

Assessment of Level of Community Pharmacists' Knowledge and Involvement in Tuberculosis Case Detection and Management in Lagos State, Nigeria

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Abstract

Introduction: Nigeria is the third highest Tuberculosis (TB)-burden country in the world and number one in Africa. Level of TB case detection and control is low. Community pharmacists can be trained to provide TB case detection of new patients and management of patients who had been earlier assessed and treatment initiated in the hospitals.

Aim: To assess the level of Community Pharmacists' knowledge and involvement in Tuberculosis case detection and management.

Methodology: This is the first phase of the interventional study that was aimed at scaling up community pharmacists' involvement in tuberculosis case detection and management. A cross sectional descriptive study was carried out on 285 randomly selected Community Pharmacists in Lagos State using a multi-staged cluster sampling method and structured questionnaire, followed by Focus Group Discussions and Key Informant Interviews.

Results: Knowledge on TB cause, transmission, signs and symptoms was high, 98%, 95.5% and 88.1% respectively while 73.15% of the pharmacists said they have identified clients suspected of having pulmonary TB. Of the Pharmacists that have identified clients suspected of having pulmonary TB, majority (65.7%) had referred them to the health centres. Only 15.4% of the pharmacists were involved in DOTs with TB patients. Correct knowledge of duration of treatment was found among 83.6% of respondents.

Conclusion: Community Pharmacists are highly knowledgeable in TB cause, transmission, signs, symptoms, regimen and duration of treatment and are informally involved in TB case detection and management.

Keywords: Community Pharmacists; Tuberculosis; Knowledge; involvement; Case Detection, Scaling-up.

Introduction

Nigeria is the third highest Tuberculosis (TB)-burden country in the world and number one in Africa. Level of TB case detection and control is low. Studies have shown that majority of the health seeking people first visit the community pharmacies when they are ill, before visiting the hospitals. In Cambodia and other low- to middle-income countries, pharmacies are often the first point of contact with the health care system for people seeking care for cough (Carolyn A.2015).

In order to scale-up Community Pharmacists' involvement in TB case detection and management, reduce the overload being experienced by hospital pharmacists, the stigma suffered by patients and address the logistics of visiting the hospitals, community pharmacists can be trained to provide TB case detection of new patients and management of patients who had been earlier assessed and treatment initiated in the hospitals. This would decongest the hospitals, improve the quality of patient care and reduce absenteeism from work and school experienced by the patients. An average of 11.6% of TB cases has been detected from private provider referrals in Cambodia over the period 2005–2012 inclusive (Carolyn A.2015).

The systematic involvement of private pharmacies in TB control is progressing globally. India launched a nationwide Public Private Mix for Directly Observed Treatment Short-course programme to involve private pharmacies in treatment, observation and referral in 2012 following earlier pilot studies. An interventional study conducted in Tanzania to evaluate community-based interventions to improve TB case detection reported that 434 people with presumptive TB were referred by community pharmacists and traditional healers to diagnostic facilities, 419 (97%) of whom went to the facilities; of those who went to the facilities for testing, 104 people (25%) were diagnosed with TB. (Charlotte, Jackson and D'Arcy, 2014).

Despite the global trend, TB case detection and management is still domiciled in specialised public hospitals according to the National TB Control programme in Nigeria. The above studies have proved the impact that Community Pharmacies can make in TB control, it is hoped that such global practices can be replicated in Nigeria. The objective of the research is therefore to assess the level of the Community Pharmacists' knowledge and involvement in Tuberculosis case detection and management, as a first step in an interventional study aimed at scaling up community pharmacists involvement in TB case detection and management in Lagos State Nigeria.

Method

Study setting

Lagos State is located in the south western part of Nigeria. It is arguably the most economically important state in the country. Although it is the smallest state in Nigeria, with an area of 356,861 hectares of which 75,755 hectares are wetlands, it has the highest population which is over five percent of the national population with about 3million households. According to the 2006 National Census, the state has a population of 9,013,534 and a projected population of 24.6 million in 2015. (Lagos State, 2006)

Study population

According to the Pharmacists Council of Nigeria (PCN) December 2015 Register of Pharmacists and pharmaceutical premises, Lagos state has a total of 1615 licensed private sector pharmacies but only 946 are retail community pharmacies, this constitutes the study population because only retail pharmacies are permitted by law to interface with patients. They practice within the 21 zones of the Association of Community Pharmacists of Nigeria (ACPN) and are also registered with the association. The remaining 669 are either engaged in distribution, importation or wholesaling practices and are not licensed to interface with end users. These are therefore to be excluded from the study.

Study design

This research the first phase of the interventional study that was aimed at scaling up the community pharmacists' involvement in Tuberculosis case detection and management. A cross-sectional descriptive study was carried out on 285 randomly selected Community Pharmacists in Lagos State using a multi-staged cluster sampling method and structured questionnaire. Equal numbers of rural and urban areas/districts were selected from the 21 zones. The selected zones were mapped to identify all the existing clusters and the community pharmacies practicing within them. Random selection of the clusters was carried out depending on the proportional sample size needed for the study.

Conchran's formula for calculation of sample size is as follows:

$$ss = \frac{Z^2 \times p \times (1 - p)}{c^2}$$

ss = sample size

Z = Z value (1.96 for 95% confidence level)

p = percentage picking a choice, expressed as decimal.

c = confidence interval, expressed as decimal.

Correction for finite population

$$new\ ss = \frac{ss}{1 + \frac{ss - 1}{pop}}$$

Where pop = population

Pop size = 946

To calculate for sample size

Z = 1.96 for 95% confidence level

P = 0.5,

C = 0.05

Therefore, $ss = 1.96^2 \times 0.5 \times (1-0.5) / 0.05^2$

$ss = 384.16$

$$New\ ss = \frac{384.16}{1 + \frac{384.16 - 1}{946}}$$

= 273.4173

In order to allow for attrition, 285 retail community pharmacies were sampled. Only one pharmacist was sampled per pharmacy. Results were presented in tables and charts.

Focus Group Discussions (FGDs) and In-depth interviews (IDIs) of purposively selected community pharmacists were done using FGD guide (Eliot & Associates, 2005) and IDI guide (Carolyn B, Palena N, 2006) respectively.

Limitations

Despite the usefulness of this type of research methodology, a few limitations need to be taken into consideration.

Generally, close-ended questions offered in a multiple-choice format may encourage guessing which may result in a misrepresentation of the knowledge and practices of respondents (Vandamme, 2009). Furthermore, it is also argued that KAP surveys (and quantitative data in general) are inadequate to fully understand behaviour which is often not as straightforward as quantitative analysis implies. Although quantitative research yields highly descriptive data, it is often unable to provide an explanation for why people do what they do" (Hausmann-Muela, Ribera & Nyamongo, 2003; Launiala, 2009).

Publications on similar research conducted specifically on community pharmacies were few so it was difficult to compare the results.

As data were collected based on self-reported information, there is possibility of reporting errors and biases.

The survey was limited to only retail pharmacies since they were the only pharmacists in the private sector permitted by law to interface directly with patients. However, many wholesalers illegally engage patients with one pharmaceutical service or the other which may include tuberculosis.

Many questionnaires were invalidated either because the respondents neither endorsed the questionnaires as evidence of their consent nor indicated their telephone numbers for follow up intervention.

Ethical consideration

Ethical clearance (Notice of Exemption) was obtained from the Lagos University Teaching Hospital Health Research Ethics Committee and the Lagos State Ministry of Health. Permission to study community pharmacists was also received from the Executive Committee of the Association of Community Pharmacists of Nigeria, Lagos State branch. The purpose of the research was explained to them through text messages prior to distribution of the survey instrument. Informed consent of the community pharmacists was obtained through their endorsement of informed consent form included in the questionnaire.

Results

Bio-data of respondents

Only 201 community pharmacists validly responded to the questionnaire out of which 53.2% were male and 46.8% were female. Pharmacists within the age bracket of 41 and above have the largest percentage of 51.2% while the age brackets < 26yrs have the lowest percentage of 3%. Pharmacists with BPharm and other qualifications were 14.9%, those with BPharm and Msc 16.9% while 67.2% has BPharm only. About 79.6% of the pharmacists were married and 17.9% were single. Christians constituted 91% of the respondents while 9% were Moslems.

Knowledge of respondents

Knowledge on TB cause, transmission, signs and symptoms was high. While 98% of the pharmacists believed that tuberculosis was caused by bacteria, 0.5% believed that the cause of tuberculosis was spiritual. Respondents that believed that more than 90 percent of TB cases occur in developing country were 90.5% while 9.5% were not of the opinion. Also, 95.5% of pharmacists agreed that TB can be transmitted from one person to another through cough, 1.5% agreed that TB can be transmitted from one person to another through sexual contact, eating food with infected person and other means. On the signs and symptoms of pulmonary tuberculosis, 88.1% of the respondents agreed that coughing for more than two weeks, weight loss, night sweats, fever and chest pain are the only signs and symptoms of pulmonary tuberculosis while 3.5% and 3.0% of the respondents agreed that coughing for more than two weeks and weight loss respectively are the only signs and symptoms of pulmonary tuberculosis. Correct knowledge of Standard Drug Regimen for TB management was 58.7% while 29.9% had incorrect knowledge. Correct knowledge of duration of treatment was found among 83.6% of respondents. On monitoring of TB patients during follow-up visits according to the Standard Treatment Guidelines, 66.2% had correct knowledge, 31.9% had incorrect knowledge while 1.9% did not respond to the question. Pharmacists that believed that there is a relationship between TB and HIV were 90.5%, while 9.5% believed that there is no relationship between TB and HIV.

Community pharmacists' involvement on Tb case detection and management

On involvement of pharmacists in TB care, 73.1% of the respondents said they have identified clients suspected of having pulmonary TB while 26.9% have not. Of the pharmacists that have identified clients suspected of having pulmonary TB, 65.7% referred the clients to the health centres, 8.5% treated them with antibiotics while 25.9% were silent on their action. Also, 56.2% of the pharmacists followed up with referred patients while 43.8% did not. 37.3% of the followed-up cases were done through telephone, 20.4% were done through an appointment. The respondents that agreed that TB can be diagnosed according to the National Program using both sputum smear and chest x-ray were 74.6%, while 14.4% and 8.5% agreed that using only sputum smear and using only X-ray respectively is adequate for diagnosis. Only 15.4% of the pharmacists were involved in DOTs with TB patients while 84.6% were not involved. Respondents that had undergone previous training and workshop on management of TB were 78.6% while 21.4% had not undergone any training.

Discussion

Tuberculosis case detection, means *that* TB is diagnosed in a patient and is reported within the national surveillance system, and then to the World Health Organization. (WHO, 2015).

There is a growing body of scientific evidence from around the world which supports engagement of the retail pharmacies in TB prevention and control (Morris O. et al 2012). Community Pharmacy outlets in Nigeria are by law designed to mainly offer dispensing of medicines (both prescriptions only and over the counter medicines) as well as health education and promotion, advisory and counselling services to patients and other health care workers.

This study has revealed a general lack of publications on the assessment of knowledge and involvement of Community Pharmacies in Tuberculosis case detection and management but it has given pertinent information regarding the high level of knowledge on TB cause, transmission, signs and symptoms, diagnosis and standard treatment regimen and duration among community pharmacists in Lagos State, Nigeria. The finding is contrary to that of the Systems for Improved Access to Pharmaceuticals and Services (SIAPs) study (Malik M. et al, 2016) which demonstrated a gap in knowledge of TB symptoms, diagnosis, and treatment among the surveyed drug sellers in Pakistan where most of the providers had no formal training in health or in TB management, and a significant number had limited knowledge about the symptoms, diagnosis, and mode of transmission of the disease. It also contradicts the findings in a study conducted in Jamaica where Less than 40% of respondents had good knowledge of Tuberculosis (Zahra N.W, 2011) The SIAPS approach to engaging the retail pharmacy sector combines strategies in the access framework and recommendations from the WHO and International Pharmaceutical Federation joint statement in 2010, which strongly emphasized the importance of pharmacists' contributions to different tasks essential for quality TB care. The key overarching strategy is to build broad stakeholder involvement that includes national programs (NTPs), professional associations, and private sector associations and to ensure the International Standards of TB Care are integrated into private sector.

The study has also shown that despite the fact that the National TB program did not designate any role to the Community Pharmacists in TB case detection and control in Nigeria, community pharmacists are highly involved in TB case detection, referrals and follow up of suspected or known TB patients. This finding is in line with a study conducted in Pakistan (Yasir S., 2015) which revealed that it is feasible to involve private retail pharmacies in TB control and they can play a potential role by detecting and referring suspected TB patients to National Tuberculosis Programme DOTS centres, providing patient oriented services like adherence to the treatment, proper counselling regarding administration and side effects of anti-TB drugs. There is a direct relationship between knowledge on Tuberculosis with the Community pharmacists' involvement in Tuberculosis case detection and management.

Despite the community pharmacists' involvement, about 35% did not refer suspected cases but either treated them with antibiotics or took no further action. This finding agrees with the USAID Technical Report which identified factors that contributed to lower referrals as the fact that these pharmacies are already known in the community and so did not feel that this work added value to their rapport in the community and that Patients were unwilling to visit public sector sites because of perceived poor quality of services and the need to pay for X-ray screening.(Malik M.; 2016) It also agrees with a study conducted in Cambodia (Carolyn A.2015) which reported low level of referral of suspected TB cases to the treatment centres. The findings are contrary to those of an interventional study conducted in Tanzania to evaluate community-based interventions to improve TB case detection which reported that 434 people with presumptive TB were referred by community pharmacists and traditional healers to diagnostic facilities, 419 (97%) of whom went to the facilities; of those who went to the facilities for testing, 104 people (25%) were diagnosed with TB. (Charlotte, Jackson and D'Arcy, 2014).

In Nigeria, most TB patients are managed in government healthcare facilities. There is, however, evidence to show that some TB patients are managed in private healthcare facilities. Ideally, there should be close collaboration between healthcare professionals in the private and the public sector. Private healthcare professionals should therefore encourage and assist patients in identifying TB control centres within their communities to ensure that these cases are recorded as part of the TB recording and reporting system. (Gail M, 2010).

This study has provided evidence for advocacy to strengthen community pharmacies role in early TB case detection and referrals, has contributed to knowledge and is publishable in international peer review journals.

Conclusion

Despite the low level of TB case detection and control in Lagos State Nigeria, there is high level of knowledge on TB cause, transmission, signs and symptoms, diagnosis and standard treatment regimen and duration among community pharmacists in Lagos State, Nigeria. Referring suspected Tuberculosis patients from community pharmacies to treatment centres is low. The interventional study is on-going. It is hoped that at the end of the study, the knowledge and involvement of community pharmacists on TB case detection and management would have increased, the referral processes would have been concretized and community pharmacies be recognized as official primary healthcare posts with respect to Tuberculosis case detection and management in Lagos State.

Figures and tables

Table 1. Causes of tuberculosis

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid bacteria	197	98.0	98.0	98.0
Spiritual	1	.5	.5	98.5
Don't know	2	1.0	1.0	99.5
Others specify	1	.5	.5	100.0
Total	201	100.0	100.0	

symptoms and signs of pulmonary tuberculosis

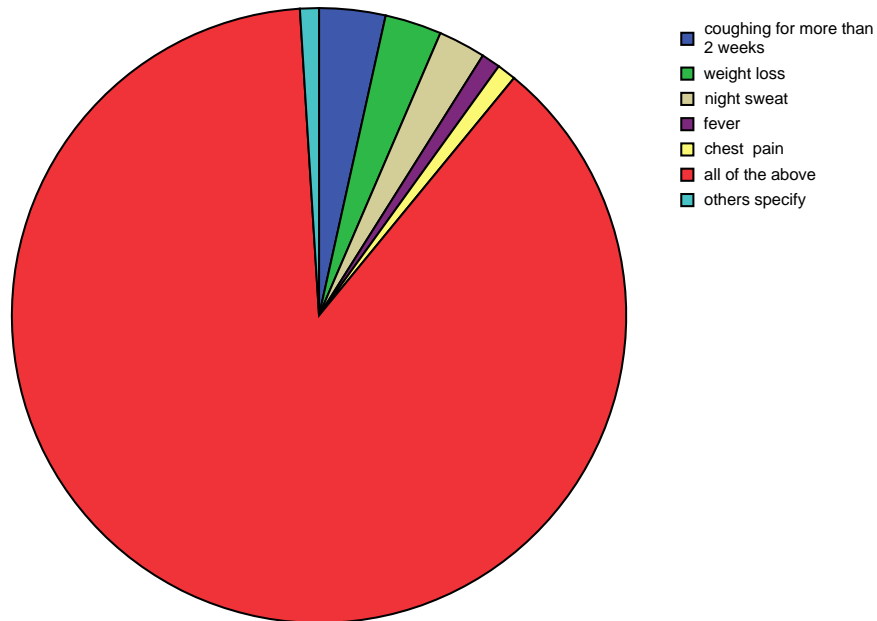
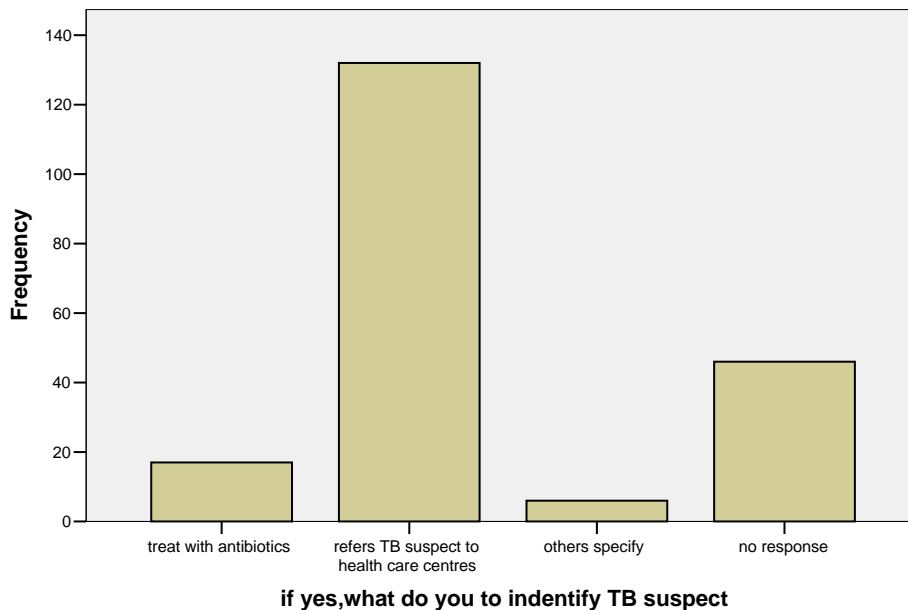


Table 2. Transmission of Tuberculosis

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid cough	192	95.5	95.5	95.5
Sexual contact	3	1.5	1.5	97.0
Eating food with infected person	3	1.5	1.5	98.5
Others specify	3	1.5	1.5	100.0
Total	201	100.0	100.0	

if yes,what do you to indentify TB suspect



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