

## Management of skin diseases among community pharmacists in Lagos, Nigeria

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### ABSTRACT

**Background:** Skin disorders can be due to infections, allergies, adverse drug reactions and sequelae to abuse of cosmetics amongst others. Pharmacists play an important role in identifying and managing skin problems, especially in Nigeria and other developing countries with few dermatologists found mainly in tertiary centres. This study aimed to evaluate and document community pharmacists' role in managing skin diseases in Lagos, Nigeria.

**Methods:** Questionnaires were administered to 140 community pharmacists (70 each in Lagos Island and Lagos Mainland chosen from the zonal list of community pharmacists obtained from Association of Community Pharmacists of Nigeria (ACPN) Lagos State Branch. Data generated were collated and analyzed using SPSS (Statistical Package of Social Sciences) version 20.0. The results were presented as frequency tables and charts.

**Results:** One hundred and twenty (120; 85.7%) questionnaires were returned for analysis. The results revealed that community pharmacists mainly treat patients with dermatological complaints with triple combination creams. The study shows that though pharmacists manage many patients with skin problems, their knowledge base is poor and treatment sub-optimal. The survey also shows that the most common skin problems encountered by community pharmacies are acne, bacterial infections and eczema.

**Conclusion:** It can be concluded from this study that pharmacists need to undergo training in management of skin diseases to help the many patients that approach them. It is recommended that community pharmacists undergo appropriate training programmes to improve their output.

**Keywords:** Community pharmacists, skin diseases, dermatology, triple combination skin creams, bacteria

## Gestion des maladies de la peau chez les pharmaciens communautaires à Lagos, au Nigeria

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### RESUME

**Contexte:** Les troubles de la peau peuvent être dus à des infections, des allergies, des réactions indésirables aux médicaments et des séquelles à l'abus de produits cosmétiques, entre autres. Les pharmaciens jouent un rôle important dans l'identification et la gestion des problèmes de la peau, surtout au Nigeria et dans d'autres pays en développement où on retrouve peu de dermatologues principalement dans les centres tertiaires. Cette étude visait à évaluer et à documenter le rôle des pharmaciens communautaires dans la gestion des maladies de la peau à Lagos, au Nigeria.

**Méthodes:** Des questionnaires ont été administrés à 140 pharmaciens communautaires (70 à Lagos Island et 70 à Lagos Mainland), choisis dans la liste zonale des pharmaciens communautaires obtenue de la Direction de Lagos de l'Association des pharmaciens communautaires du Nigeria (ACPN). Les données générées ont été collationnées et analysées à l'aide de la version 20.0 du SPSS (logiciel statistique des sciences sociales). Les résultats ont été présentés sous forme de tableaux et de courbes de fréquence.

**Résultat:** Cent vingt (120, 85,7%) questionnaires ont été retournés pour l'analyse. Les résultats ont révélé que les pharmaciens communautaires traitent principalement des patients atteints de maladies dermatologiques avec des crèmes à triple combinaison. L'étude montre que bien que les pharmaciens gèrent de nombreux patients atteints de problèmes de peau, leur base de connaissances est pauvre et le traitement sous-optimal. L'enquête montre également que les problèmes de peau les plus courants rencontrés par les pharmacies communautaires sont l'acné, les infections bactériennes et l'eczéma.

**Conclusion:** On peut conclure de cette étude que les pharmaciens doivent suivre une formation dans la gestion des maladies de la peau pour aider les nombreux patients qui les contactent. Il est recommandé que les pharmaciens communautaires suivent des programmes de formation appropriés pour améliorer leur rendement.

**Mots-clés:** pharmaciens communautaires, maladies de la peau, dermatologie, crèmes pour la peau à triple combinaison, bactéries

## INTRODUCTION

The skin is the largest organ of the human body,<sup>1,2</sup> covering 1.6 square meter of surface area and accounting for approximately 16% of an adult's body weight. The skin is in direct contact with the outside environment and helps maintain four essential body functions which include retention of moisture and prevention of permeation or loss of other molecules, regulation of body temperature, protection of the body from microbes and harmful external influences and sensation.<sup>3</sup> The skin denies entry to a large number of germs and its breakage increases the chances of infection. The importance of skin diseases is often overlooked though they are very common.<sup>5</sup> Most of them are usually not life-threatening and so they tend to be "shrugged away". Skin diseases are however a significant problem all over the world and affects the individuals' quality of life.<sup>6</sup> Skin disorders can be due to infections, allergies, inflammations, genetic abnormalities, neoplasm, side effects of drugs, pigmentary abnormalities and sequelae to abuse of cosmetics amongst others. Skin infections are amongst the most commonly encountered skin disorders in many developing countries especially in children.<sup>7-10</sup> Humans are natural hosts for many bacterial species that colonize the skin as normal flora. *Staphylococcus aureus* and *Streptococcus pyogenes* are infrequent resident flora, but they account for a wide variety of bacterial skin infections.<sup>6</sup> Common symptoms of skin disorders such as infections can include: pain, rashes, lesions, blisters, warmth, redness, swelling, soreness, itchiness, tenderness, ulcers, inflammation and pus drainage (and other discharge).<sup>11</sup> The skin is highly amenable to treatment by local application as there is intimate contact between the drug and target tissue with minimal systemic effects. A holistic approach is essential in dealing with dermatological disorders because of the profound and the far-reaching effects not only of the disease but also of treatments.<sup>12,13</sup> An empathic approach is important given the psychological and social morbidity associated with skin disease.<sup>12,13</sup> Community pharmacists play a role in promoting, maintaining and improving the health of the communities they serve.<sup>14</sup> They have an important role in healthcare delivery particularly in many resource poor settings like Nigeria where there is a dearth of specialist care, poorly structured economy and high proportion of out of pocket payment for health services<sup>15</sup> and long waiting hours in teaching hospitals to access dermatological and other care.<sup>14</sup> When care is taken to make the proper diagnosis and to institute the proper

treatment, the management of skin diseases often results in great improvement and satisfaction for patients and healthcare workers alike. In a survey carried out in Australia, it was concluded that consumers were satisfied with the advice and treatment they received from the pharmacist on the management of their skin conditions. Pharmacists' advice also appeared to be cost-effective for both the consumer and government.<sup>16</sup> The aim of this study was to determine how community pharmacists in Lagos, Nigeria manage skin problems as well as document the types and frequency of skin problems commonly encountered in pharmacies as perceived by the pharmacists.

## METHODS

The study was a descriptive study of the role of community pharmacists in the management of dermatological problems in two local governments in Lagos state namely Lagos Island and Lagos Mainland. The target population were community pharmacists in Lagos State. Seventy (70) pharmacists in each of Lagos Island and Lagos Mainland were conveniently selected from the zonal list of community pharmacists obtained from ACPN, Lagos State branch, giving a total population of 140 respondents. Permission was sought from each pharmacist before questionnaire administration.

A semi-structured questionnaire with close- and open-ended questions was employed for the study with questions to capture demographic information of respondents as well as their responses to the research questions. The data collected was collated and analyzed electronically using Microsoft Excel. The results were presented as frequency tables and were appropriate, chi square analysis was carried out. Significance was taken at 95% confidence interval and Null hypothesis (Ho) is discarded if critical  $\chi^2$  value is larger than calculated  $\chi^2$  value thus p-value  $\leq 0.05$  are considered significant.

## RESULTS

Out of a total of one hundred and forty (140) questionnaires administered to the respondents in the two areas only one hundred and twenty (120) questionnaires were returned giving a percentage recovery of 85.7%.

Sixty-Five percent of the respondents are female, 77.5% are single, 75% are Christians and 68.3% are Yoruba by tribe. All respondents indicated that they have clients with skin problems who approach them for help.

**Table 1: Socio-demographic data of respondents**

Items	Island (%) (N=60)	Mainland (%) (N=60)	Total (%) (N=120)
<b>Gender</b>			
Male	27 (45.0)	15 (25.0)	42 (35.0)
Female	33 (55.0)	45 (75.0)	78 (65.0)
<b>Marital Status</b>			
Single	45 (75.0)	48 (80.0)	93 (77.5)
Married	15 (25.0)	12 (20.0)	27 (22.5)
<b>Religion:</b>			
Christianity	42 (70.0)	48 (80.0)	90 (75.0)
Islam	18(30.0)	12 (20.0)	30 (25.0)
<b>Ethnicity:</b>			
Yoruba	34 (56.7)	48 (80.0)	82 (68.3)
Igbo	21 (35.0)	9 (15.0)	30 (25.0)
Hausa	3 (5.0)	0 (0.0)	3 (2.5)
Others	2 (3.3)	3 (5.0)	5 (4.2)
<b>Year of Graduation:</b>			
<1997	2 (3.3)	0 (0.0)	2 (3.3)
1998-2001	9 (15.)	3 (5.0)	12 (10.0)
2002-2005	8 (13.3)	0 (0.0)	8 (6.6)
2006-2009	12 (20.0)	6 (10.0)	18 (15.0)
2010-2013	25 (41.6)	51 (85.0)	76 (63.3)
<b>Years of Practice:</b>			
1-4	42 (70.0)	57 (95.0)	99 (82.5)
5-8	11 (18.3)	0 (0.0)	11 (9.1)
9-12	7 (11.6)	3 (5.0)	9 (7.5)

Most of the pharmacists encounter between 6 and 10 patients with skin problems per week and a statistically significantly difference exists in the numbers of patients with skin problems seen in both locations (p-value is 0.04). According to the respondents, the most common

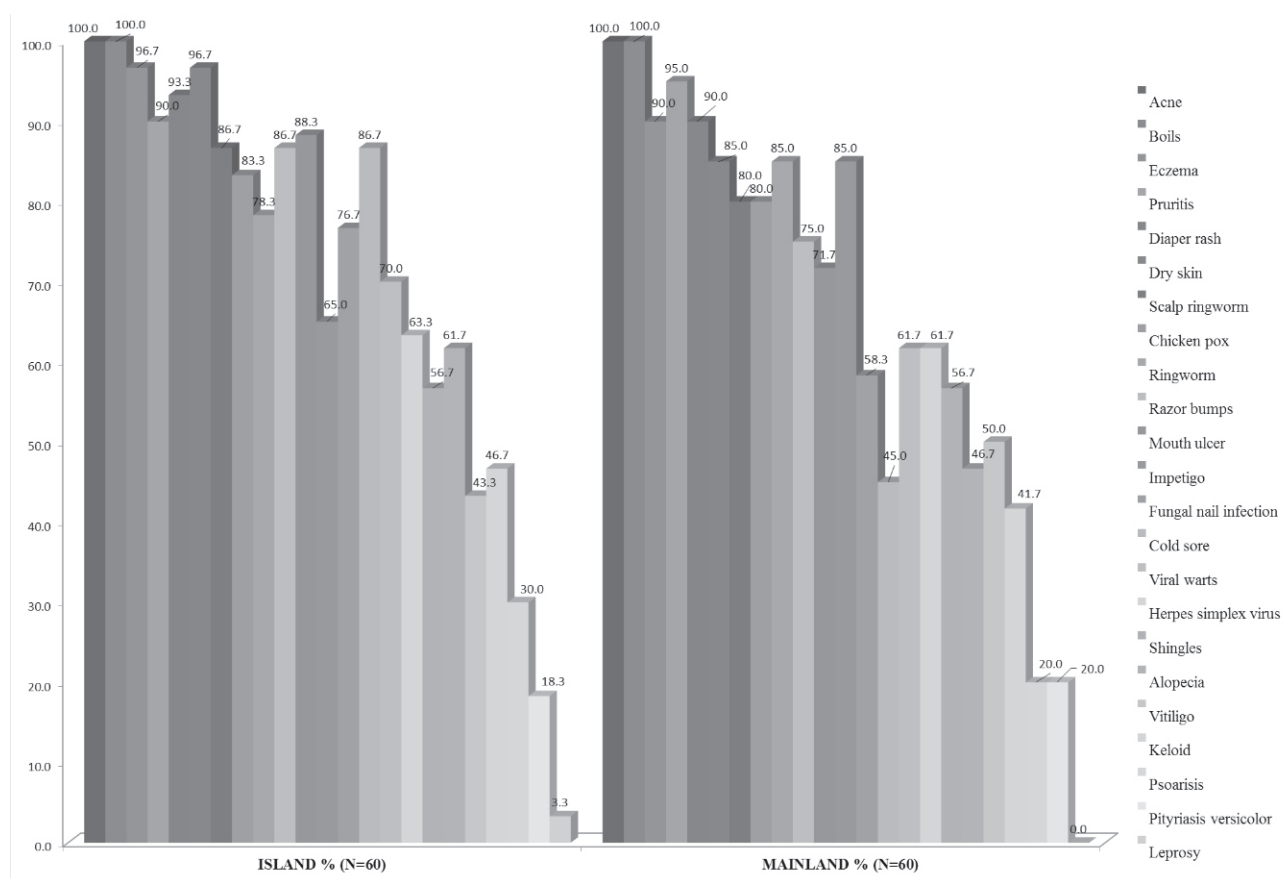
type of skin problems encountered is of viral origin and the difference obtained in the causative agent of the skin problems encountered statistically significantly different between the two locations with a p-value of 0.04 (Table 2).

**Table 2: Patients seen & causative agents of skin problems encountered by community pharmacists**

Items	Island (%) (N=60)	Mainland (%) (N=60)	Total (%) (N=120)
<b>If patients come for skin problems?</b>			
YES	60 (100.0)	60 (100.0)	120 (100.0)
NO	0 (0.0)	0 (0.0)	0 (0.0)
<b>Patients with skin problems per week?</b>			
1-5	14 (23.3)	8 (13.3)	22 (18.3)
6-10	25 (41.7)	40 (66.7)	65 (54.2)
11-15	12 (20.0)	6 (10.0)	18 (15.0)
16-20	8 (13.3)	3 (5.0)	11 (9.2)
>20	1 (1.7)	3 (5.0)	4 (3.3)
<b><math>\chi^2</math> (Critical value) Significant</b>			10.37 (9.49)
<b>Causative agent of skin problems</b>			
Viral	269 (27.6)	226 (25.4)	495 (27.3)
Bacterial	241 (24.8)	241 (26.8)	422 (23.3)
Fungal	156 (16.0)	146 (16.2)	302 (16.7)
Others	307 (31.6)	286 (31.8)	593 (32.7)
<b><math>\chi^2</math> (Critical value) Significant</b>			8.26 (7.82)

Ho is discarded if critical value is larger than calculated  $\chi^2$  value

All of the pharmacists have encountered clients with acnes and boils. Other common problems encountered are eczema, pruritus and diaper rash. Details are presented in figure 1 below.



**Figure 1: Skin problems encountered in pharmacies**

On the average, in the opinion of the respondents 76%, 38% and 34% of the skin problems are caused by use of bleaching cream, herbal remedies and bad hygiene respectively. About 24% of the causes of skin problems encountered in pharmacies are due to allergic reactions and triple action creams. The result obtained is not statistically significantly different between the two locations with a p-value of 0.07.

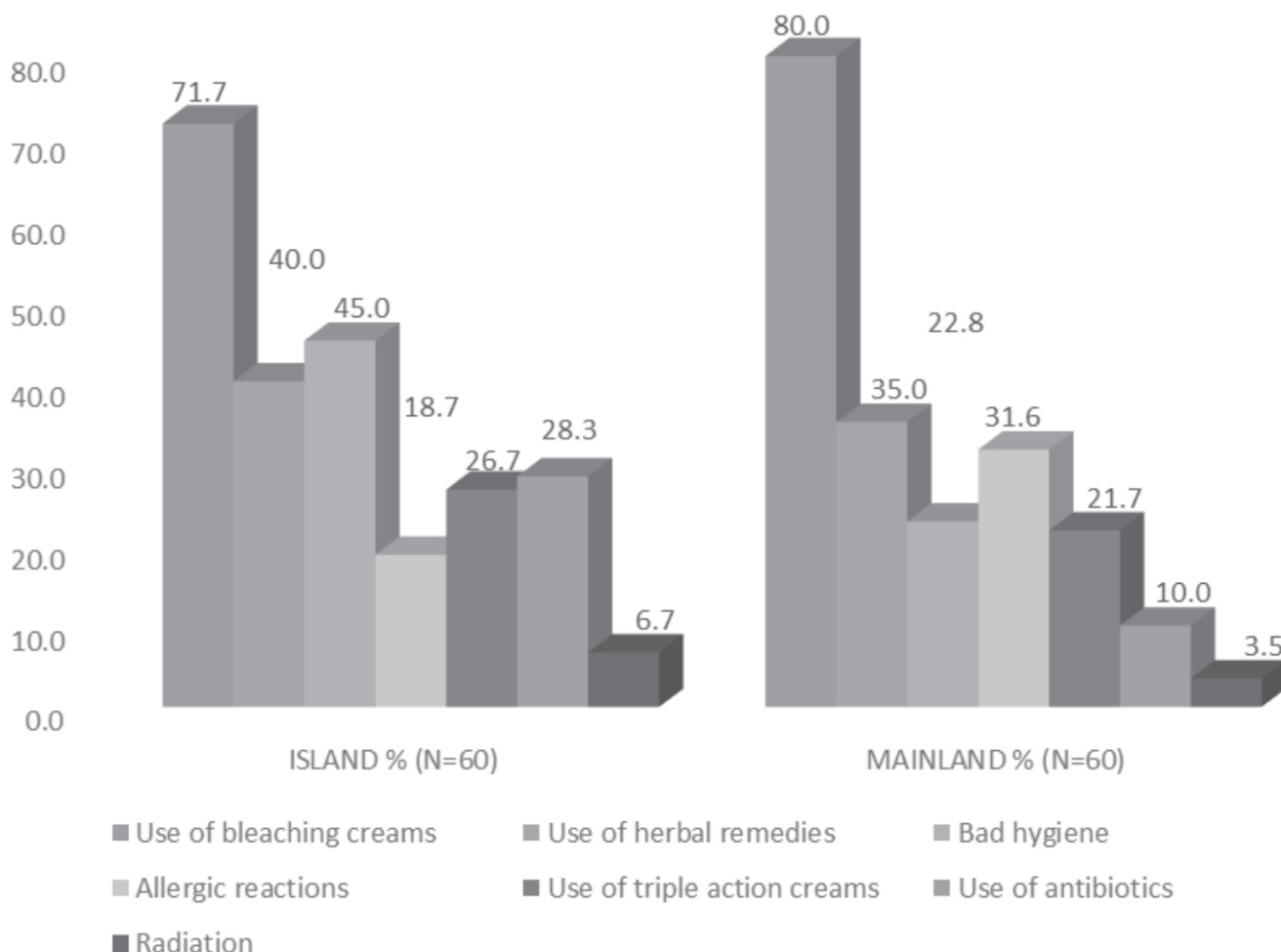


FIG. 2: Causes of skin problems encountered [ $\chi^2$  (Critical value)  $\leq$  11.80 (12.59)]

The survey showed that 87.5% of the respondents recommend triple action cream as remedy for skin problem (86.7% and 88.3% for Island and Mainland respectively). The next three actions taken for patients with skin problems are referral to dermatologist (58.3% each), recommending antifungal skin cream (45% each) and advise on skin care (38.3% and 40% respectively). The difference in the recommendations proffered by respondents in the two locations is not statistically significant at all at p-value of 0.70 (Fig. 3).

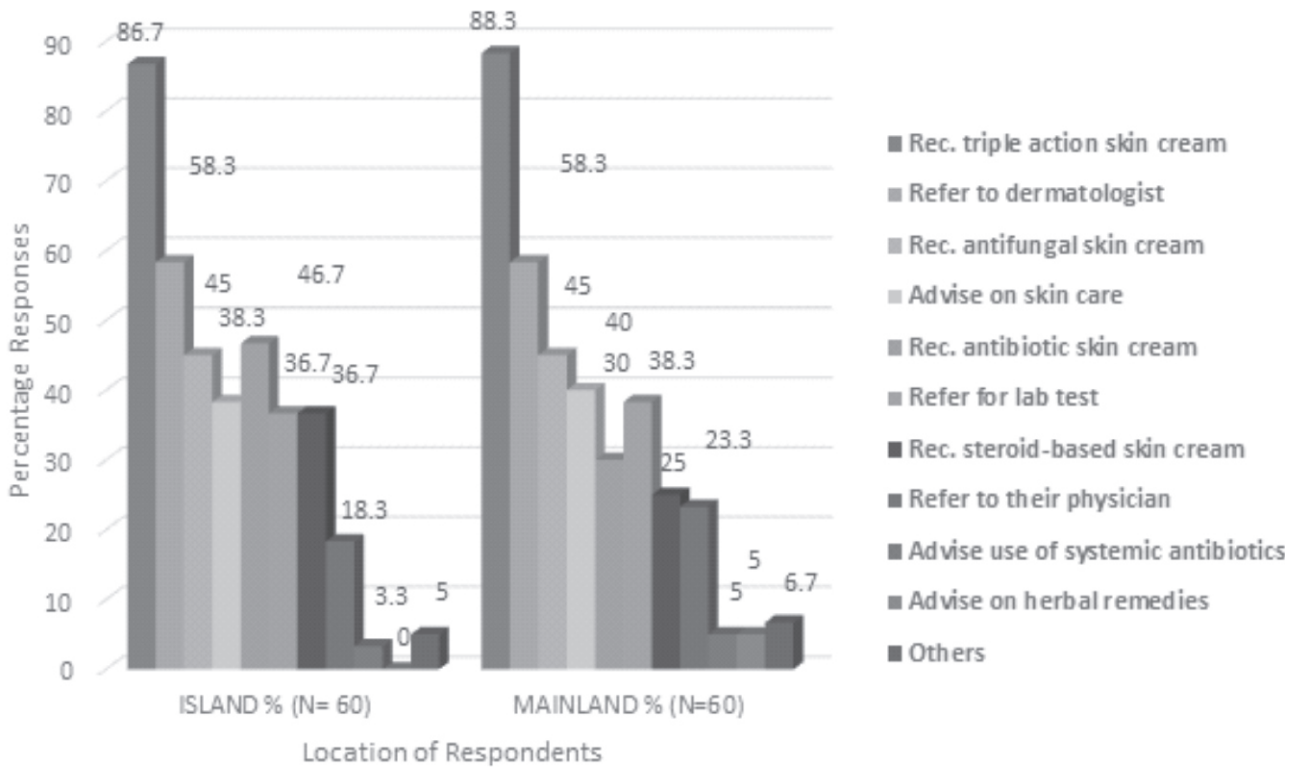


FIG. 3: Usual action taken by respondents [ $\chi^2$  (Critical value)  $\leq 7.17$  (18.31)]

Factors influencing the choice of drugs/remedy selected are mainly the type of skin problem, cost of drugs and patients request. There is no statistically significant difference in the factors between the two locations with p-value of 0.30 obtained (Fig. 4).

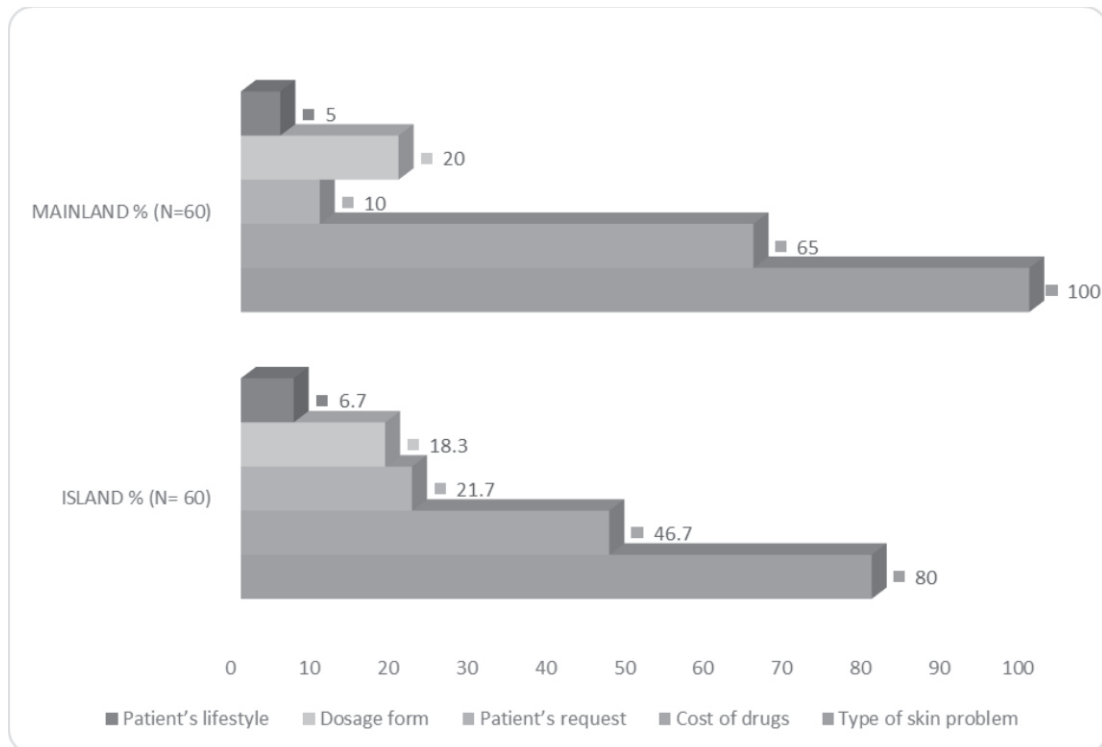


Fig. 4: Factors influencing recommended items [ $\chi^2$  (Critical value)  $\leq 4.79$  (9.49)]

About 13% of the respondents are confident that pharmacists are equipped to handle skin problems and no statistically significant difference exists between responses in the Island and Mainland at p-value found to be 0.06. Over 84% of the respondents are willing to be trained while about a third are even willing to pay for the training. (Table 3)

**Table 3: Equipping respondents to handle skin problems**

Items	Island (N=60)	Mainland (N=60)	Total (N=120)
Equipped to handle skin problems?			
Yes	10 (16.7)	6 (10.0)	16 (13.3)
No	38 (63.3)	30 (50.0)	68 (56.7)
Not sure	12 (20.0)	21 (35.0)	33 (27.5)
Sometime later	0 (0.0)	3 (5.0)	3 (2.5)
<b><math>\chi^2</math> (Critical value) Not Significant</b>			<b>7.40 (7.82)</b>
Willingness to be trained?			
Yes	56 (93.3)	45 (75.0)	101 (84.2)
No	1 (1.7)	3 (5.0)	4 (3.3)
Not sure	2 (3.3)	9 (15.0)	11 (9.2)
Sometime later	1 (1.7)	3 (5.0)	4 (3.3)
Willingness to pay for training			
Yes	25 (41.7)	21 (35.0)	46 (38.3)
No	6 (10.0)	6 (10.0)	12 (10.0)
Not sure	23 (38.3)	33 (55.0)	56 (46.7)
Sometime later	6 (10.0)	0 (0.0)	6 (5.0)

## DISCUSSION

All the respondents indicated that patients often approach them with complaints of skin problems. This is similar to a previous study which revealed that less than 50% of people seek advice from the medical practitioner, with pharmacists being the most common of the other sources of advice.<sup>17</sup> According to the World Health Organisation,<sup>18</sup> it is the pharmacist's duty to detect the predominant minor symptoms affecting the population and to develop strategies for self-medication and responsible self-care practices. In a study in France, about 26% of patients who had suffered from a skin condition sought advice from the pharmacist.<sup>19</sup> Literature has also shown that community pharmacists are one of the most accessible healthcare practitioners globally.<sup>20</sup> Community pharmacies in Nigeria, as in many developing countries, are a widely used source of advice about health concerns and medication<sup>21-24</sup> for reasons including easy accessibility, short waiting time, convenient hours of operation, cost effective, access to credit, and option to buy medications in small amounts<sup>21,25-27</sup>. While pharmacists are an important source of care for all social strata, they are often primary healthcare

“providers” for poor and less educated clients<sup>26,28,29</sup>. There are limitations to the extent to which pharmacists were trained on specific disease states, this limitation does not, in any way, prevent the influx of patients requiring the help of the pharmacist in preventing, treating or managing various conditions such as sexually transmitted infections (STIs) and skin problems in many developing countries<sup>30-32</sup>. Literature shows that people are often misinformed about their conditions and may be using treatment that is of no value probably because of inadequate knowledge or experience of carer<sup>17</sup>. A study carried out in West Sussex, UK shows that many patients refer to their general practitioner rather than pharmacists for minor health issues.<sup>33</sup>

It was documented in this study that patients with complaints of boils and acne are seen by all respondents surveyed. Leprosy is the least encountered in both locations which is expected because of the nature of the condition. However, this may be due to poor hygiene<sup>35</sup> or a low level of suspicion or knowledge of its accurate diagnosis by the pharmacists. Eczema, pruritus and diaper rash are quite common affecting over 80% of the respondents. Unlike a survey done in a rural setting in Cameroon where the cases of eczema seen was very



low (only 4%)<sup>34</sup>, eczema cases are quite common in this survey as over 90% of the respondents indicated that patients visit them with this complaint. In another survey carried out in France, only about 8% of the skin disorders was found to be eczema and like findings in this study, the most common skin disorder was acne.<sup>19</sup> Acne was one of the first four skin disorders identified in another study carried out in Maryborough.<sup>36</sup> In a study carried out on primary school children in Ibadan, Oyo state, Nigeria, fungal infections and scabies were the most common skin diseases while allergic illnesses were nearly absent.<sup>37</sup>

The top three causes of skin problems documented in this survey are use of bleaching or lightening creams, herbal remedies and poor hygiene. Though herbal remedies have not been subject to rigorous testing, there is still a sharp rise in the use of herbal and complementary and alternative medicines (CAM) for various condition. Healthcare providers, including Pharmacists should therefore, be knowledgeable about these products and provide reliable information to their patients about them in a non-judgmental manner<sup>38,39</sup> such that patients can get the best out of the use of these remedies. For instance, patients may use herbal remedies without considering its effect on their skin or if it would worsen or alleviate existing skin diseases.<sup>40</sup> Herbal medications have been found to aggravate certain skin conditions and cause irritant contact dermatitis.<sup>41</sup>

The type of skin problem was a major determinant of what the Pharmacists recommended to patients. In a study undertaken in 1998, it was documented that the type and severity of skin condition also influenced the management of the condition.<sup>42</sup>

The most commonly prescribed regimen by the respondents are the triple action skin creams. This may be due to lack of patience to properly identify the skin problem, lack of knowledge on appropriate management strategy or a lack of appropriate tools for diagnosis.<sup>43</sup> Literature shows that familiarity with skin barrier function, the effects this has on the absorption of medication through the skin and specific classes of over-the-counter (OTC) treatments for various common skin infections is required for proper management of skin problems rather than using the triple action creams.<sup>44</sup> It has also been reported that although the vast majority of skin infections must be treated with systemic antibiotics, use of topical antibiotics are rampant globally.<sup>45</sup> It is documented that topical antibiotics are advised to treat minor superficial uncomplicated skin infections (such as impetigo) and to prevent bacterial infections caused into minor cuts,

scrapes, and burns.<sup>46</sup> People are frequently misinformed about their conditions and may be using treatment that is of no value hence the value of enlightenment programs cannot be overemphasized.<sup>17</sup> Most of the respondents believe that patients with skin problems should be managed at the community pharmacy even though many of them are not sufficiently equipped to help them. Research shows that common ailments can be managed at the community pharmacy thus creating more capacity at the public hospitals for patients with more complex needs.<sup>47</sup>

Many of the respondents are willing to be trained to ensure better services are provided. Low rate of correct identification of commonly encountered skin diseases probably due to inadequate knowledge among the pharmacists is major limitation to their management activities in the community. With improved training, pharmacists can be a more cost-effective option in managing minor skin diseases particularly as they are a 'first port of call' for advice on minor illnesses.<sup>35, 47-49</sup> Adequate and effective training coupled with the provision of appropriate treatment guidelines will also help pharmacists refer appropriately.<sup>50</sup>

## CONCLUSION

The results obtained showed that community pharmacists in Lagos encounter many patients with skin problems confirming that pharmacists play an important role in healthcare delivery in many resource poor settings like Nigeria. The respondents are aware that they have a critical role to play in the management of skin problems and are willing to be trained further to improve their skills and practice. Pharmacists from both Lagos Island and Mainland had similar answers to questions which showed that the difference in location has little or nothing to do with management of skin problems.

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