

Research Article

Evaluation of Community Pharmacists' Involvement in Primary Health Care

Azuka C Oparah[†] and Evbade M Arigbe-Osula

Department of Clinical Pharmacy & Pharmacy Practice, Faculty of Pharmacy, University of Benin,
PMB 1154, Benin City, Nigeria

Abstract

Objective: To evaluate the involvement of community pharmacists in primary health care; determine extent of the pharmacists' participation in curative and preventive services, as well as partially assess quality of the involvement.

Methods: A 27-item self-completion questionnaire with 0.92 reliability was administered to 110 community pharmacists in Benin City, Nigeria. Data were collected on a scale that ranged from 27 to 135 with an assumed neutral point of 81 and statistically analysed.

Results: Respondents scored 87.92 ± 31.31 , and over half (55%) were above the neutral point. This implies a slightly satisfactory but not significant involvement ($p = 0.25447$). Mean total rating on curative services was 92.61 ± 29.6 , $p = 0.0759$ with 58% above the neutral point. Infectious diseases accounted for majority of the interventions. Involvement in preventive services was very poor. Only 31% scored above the neutral point with a rating of 65.61 ± 31.05 , $p = 0.2377$. Quality of involvement was 94.77 ± 36.18 which was not significant ($p = 0.2866$). Majority of the respondents (94%) claimed they would be prepared to participate in further training on primary health care programme.

Conclusion: Community pharmacists are marginally involved in the primary health care programmes in Benin City and are willing to improve on their performance. Continuing education on primary health care and incorporation of primary health care role of community pharmacists in the curriculum of pharmacy schools might be helpful.

Key words: Benin City, Community pharmacists, primary health care.

[†]To whom correspondence should be addressed: E-mail: oparaca@yahoo.com

Introduction

All health systems contain four essential levels of care: lay self-care, primary professional care, general specialist care and super specialist care¹. Within this structure, primary health care (PHC) is the first level of professional contact in the community and this forms the corner-stone strategy for the attainment of level of health that will permit socially and economically productive life. Since 1978, member states of the World Health Organisation (WHO) have accepted primary health care as their health policy. Some crucial roles recommended for community pharmacists in the PHC programmes include the following²⁻⁴:

- Advise government on a regular basis on the selection of the drugs most appropriate for the programmes;
- Form a network for the storage and distribution of essential vaccines to enhance coverage;
- Promote the sale and distribution of essential drugs;
- Train and supervise community health workers on the proper handling, usage and administration of essential drugs;
- Provide expanded/clinical pharmaceutical services with proper documentation;
- Promote health through public health education and enlightenment programmes; and
- Be involved in training and retraining of community health workers.

In a survey that was undertaken to document the Primary Health Care role of pharmacists in London, the volume of primary contacts, the types of problems handled and the advice given by the pharmacists were of particular interest⁵. The contribution of pharmacists in primary care was found to be large, with neighbourhood pharmacies being the most active. Eighty per cent of all problems were handled by recommending over-the-counter drugs. The pharmacist appears to be comfortable in this

function, although a conflict may exist between his professional and merchant roles⁵. Hamley *et al*⁶ studied integrating clinical pharmacists into the Primary Health Care team: a framework for rational and cost effective prescribing. In the study, a change to generic name prescription was achieved without patient complaints and the overall generic prescribing level increased from 57 to 68%. Generic substitution was therefore a primary health care role to save cost. Using a cross - sectional survey, Flobbe *et al* evaluated pharmacy - based screening programmes in South Africa. Overall, 57% of the pharmacies provided at least one screening test. Blood pressure measurement, serum cholesterol, capillary glucose and pregnancy testing were the most commonly offered services. Screening tests were conducted less than five times a week, except for blood pressure measurement that was more frequent. Only 35% of pharmacies kept records. No quality control procedures were used and pharmacists' knowledge about the tests such as false positive and false negative results was poor⁸. The pharmacy profession was pursuing an extended role for pharmacists in primary health care. An independent enquiry into pharmacy practice has concluded that pharmacists are underused resource. A wide-ranging development of their roles was therefore recommended⁹. The Scottish Audit Commission report has also recommended the integration of clinical pharmacists into the PHC team as a framework for rational and cost effective prescribing⁶. In South Africa, pharmacists and nurses have been reported to have a team approach towards PHC and such partnership was found to be mutually beneficial in expanding their professional activities with substantial benefits in the process. These include potential increases in profit, enlarging the clientele base and improving the image of the pharmacy, by shifting the focus from a place of disease to a place of health, as well as creating the vision of the pharmacist as a team member in providing PHC¹⁰.

Smith *et al*¹¹ used generalisability theory to assess the quality of primary health care. In the study, a random sample of pharmacists from all London postal districts was selected and visited for set periods throughout one year. Encounters between clients and pharmacists were tape – recorded. Performance regarding disease prevention/health promotion activity was poorest. Thus, the quality of most consultations was found to be either very good or very poor, relatively few occupying middle ground.

Nigerian community pharmacists perform PHC roles without official acknowledgement. A survey of their involvement in the programmes of PHC in Lagos showed that they have not been adequately integrated into these programmes¹². In Lagos, Nigeria, Eniojukan and Adeniyi¹² found the overall involvement of community pharmacists to be approximately 41% of the programme items they studied; with supply of essential drugs and vaccines, oral rehydration therapy, and family planning topping the list. The training of health personnel in PHC and screening for common diseases were the poorest¹². However, no study on the involvement of community pharmacists in PHC programmes in Benin City has so far been reported. We consider such a study important. Such research finding(s) will be beneficial in the cost effective delivery of pharmaceutical services at community level. Policy makers may find it useful in developing and formulating appropriate policies to ensure effective utilization of the untapped potential of the community pharmacist. Trainers of pharmaceutical manpower may also benefit if the research identifies gaps in the knowledge of pharmacists. Furthermore, the community pharmacists may want to know how well they are performing the functions the society expects of them, since the society is the major determinant of what functions it can entrust a professional group with, based on its perceptions of the profession.

This study was therefore necessary to document the involvement of community pharmacists in PHC in Benin City, Nigeria. The following research questions therefore arise: What are the extent and quality of community pharmacists' involvement in PHC? The main objective of the study was to quantitatively evaluate community pharmacists' involvement in PHC in Benin City, Nigeria. The specific objectives were to determine the involvement of community pharmacists in curative services, to determine the involvement of community pharmacists in preventive health care services, and to assess the quality of the community pharmacists' involvement in PHC.

Methods

Setting

This investigation was carried out from June to September 1999 in Benin City, Edo State, Nigeria. The city is a state capital with a projected population of 1.2 million inhabitants made up of different socio-economic strata. Health care facilities in the city include two tertiary facilities namely a university teaching hospital and a psychiatric hospital along with two secondary health care facilities – a military hospital and a state owned general hospital. There are also over fifty private hospitals and clinics, several patent medicine shops and traditional medicine clinics. The City had 110 community pharmacists and 89 registered community pharmacies, some of which had more than one pharmacist as at the time of the study. The location of the pharmacies tends to emphasize the commercial interests of the pharmacists in the City with about 50% of the pharmacies located within the vicinity of the government hospitals while the remaining are scattered in no definite pattern over the rest of the City. Patients pay for all their medicines and supplies as the proposed National Health Insurance Scheme is yet to be implemented.

Sample

All the 110 community pharmacists in Benin City (at the time of this study) were included in the study. A self-completion questionnaire was administered to the pharmacists in their premises. Completed questionnaire copies were retrieved on follow-up visit after one to two weeks. Non-responders were followed up with oral interview to explore their opinions, and reasons given for their non-participation ranged from lack of time to lack of interest in the study.

Survey Instrument

A 27-item stem consisting of 5 points response scale was developed for the survey questionnaire. Items included in the instrument covered different aspects of PHC programmes such as: awareness, basic enabling structure, curative services, preventive services, procedures, participation in training programmes, and adequacy of professional training. Respondents were requested to rate their opinions on the scale of 1 – 5 (lowest to highest) provided. The instrument was pre-faced: very frequent = 5, frequent = 4, not sure = 3, less frequent = 2, and not at all = 1. Since all the items were in one direction, a summation of the scores was assessed to reflect the level of performance; high score correlating with high level of involvement and vice versa.

Validity and reliability of the instrument

Selecting items suggested by professional literature and expert opinions validated (content or face validity) the instrument. The questionnaire was pre-tested on a sample of 20 community pharmacists who the purpose of the study was explained to. The result of the pilot study was correlated with the sample response using Spearman's rank difference method. This procedure has been employed in our previous investigation¹³. Since the pre-testing did not result in major modification of the instrument, the results were included in the final study.

Analysis of data

The retrieved usable copies of the questionnaire were entered on Microsoft Excel computer package for sorting and analysed with InStat version 2.05a (Graphpad Inc., USA). On the 5-point scale, "5" represented the highest mean score while "1" represented the lowest mean score. And on the 27-item scale the lowest possible score would be 27 while the highest possible score would be 135. A logical neutral point was assumed to be 81 i.e. midpoint between 27 and 135. Since the summated score correlated with level of involvement of community pharmacists in PHC, scores above 81 were taken as positive. The standard deviation was calculated as a measure of item variability from the mean score. Any low standard deviation indicated cluster of responses to the mean while high standard deviation reflected high variability of opinions from the mean. The percentage performance was the number of respondents that scored above the critical or neutral point on the rating scale.

Results

The survey questionnaire response rate was 90.9% and this was considered to be reasonably high. The reliability of the instrument was found to be 0.92 using Spearman's rank correlation method. The results of the general participation of the community pharmacists in PHC programmes are shown in Table 1. Each item deals with an aspect of PHC and the more the number of items, the higher the reliability of the measurement. The pharmacists scored 87.92 ± 31.31 which is above the critical point of 81 and this suggests a slightly satisfactory or marginal involvement. More than half (55%) of the respondents scored above the critical point.

Using 7-item measures (Table 1), the respondents scored 65.61 ± 31.05 on preventive services, and this falls far below the critical point of 81 on the rating scale.

Table 1: Item analysis of responses for general participation in PHC programmes

Item	Mean score	Standard deviation	% Performance
Level of awareness of PHC	4.08	0.77	90
Community pharmacists as providers	4.50	0.58	98
Preparedness for new PHC roles	4.19	0.96	86
Blood pressure apparatus	4.32	1.51	83
Thermometer	3.92	1.78	73
Bathroom scale	2.28	1.88	32
Dressing Kit/First aid box	4.56	1.26	89
Adequacy of training	3.96	1.09	75
Preparedness for further training	4.47	0.74	94
Treatment of common diseases and injuries	4.10	1.03	85
Screening for hypertension	2.65	1.27	35
Screening for drug interactions	2.78	1.26	34
Detection of adverse drug reactions	2.58	1.07	26
Generic substitution	3.24	1.29	55
Health promotion and disease prevention	3.57	1.20	68
Use of family planning devices	2.52	1.25	30
Physical examination	2.64	1.10	27
Ordering of routine lab tests	2.79	1.16	38
Body mass index (obesity)	1.54	0.82	11
Vaccination against tetanus	2.49	1.38	32
Vaccination against rabies	1.47	0.86	6
Referral of patients	2.85	1.12	38
Diarrhoea management with ORS	3.57	1.22	64
Syndromic management of STDs	3.03	1.25	47
Supply of essential drugs and dressings	3.40	1.41	59
Patient medication counseling	4.45	0.87	91
Participation in training programmes on PHC	1.97	1.18	16
<i>Mean total</i>	<i>87.92</i>	<i>31.31</i>	<i>55</i>

This is considered very poor ($p = 0.2377$). Less than one-third of the respondents (31%) were involved in preventive services. The involvement of the pharmacists in curative health care services is given in Table 2. The mean total score of 92.61 ± 29.16 appears moderately satisfactory. More than half (58%) of the respondents are involved in curative services. The most prevalent diseases which the pharmacists are frequently involved in the treatment are as follows: malaria (100%), cough (95%), UTI/STD (78%), typhoid fever (69%), sore throat (69%), helminthiasis (64%), diarrhoea (63%) and peptic ulcer disease (60%).

Table 3 identifies 9 items that can partially measure quality of care. Sixty per cent of the respondents scored above $94.77 \pm$

36.18. A comparison of performance of the respondents in curative and preventive services showed no significant difference ($p = 0.0358$).

Discussion

In a similar work conducted in Lagos Nigeria, the pharmacists scored an average of 41% actual involvement on a 10-item scale¹². In this study, however, there is a sharp contrast between level of awareness (90%) and the level of involvement (55%); also 83% reported to have BP apparatus while only 35% were said to screen for hypertension. This disparity may be explained by the high percentage (94%) of pharmacists who believed they would need further training on PHC programmes. Community pharmacists'

Table 2: Diseases treated/curative services pharmacists are involved

Item	Mean score	Standard deviation	% Performance
Malaria	4.85	0.36	100
Typhoid fever	3.68	1.18	69
Helminthiasis	3.44	1.11	64
Cough	4.37	0.71	95
Sore throat	3.66	1.12	69
Indigestion/Constipation	3.21	1.19	51
Diarrhoea	3.94	0.96	63
UTI/STD	3.80	1.03	78
Pneumonia	2.67	1.00	27
Diabetes mellitus	2.93	1.37	37
Hypertension	2.55	1.20	45
Peptic ulcer Disease	3.32	1.06	60
Conjunctivitis	2.88	1.09	39
Generic substitution	3.24	1.29	55
Physical Examination	2.64	1.10	27
Ordering of routine lab tests	2.79	1.16	38
Referral of patients	2.85	1.12	38
Diarrhoea management with ORS	3.57	1.22	64
Syndromic management of STDs	3.03	1.25	47
Supply of essential drugs and dressings	3.40	1.41	59
Patient medication counselling	4.45	0.87	91
<i>Mean</i>	<i>3.40</i>	<i>1.08</i>	<i>58</i>

involvement in screening patients can contribute to the early detection of those at risk of coronary heart diseases who need immediate referral.

The importance pharmacists attach to vital health promotion behaviours and their health promotion beliefs have been shown to affect their practices¹⁴. Also, community pharmacists performance regarding disease

prevention/health promotion activity has been reported to be poor in a study carried out in London¹¹. This result is similar to our findings despite the disparity in the level of development of Nigeria and England.

Quality of care is best evaluated using all the three quality measures (structure, process and outcome)¹⁵. It has been postulated that outcomes are probably weakly related to

Table 3: Partial assessment of the quality of PHC involvement

Item	Mean score	Standard deviation	% Performance
BP apparatus	4.32	1.51	83
Thermometer	3.92	1.78	73
Bathroom scale	2.28	1.88	32
Dressing Kit/first aid box	4.56	1.26	89
Physical examination	2.64	1.10	27
Ordering of routine lab test	2.79	1.19	38
Diarrhoea management with ORS	3.57	1.22	64
Syndromic management of STDs	3.03	1.25	47
Medication Counselling	4.45	0.87	91
<i>Mean</i>	<i>3.51</i>	<i>1.34</i>	<i>60</i>

quality of the care process¹⁶. In many instances process can indirectly predict outcome e.g. syndromic management of STDs and use of ORS in diarrhoea will likely yield favourable outcomes. The present study, which employed multiple structural and process items, can therefore relatively measure the quality of care. The study has identified a high level of involvement of community pharmacists in treatment of prevalent diseases. This may raise some legal/ethical questions as to functions of the pharmacist in health care delivery. In Nigeria, the existing pharmacy laws are yet to incorporate this aspect of pharmacy practice. However, WHO Revised Drug Strategy Resolution WHA 47.12 recognizes the key role of pharmacists in public health and the use of medicines. It emphasizes their responsibility to provide informed objective advice on medicines and their use, to promote the concept of pharmaceutical care, and actively participate in illness prevention and health promotion¹⁷.

Community pharmacies are very frequently the first contact with the health care system, often before a General Practitioner¹⁸. There is a high frequency of contacts with low barriers to access to health care: no appointments, no long waiting time, convenient opening hours, and they are located within the community. Regular contacts offer access to a wide range of people, namely, healthy persons, those showing symptoms, patients undergoing treatment, relatives and other care givers; people from all social strata.¹⁸ It would be necessary to pursue relevant policies to enhance the utilization of the untapped

potentials of community pharmacists, especially as primary health care is the central focus of Nigerian's health care delivery.

Conclusion

There is slightly satisfactory involvement of the community pharmacists in PHC services in Benin City as more than half (55%) of the pharmacists scored about 87.92 on the rating scale. The quality of care was fair.

Continuing education programmes with emphasis on health promotion and disease prevention is recommended. Additionally, inclusion of primary health care course work and experiential activities as part of the curriculum in pharmacy schools is imperative. Also the legal framework of community pharmacists' involvement in PHC should be concretized. In South Africa,¹⁹ when a pharmacist supplies medicine to a patient resulting from a specific response to symptoms or after thorough questions and examination of a patient, certain ethical and legal provisions govern his acts. While section 36(1) of the Medical, Dental and Supplementary Health Professionals Act 1974 makes it unlawful for persons other than registered medical professionals from examining a patient for a gain, sub-section 36(2) exempts a pharmacist registered under Pharmacy Act No. 53 of 1974. This makes pharmacists' initiated therapy an integral part of professional practice in PHC in South Africa. This is an example for Nigeria to follow.

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