Available online at www.pelagiaresearchlibrary.com

Pelagia Research Library

Der Pharmacia Sinica, 2014, 5(3):52-60

Der Pharmacia Sinica
ISSN: 0976-8688
CODEN (USA): PSHIBD

Assessing the quality of pharmacy practices in Wa Municipality, Upper West Region, Ghana

Sixtus B. Bayaa Martin Saana, Samuel A. Fosu, Godfred E. Sebiawu and Abdulai Nuhu

Dispensing Technology Department, Wa Polytechnic, Wa, Upper West Region, Ghana

---

ABSTRACT

A vast majority of pharmacists are concentrated in the cities of Ghana. There is therefore a wide gap between urban and rural dwellers when it comes to accessing quality healthcare. In recognition of this, the Pharmacy Council has licensed private sector drug shops called chemical shops to sell over-the-counter-medicines. This study sought to determine the qualification and knowledge as well as general dispensing practices adopted by dispensers of pharmacies and chemical shops. The study also sought to determine compliance of the pharmacies and chemical shops to laid-down regulations. A total of three (3) community pharmacies and twenty-nine (29) chemical shops were enrolled for the study. A structured questionnaire was used to interview dispensers. The study revealed that 19% of the dispensers did not have any formal education. About 48% of the dispensers had no qualification related to pharmacy. All the community pharmacies were licensed whereas 56% of the chemical shops were not licensed. At least 60% of the chemical shops were found to sell various antibiotics to the public outside the remit of their license. However, majority of the dispensers received training from the Pharmacy Council of Ghana. A considerable number of the dispensers (65%) had sufficient knowledge of the drugs being sold. The general knowledge in dispensing practices of the dispensers in the Wa Municipality was inadequate. Policy should therefore focus on strengthening regulatory enforcement, in combination with education for dispensers.

Keywords: Dispensers, Chemical shops, License, Regulation, Pharmacy Council.

INTRODUCTION

In Ghana, the vast majority of pharmacists and other health personnel live and work in the cities [1]. Due to shortage of pharmacists in many parts of Ghana, chemical sellers, chemists, traditional medicine practitioners, faith healers, and drug peddlers are involved in rendering some of the pharmaceutical services, particularly the dispensing of drugs [2]. This large gap created in the formal health sector may create an avenue for self-medication. The knowledge, skills and dispensing practices of this group of drug sellers is therefore highly critical in Ghana.

In recognition of the shortage of pharmacists in many parts of the country, the Pharmacy Council has categorized all dispensers other than pharmacists as chemical sellers and provides some training for them.

Ghana offers several pharmacies (1,915) and chemical sellers (11,430). As established by law, pharmacies must be supervised by a qualified registered pharmacist, which permits them to sell prescription only drugs. Chemical sellers, on the other hand, do not need to be supervised by a pharmacist and they are not permitted to sell prescription drugs. They must, however, be registered by the Pharmacy Council of the Ministry of Health [3,4].

The quality of dispensing may be determined by the training and supervision the dispenser has received and the drug information available to the dispenser. It has been reported in some developing countries that majority of drug

sellers lack formal education and training, and those with the requisite training are often not available to supervise the chemical shops and pharmacies [5,6].

In order to effectively improve the quality of dispensing, the dispenser should have knowledge, skills and attitudes to carry out the dispensing process rationally. Lack of the requisite dispensing knowledge and skills could lead to medication errors and increase adverse medicine outcomes, thus compromising the desired therapeutic outcomes [7]. In addition, the knowledge and skills of the dispenser would afford him/her the ability to know which medicines are to be sold with or without prescription. A study conducted in southern Vietnam reported a high sale of prescription-only medicines to patients without legal and ethical considerations, thereby casting doubts on the knowledge of dispensers [8].

The qualifications of people who undertake dispensing activitiesin many developing countries include qualified pharmacists, medicine counter assistants and dispensing technicians. In situations where these qualified persons are not available, medical doctors, nurses and the salespersons having no dispensing-related education may undertake dispensing activities. Salespersons without any knowledge in dispensing often rely on information obtained from pharmaceutical sales representatives who may recommend drugs with high profit margins [9].

There has not yet been any systematic research conducted on the nature and quality of pharmaceutical care in the Upper West Region of Ghana. Little is known about quality of pharmacy care in Ghana.

This study sought to determine whether Pharmacy attendants (dispensers) have the requisite qualification and knowledge and also, to assess the conditions under which drug dispensing shops in the Wa Municipality operate. The study further sought to determine whether the drug dispensing shops in the Wa Municipality meet the laid down requirements of the regulatory bodies in Ghana.

MATERIALS AND METHODS

Study area

This study was conducted in the Wa Municipality in the Upper West Region of Ghana. The Wa Municipality is one of the eleven District Assemblies that make up the Upper West Region of Ghana. It shares administrative boundaries with the Nadowli District Assembly to the North, the Wa East District Assembly to the East and the Wa West District Assembly to the West and South. It lies within latitudes 1º40ʻʻN to 2º45ʻʻN and longitudes 9º32ʻʻ to 10º20ʻʻW with total land area of 234.74 sq km. Currently, the total population of the municipality stands at 127,284 (male: 61,826/female: 65, 458) [10].

Data collection

The study was conducted between August and September, 2013. It involved 3 community pharmacies and 29 chemical shops in the Municipality. Each chemical shop and pharmacy was considered as a unit and only the person who was attending to clients at the time of the interviewer's visit was interviewed.

The data was collected by means of personal interview with questionnaires. There was pre- interview training for the interviewers before the questionnaires were administered. The schedule of the visit to the pharmacy or chemical shop was selected at random during opening hours. The questionnaire included three blocks of questions:

a) Personal information of the pharmacy attendant, pharmacist, medicine counter assistant or chemical seller.
b) Competence of the shop attendant and the conditions of work.
c) Licensing and inspection of premises by regulatory bodies.

The respondents were asked whether they had any training relevant to their job and if they did, the questionnaire sought to find out whether the training was beneficial in the course of their work and whether they would like to attend other training programmes.

The questionnaire also included variables that tested work experience and the knowledge of the respondents in good dispensing practices. Under these variables, the respondents were asked whether they dispense tablet using tablet counters to clients. Their opinions were sought in a situation where a client requested for services they did not provide. The respondents were also asked whether they encountered expired medicines and what they did with these medicines.

The sale of medicines not covered by the licenses of these chemical shops was determined by means of two sets of indirect questions:

a) The manufacturers of the following antibiotics available in stock: Azithromycin Capsules or Suspension, Amoxicillin, Erythromycin, Flucloxacillin, Cloxacillin Capsules or Suspension, Streptomycin, Procaine penicillin, Ampicillin Capsules or Injection and Gentamycin injection.
b) The prices of the following drugs: U-Pill, X-Pill, Cytotec and Ergometrin.

The questionnaire also covered adherence of the pharmacies and chemical shops to requirements such as licensing, facilities and inspection by the Pharmacy Council of Ghana. The licenses of the shops under investigation were physically examined. Facilities such as doors, windows, ceiling fans, air conditioners, walls and refrigerators were also examined as well as proof of inspection by a legally mandated body. The data was coded, entered and analyzed by using IBM SPSS Version 20.

RESULTS AND DISCUSSION

Licensed and unlicensed pharmacies and drug stores are very widely used as a source of treatment in Sub-Saharan Africa, and are often seen as a more affordable and/or convenient alternative to seeking medical care at health facilities. Majority (68.8%) of the respondents working at the chemical shops and community pharmacies were males. One factor that could attribute to the low number of female dispensers is the low literacy rates of females in Ghana especially the northern parts of the country. This can also be linked to cultural and social barriers in Ghana, where females are not encouraged to work in premises where they have to interact directly with males. However, this might not be the case in developed countries, where majority of females are engaged in all aspects of the economy including chemical shops and community pharmacies[11, 12].

Demographics

The predominant age groups of respondents were 18-29 years and above 40 years old, making up 47% and 38% of respondents respectively (Figure 1). Due to the increasing youth unemployment in Ghana, many of these respondents see it as a profitable business and would go into dispensing of medicines even though they lack the requisite knowledge and training. The lack of human resource in this part of Ghana could also be the reason why some older people go into the sale of drugs even though they may not have the requisite educational qualification or training in dispensing. Many of these people therefore tend to acquire some training through workshops and other forms of training in order to remain relevant in the business as observed in figure 3.

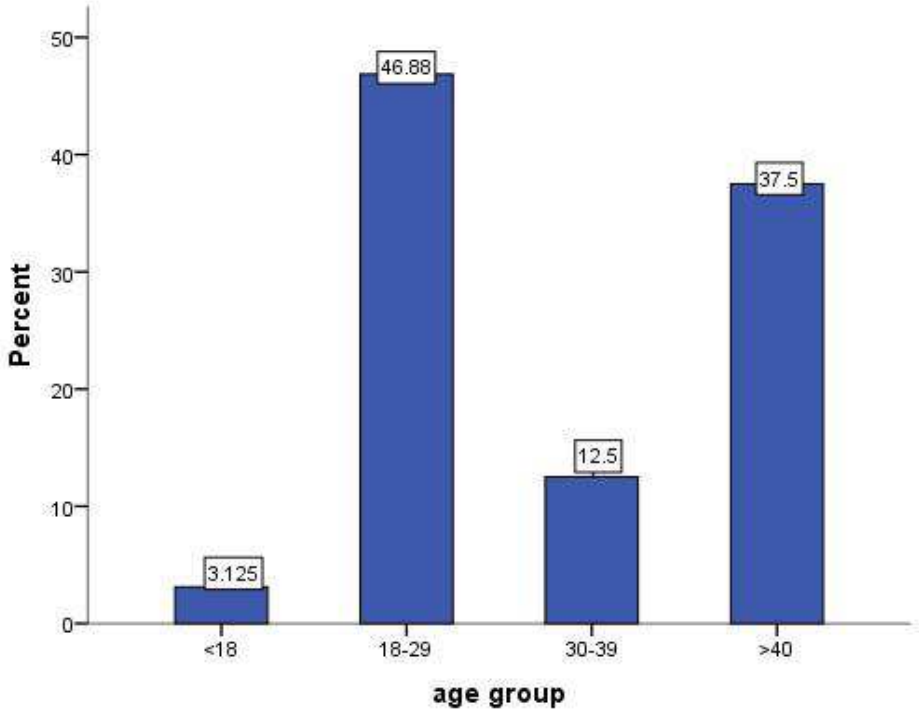

Figure 1: Graph showing age distribution of Dispensers in the Wa Municipality

Qualification/ Experience

Through the study, it was observed that dispensers working at the community pharmacies and chemical shops had

minimal formal education, with 10 to 12 years of schooling, and little or no professional training. This finding is corroborated by a study in Cambodia where almost fifty percent of pharmacy attendants had only high school education and in majority of the cases dispensers had no formal training[13].

The study also revealed that 19% of the respondents did not have any formal education, 9% had obtained only Junior High School (J.H.S) /Middle School education, 50% had obtained Senior High School (S.H.S) education whiles 13% and 6% had obtained their first and second degrees respectively (Figure 2). In all, 94% of those who had obtained secondary education fell within the age group of 18 -29 years.

According to the guidelines produced by the Pharmacy Council of Ghana for the issue of the Chemical seller's license, the applicant for a Chemical seller's license should have at least GCE O' Level, SSS certificate or its equivalent [14]. Having J.H.Sand Middle School graduates as Chemical sellers raises questions about the strict enforcement of this guideline.

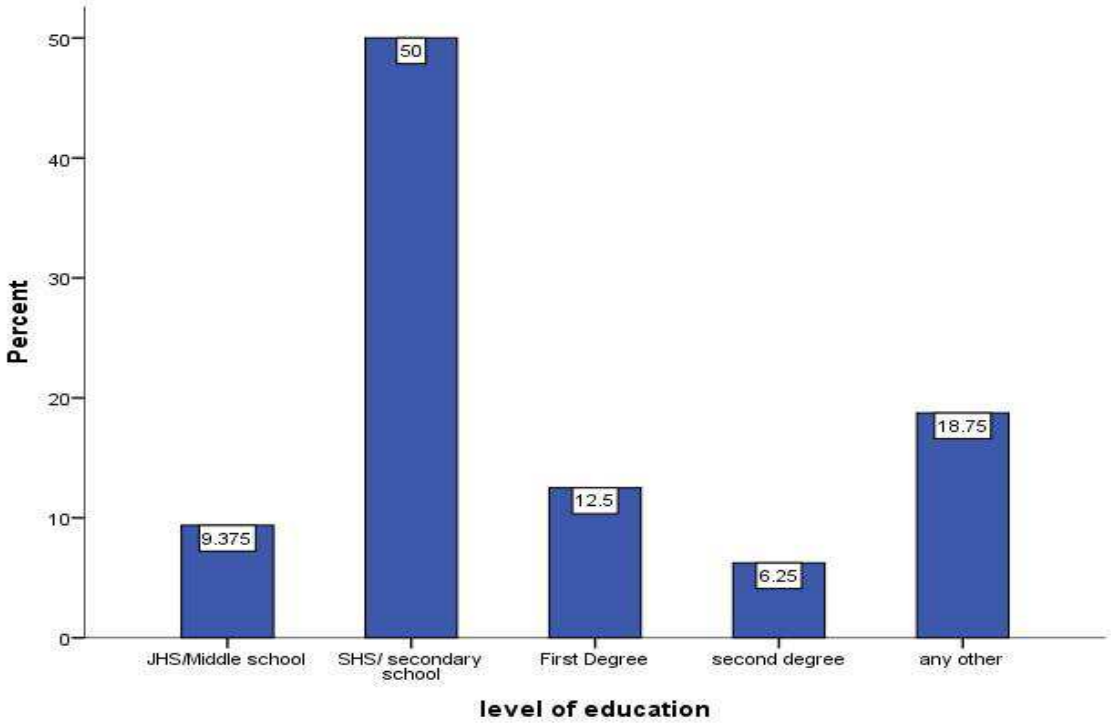

Figure 2: Educational levels of the Dispensers

It was also observed that 31% of the respondents were not the owners (license holders) of the Chemical shops visited. Moreover, there was no Pharmacist at any of the pharmacy shopsvisited during the interviews. However,all the pharmacy shops were deemed to be supervised by a registered Pharmacist. About 48% of the respondents did not have any qualification related to pharmacy or dispensing of medicines (Figure 2). Similar findings have been reported from India, where on record every community pharmacy has a license holder but in reality, few are present thereby leaving the day to day dispensing to the owners of the pharmacies, spouse or employees [15].

The low presence of license holders can be related to the poor enforcement of laws by regulatory agencies. Due to the poor implementation of available laws, some qualified persons are able to rent their licenses to the owners of pharmacies thus not only indulging in illegal practice, but also undermining their importance as health care professionals.

However, as a condition for granting a chemical seller's license in Ghana, neither the transfer of license from one location to another nor from the owner to another person is permitted by the Pharmacy Council of Ghana. Thus one of the restrictions imposed by the limited nature of the chemical seller's license is that it must be used by the holder of the license only. It makes it an offense to use another person's license [14]. Moreover, no person is allowed to open or permit any other person to open any premises to the public under the description of `pharmacy', `dispensary', `chemist', `drug store' or any other similar description unless a registered pharmacist is on the premises to supervise the dispensing of drugs or medication [16].

When the respondents were askedif theyhad receivedanyform oftrainingorattended anyworkshops relevant to their workasPharmacy/Chemicalshopattendants, majority of them answered in the affirmative. According to the respondents, these workshops were organized mostly by the Pharmacy Council of Ghana. All the respondents who attended these workshops or training programmes said they were satisfied with the outcomes. However, about 28%oftherespondentsansweredinthenegative. From our study, 47% of the respondents within the age group 18 – 29 years had not received any relevant training. This result showed that majority of these respondents who did not have any training were either not owners of the shops or were not licensed to operate them.Holders of chemical seller's licenses are able to employ the services of their parents, siblings, friends or employees without the relevant educational qualification or experience to operate their chemical shops and provide dispensing services [15].

Studies have linked inappropriate diagnosis and treatment to these unqualified and untrained pharmacy attendants[17, 18].

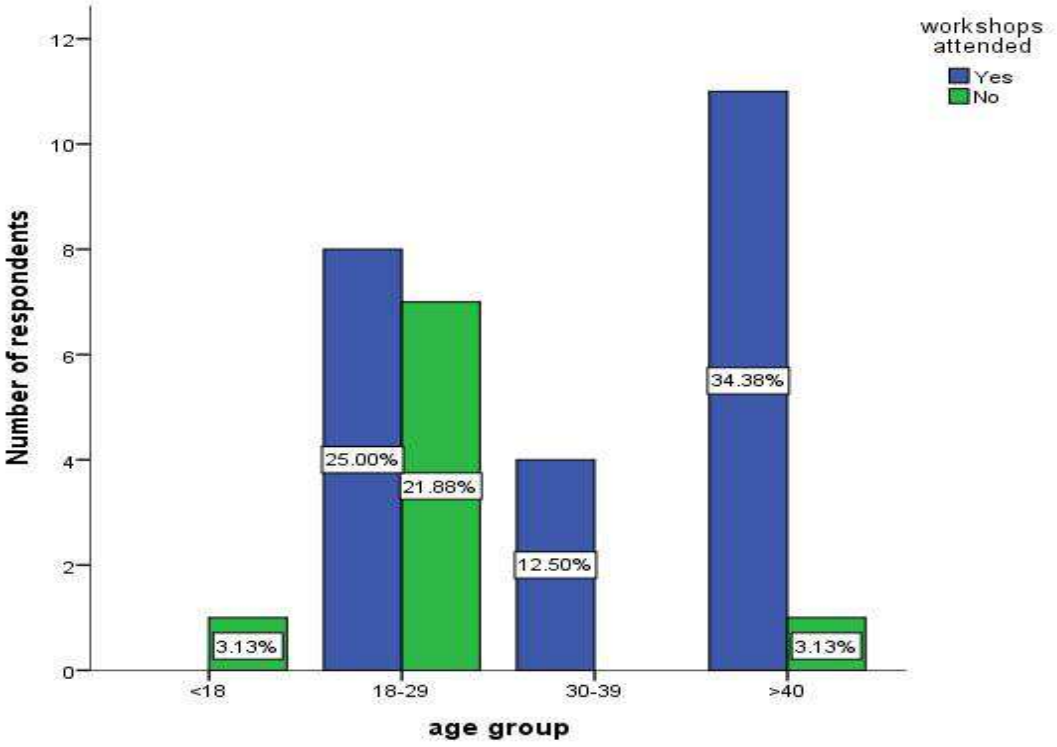

Figure 3: A graph showing Age distribution against Workshops attended

The work experience of the respondents was also assessed. About 41% of them had more than 6 years of experience, 9% between 4-6 years, 28% between 1-3 years and 22% less than 1 year of work experience (Figure 4). As shown in figure 3, it is evident that asrespondentsspentmoretimeonthejob,they weremorelikelyto obtain some relevant trainingon the job. The respondents having more than three years work experience had better knowledge of the medicines they sell. This might be attributed to the training received from the regulatory bodies to update their knowledge on new trends occurring within the health sector. This observation however contradicts findings in Pakistan and the Republic of Moldova, where fresh pharmacy graduates with very little work experience were found to have better knowledge than their counterparts who had been in the system for long[19,20].

A considerable number of the respondents (65%) had sufficient knowledge of the medicines they sold at their shops (Figure 5). At least 42% of those who displayed this sufficient knowledge of the medicines sold at their shops also had more than six years of experience. On the other hand, (7%) of respondents each who had less than one year and between 1-3 years of work experience lacked sufficient knowledge of the medicines sold at their shops (Figure 5).

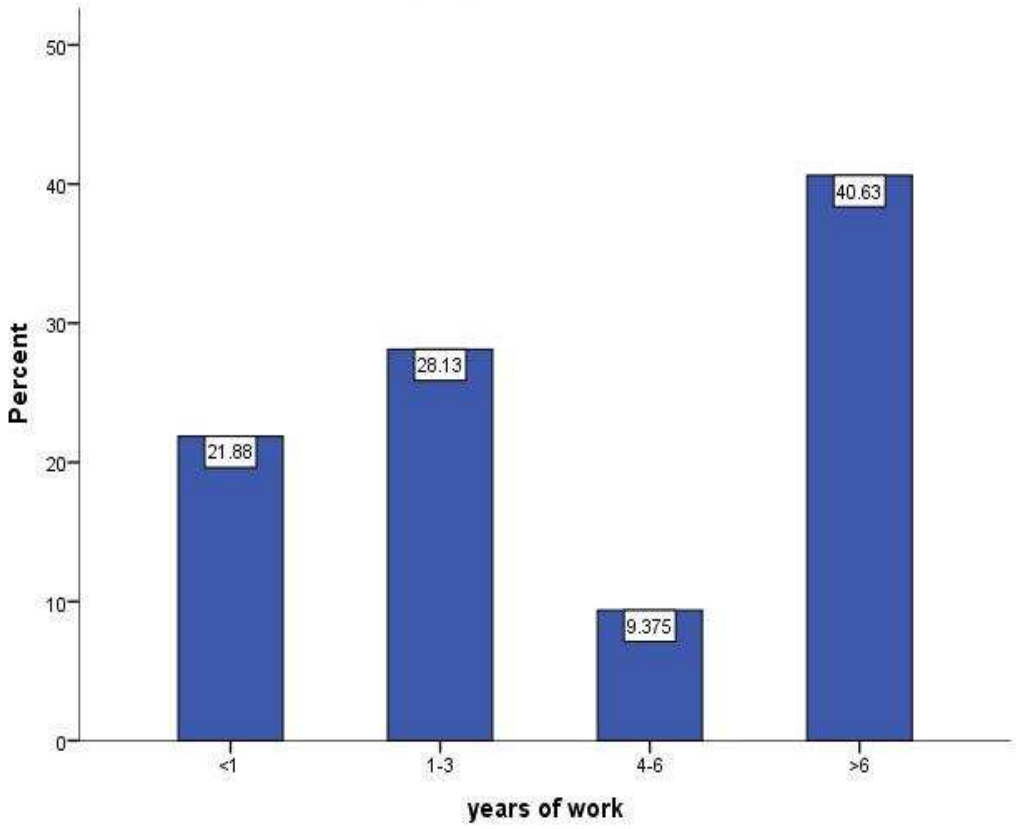

Figure 4: Graph of Work experience of the Dispensers

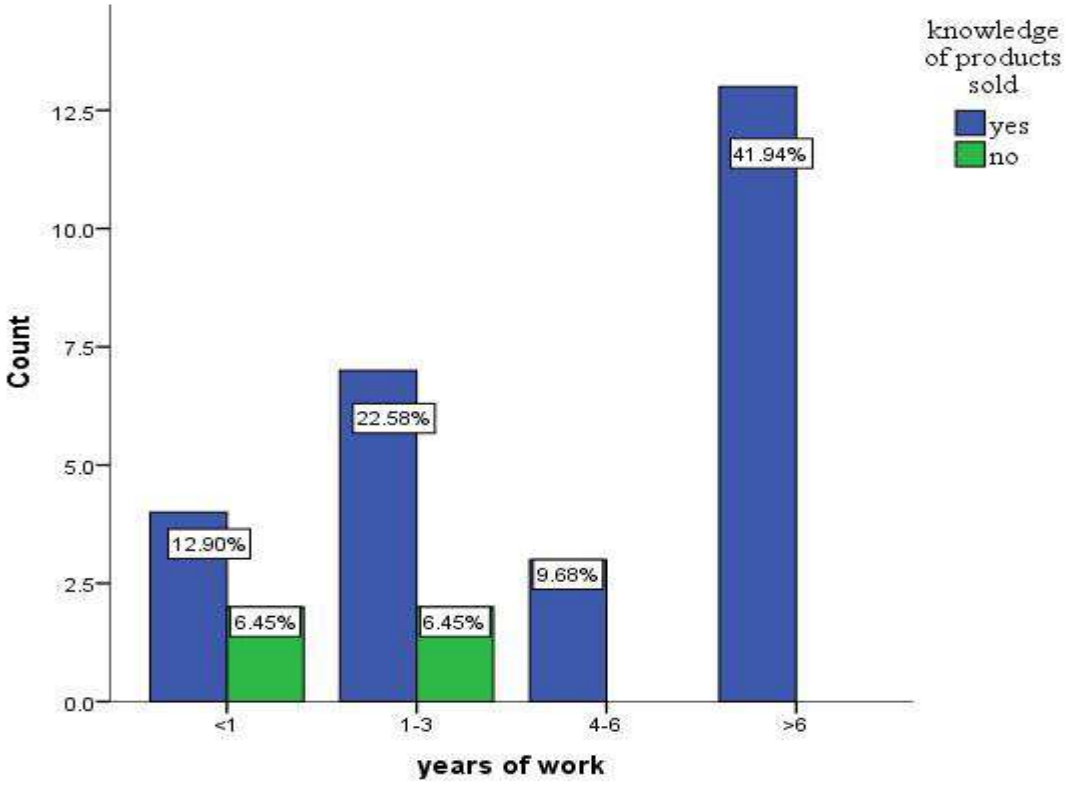

Figure 5: A graph showing the Knowledge of products sold against the Work experience of Dispensers

Dispensing practices

From the study, about 60% of the chemical shop owners were involved in the sale of antibiotics, syringes and needles to the public. Half (50%) of the shops visited sold Cotrimoxazole, which is often used as an indicator when enquiring about knowledge of antimicrobials [21]. This observation is contrary to the Pharmacy Council of Ghana regulations, which clearly indicate that licensed chemical sellers are allowed to sell or supply only Class C or Over-the-counter drugs by retail [14].

About 81% also admitted to dispensing unpackaged or loose tablets to the public. However, 47% of these respondents dispensed tablets without a tablet counting device. All the shops visited had at least smooth floors for easy cleaning. In the Wa Municipality, twenty-seven of the shops visited had fans (26 ceiling fans and 1 standing fan), while 5 had air conditioners. However, none of the air conditioners was observed to be working at the time of the visit. Thus in spite of the equipment being installed in these shops, they were not, apparently, being put to use.

A significant number (91%) of the respondents had encountered expired medicines in the course of their work. The mode of disposal of the expired medicines were varied; 19% burnt them, 4% buried them, 56% disposed them at refuse dump sites and 22% handed them over to regulatory bodies during inspection (Figure 5). Thus 78% of shops visited disposed of their expired drugs through unapproved means.

The disposal of expired medicines is a very critical indicator of the quality of dispensing practice of Chemical shops and Pharmacies. Improper disposal of expired drugs, especially antibiotics could expose soil micro-flora to suboptimum concentrations leading to antibiotic resistance. These resistant organisms may serve as reservoir for resistant genes [22]. Indiscriminate burning of expired medicines could also release toxic fumes into the environment, posing danger to people who inhale these fumes.

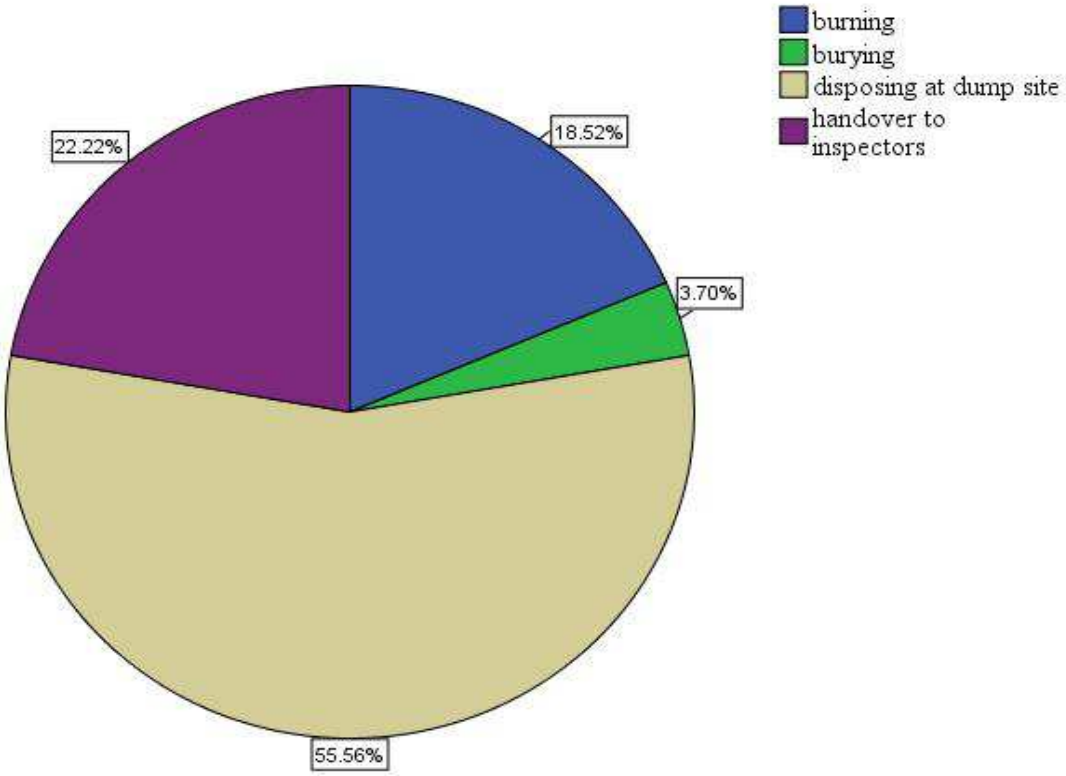

Figure 6: A pie chart showing the various ways of disposal of expired medicines

Licensing and Inspection

Though 91% of respondents claimed that their premises were licensed, only 44% of them had their licenses displayed on the premises as mandated by law [14]. Reasons given for the non-display of licenses include safe-keeping at home, delays in the processes of acquiring new licenses and renewing expired ones. However, the non-display of license was interpreted by the authors as non-registration, since there was no evidence to the contrary.

All the respondents claimed their premises were inspected regularly by either the Pharmacy Council or the Food and Drugs Authority of Ghana. However, only 71% of the respondents received feedback from these regulators after inspection. Out of this number, 63% were able to produce samples of the feedback to the interviewers. One observation was the fact that shops that had received a regulatory visit and received feedback were no different from those that had not received any feedback after inspection. It was expected that inspection would identify certain constraints with respect to general facilities and dispensing behavior that were identified in this study.

However, it is clear that inspection by the Food and Drugs Authority and Pharmacy Council did not prevent the unauthorized sale of antibiotics and contraceptives by licensed chemical sellers; neither did it ensure compliance with regulations requiring the display of licenses within the premises. Indeed, that some shops could continue to operate without licenses after admittedly being visited by these regulatory agencies is very worrying. It raises serious questions about the nature, quality and effectiveness of these visits. This pattern points to inadequacies in regulatory enforcement as evidently, not much is being achieved in promoting good dispensing behavior among pharmacy attendants and pharmacists in the municipality. This finding is consistent with a research conducted in Kenya[23].

CONCLUSION

The study highlighted inadequacies in the regulation of the activities of chemical shops in the Wa municipality. Many of the chemical shops in the municipality are not licensed. Most of them, regardless of their license status, sell various antibiotics and contraceptives against their mandate. Majority of chemical shops in the municipality dispose of expired drugs through unapproved means.Though most shop attendants meet the basic educational requirements for obtaining a chemical license, most of those offering dispensing services are not the registered license holders, against regulations. However, with time, they receive more pharmacy-related training and gain more experience on the job.

Recommendations

As much as possible, regulation of the activities of chemical shops and pharmacies in the municipality should be strengthened to ensure compliance with available laws and guidelines concerning licensing, personnel, disposal methods and sale of unauthorized items.This could involve regular, periodic visits as well as random, unannounced visits.

To improve efficiency in the regulation of the activities of chemical sellers and pharmacies, it is essential to separate the licensing of these facilities and individuals from regulation. Hence a separate body should be established to handle licensing activities whiles the Pharmacy Council and Food and Drugs authorities concentrate on regulation.

Acknowledgement

The authors are thankful to chemical shop operators in the municipality for their co-operation during the study.

REFERENCES

[1] Owusu-DaakuFTK, *Ghana Pharmaceutical Journal*, **2002**, 25, 20–23.
[2] Wijesinghe PR, JayakodyRL, Seneviratne De AR,*Pharmacoepidemiol Drug Saf*,**2007**, 16, 197-206.
[3] Karima S,*The Health Sector in Ghana: A Comprehensive Assessment*, World Bank Publications,**2012**, 2,pp45.
[4] Makinen M, Stephanie S, Ricardo B, Adjei S,*Private health assessment in Ghana - Working paper 210*, World Bank, Washington DC,**2011.**
[5] Syhakhang L, Lundborg CS, Lindgren B, Tomson G,*Pharm World Sci*,**2004**, 26(6), 333-338.
[6] ChucNTK, Tomson G, *Eur J ClinPharmacol*,**1999**, 55(4), 325-332.
[7] AbdulRBK, Fahmy SA, Abu-GharbiehEF, Ali HS,*Pharmacy Practice*, **2010**, 8(1), 70-76.
[8] Mac TL, Le VT, Vu AN, Preux PM, Ratsimbazafy V,*Epilepsia*,**2006**, 47(2), 330-334.
[9] ButtZA, Gilani AH, Nanan D, Sheikh AL, White AF,*Int J Qual Health Care*,**2005**, 17(4), 307-313.
[10] Ghana Statistical Service. Population and Housing Census. **2010**.
[http://www.statsghana.gov.gh/docfiles/2010phc/Census2010_Summary_report_of_final_results.pdf] (Date accessed: May, 29, 2014).
[11] Cordina M, Safta V, Ciobanu A, Sautenkova N,*Pharmacy Practice*, **2008**, 6(1), 1-8.
[12] HaleZT, Ahmet A, Sule O, Sanda C, SenaFS, Meral KU. *Marmara Pharmaceutical Journ*,**2010**, 14, 53-60.
[13] Poudel A, Khanal S, Alam K, Palaian S,*J ClinDiag Res*, **2009**, 3,1408-1413.
[14] Licensed chemical guidelines.
[www.pharmacycouncilghana.org/pdf/Guidelines%20CS.pdf] (Date accessed: 13th May, 2014)
[15] Oun S, Edward-Raj A, Ojuola O, Bowman G, Long WM, American Public Health Association 133rd Annual

Meeting & Exposition,10-14 Dec. **2005**, Philadelphia, USA.
[16] Pharmacy actof Ghana 1994 (ACT 489), Section 17.[http://ghanalegal.com/?id=3&law=193&t=ghana-laws], (Date accessed: 17 March, 2014).
[17] Rajeswari R, Balasubramanian R, Bose MS, Sekar L, Rahman F, *Int J Tuberc Lung Dis*, **2002**, 6(2), 171-3.
[18] Turner AN, Ellertson C, Thomas S, García S. *Sex Transm. Infect*, **2003**, 79(3), 224-8.
[19] Hussain A,IbrahimMIM,*Pharmacy Practice*, **2011**, 9(2), 93-100.
Bezverhnim Z,*Farmacia*,**2010**, 58, 3.
[20] Rabbani F, CheemaFH, Talati N, Siddiqui S, Syed S, Bashir S, ZuberiLZ,Shamim A, Mumtaz Q, *J Pak Med Assoc*,**2001**, 51, 149–154.
[21] Kenneth T.Todar's Online Textbook of Bacteriology.[http://www.textbookofbacteriology.net/ken_todar.htm], (Accessed 10 January 2014).
[22] Wafula F, *PharmaceutReg Affairs*,**2013**,2, 106.