2 drugs supplied. 10 respondents in community and 46 in hospital had between 3 and 6 drugs dispensed. On the average 1.8 drugs were dispensed in community practice while 3.2 drugs were dispensed in the hospital. Though improvements are necessary on number of drugs dispensed in the hospital, the overall average is good as one of the objective indices used in the assessment of drug use practice is the average number of drugs prescribed per encounter introduced by WHO following collaborative work by its Drug Action Program (DAP-WHO) and the International Network on Rational Use of Drugs (INRUD)²⁴. In the field test carried out on fourteen developing countries, Nigeria was credited with an average number of drugs per encounter of 3.8 and the conclusion was that it was too high. Values in other countries that were below 2.2 were considered rational.

Results obtained in this study were higher than in a similar survey conducted in Israel in which the quality of counseling or interaction as judged by the patients was ranked above average for 63% of the consultations with the dispensing pharmacist¹³.

In spite of the high level of interaction

however, almost all the respondents still agree that there is a need for improvement in the interactions they have with the Pharmacist. Ways suggested by the patients (in order of importance) through which this can be achieved include

- * Economic and managerial measures. A popular saying goes thus "If you pay peanuts, you will get monkeys as workers". If Pharmacists are better remunerated, they will likely perform better than they are currently doing. Better remuneration, better working conditions and defined job enhancement programmes will produce more satisfied Pharmacists who would want to justify their new status by using more of their initiative and by being proactive.
- * Availability of resources for drug information dissemination coupled with good communication skills by the Pharmacists. Good communication skills cannot be overemphasized because if the information is available and there is no skill to deliver it, the information may as well not be available because inadequately disseminated information will not guarantee rational drug use.
- * The third most important element for improvement has to do with the personality of the Pharmacist.

For interactions between Pharmacists and patients, on the one hand, and Pharmacists and other health care personnel on the other hand, to be effective, the Pharmacist has the

onerous task of offering his services at no cost, and often without receiving any appreciation for his efforts. Pharmacists ought to be proactive in reaching out to patients, answering patients' questions and allaying their fears¹¹. It has been proven in developed countries that as the relevance and worth of the Pharmacist become more visible, appreciation and even charges become a part of the package^{25,26}.

Facilities required for effective interaction in the pharmacy include²⁷: .Well-equipped and computerized Drug Information Center .Efficient communication system .Efficient air-conditioning system .Stationery for efficient record keeping .Overalls for the staff of the Department .Suitable furniture .Tablet counting machines .Weighing balances, mixers, measuring cylinders, mortars & pestles, dryers, dispensing trays and spoons, etc .Adequate training facilities .Vehicles for transportation of staff and products .Well-equipped quality control room in large hospitals .Public address system in the hospitals especially in outpatient and accident and emergency sections

CONCLUSION AND RECOMMENDATION

Effective and productive interactions between Pharmacists and patients are a prerequisite for optimal drug use in any community. It is therefore imperative for Pharmacists and Pharmacy managers to rise up to this responsibility by providing the facilities required for the improvement of the existing level of interaction.

to determine the number of coliform organisms per 100ml of each sample. Series of sterile bottles containing MacConkey broth purple and Durham tubes were inoculated with different quantities of each sample and incubated at 37°C for 48h. Each tube was examined for gas formation.

Differential Coliform Test: Samples with positive result from MPN were sub-cultured separately into 10ml Brilliant-Green-Bile-2% broth-containing Durham tube and incubated at 44°C for 48h. Coliform bacteria number in 100ml of the original sample was estimated by making reference to the McCradys probability table.

RESULTS AND DISCUSSION

The results of turbidity tests indicated that all the samples tested gave turbidity level 5 Nephelometric turbidity units (NTU). High level of turbidity has been known to protect microbes from the effect of disinfections, stimulate bacteria growth and exert a significant chlorine demand. However, the value for all samples were far below the WHO limit 15NTU for colour in drinking water. The combined perception of substances detected by the senses of taste and smell is often called "taste" which represents the largest single class of consumer complaints in drinking water supplies. Water should be free of objectionable taste and odour. The WHO guideline criterion is "not offensive" for most consumers.⁶ This was the case in all the five samples investigated.

The pH measurements gave 6.80±0.01, 7.00±0.01, 6.80±0.01, 7.20±0.01 and 7.20±0.01 for Sample A, B, C, D and E respectively, all clearly within limits of the WHO maximum permissible values of 6.5-9.2. The pH is the negative logarithm of the hydrogen ion concentration. Low pH associated with high acidity in water is known to contribute to the corrosiveness of water. However the results showed that alkalinity was not a problem with the waters produced in the area under study.

The results obtained for determination of silica content were 12.00±0.01, 6.00±0.01, 20.00±0.02, 8.00±0.01 and 8.00±0.01mg/l for A, B, C, D and E respectively. Many natural water sources

contain less than 10mg/l of silica, though some may approach 60mg/l, which is usually in soluble forms. The results indicated that only two of the samples which gave values greater 10mg/l but less than the permissible limit 45mg/ml.

The determination of chloride ion concentration gave 5.60±0.01, 4.50±0.01, 3.70±0.01, 5.00±0.01 and 3.96±0.01mg/l for A, B, C, D and E respectively, far below the 200mg/l guideline value stipulated.⁵ Chloride is one of the major anions in water and is largely responsible for the salty taste. Water containing more than 250 mg/l Cl ions may produce detectable salty taste with sodium ions. The phenomenon is however, absent with concentrations of 100 mg/l and below. Also, high chloride content in water is found to exert deleterious effects on metallic pipe structures and plants.

The concentrations of nitrate for Samples A, B, C, D and E considered were 5.00±0.01, 3.00±0.01, 2.20±0.01, 5.00±0.01 and 5.00±0.02 mg/l respectively. High levels of nitrates is reported to contribute to infant methaemoglobinemia.³ A limit of 45mg/l has accordingly been imposed on drinking water as a means of averting this condition. The nitrate concentrations of most drinking waters usually fall below 10mg/l. All the samples contained less than the specified limit and hence passed the test.

The results of the microbiological assays are presented in Table 2. The NAPC test showed that Samples B and E were bacteria-free; A and C showed 2 and 1 colonies respectively; and D showed numerous colonies. The results implied that the latter samples contained bacteria. The results of MPN tests indicated that only Sample D contained 14 coliform of organisms/100ml, which was further confirmed by the DCT as *Escherichia coli*. (gas formation within 48h) The NAPC at 37°C is an indication of the number of bacteria which thrive at body temperature and which therefore includes those of faecal origin. On the other hand, MPN Count at 37°C indicates the number of bacteria in the coli-aerogenes group while DCT at 44°C is estimation of the numbers of *E. coli* present, which is a positive indication of the degree of faecal pollution or contamination. The result for D was a

positive indication of the degree of possible faecal pollution.

A greater majority of water quality problems in the underdeveloped world are known to be related to microbial contamination, though serious health hazards may also occur due to chemical contamination of water sources from industrial and/or agricultural activities or natural. In most cases, measurement of a selected number of physicochemical parameters is enough to establish existing contamination problems.⁵

Generally, where community water supplies are unchlorinated, they will inevitably contain large numbers of total coliform bacteria, which may be of limited sanitary significance. It is therefore recommended that the bacteriological classification scheme should be based on thermotolerant (faecal) coliform bacteria or *E. coli*. However, where piped small-community water supplies are being analysed and samples are taken at various points in the system, water quality may differ in different parts of the system at any one time. Again the reasons for this may become obvious during the sanitary inspection or if these differences are the result of cross-contamination or contamination caused by leaks in pipework after resampling. It is common to use 95% compliance criteria when assessing the results of microbiological analysis. This procedure is appropriate only where adequate numbers of samples are analysed for statistical purposes and is not generally applicable to small-community water supplies.⁶

CONCLUSION

The results of the physical and chemical tests carried out showed that all the samples complied with the requirements of the WHO. However, microbiological analysis of the samples showed that the samples obtained from domestic tap contained *E. coli*. The contamination might have occurred as the water passed through pipes with leaks some of which may not be observable. It might be advisable to further treat the water from this source; boiling and filtration on a micro scale would do.

Table 1. Determination of the Amount of Constituents in selected Water Samples

Sample	Constituent			
	Alkalinity pH	Nitrate mg/l	Silica mg/l	Chloride mg/l
A	6.80+0.01	5.00+0.01	12.00+0.01	5.60+0.01
B	7.00+0.01	3.00+0.01	6.00+0.01	4.50+0.01
C	6.80+0.01	2.20+0.01	20.00+0.02	3.70+0.01
D	7.20+0.01	5.00+0.01	8.00+0.01	5.00+0.01
E	7.20+0.01	5.00+0.02	8.00+0.01	3.96+0.01
WHO Limit	6.50-9.20	45mg/l	45mg/l	200mg/l

Table 2: Determination of Water Safety by Microbiological Assays.

Sample	Assay		
	NAPC	MPN	DCT
A	2	Nil	Nil
B	Nil	Nil	Nil
C	1	Nil	Nil
D	Numerous	14	14
E	Nil	Nil	Nil
WHO Limited	Nil	Nil	Nil

* Key

NAPC	Nutrient Agar Plate Count
MPN	Most Probably Number
DCT	Differential Coliform Test

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