

Evaluation of access to raw materials for pharmaceutical production in the Federal Capital Territory Abuja, Nigeria

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ABSTRACT

Background: Access to raw materials for pharmaceutical production is a major concern for pharmaceutical companies because it invariably brings about higher cost of medication.

Objectives: The objective of this study was to evaluate access to raw materials for pharmaceutical production in FCT Abuja by determining factors affecting its availability, local production as well as determining ways to encourage its local production.

Methods: The census approach was used in conducting the study as there were only three operational pharmaceutical companies identified in FCT. Six pretested and validated questionnaires were administered to production and operations managers and oral in-depth interview was conducted for the Managing Director/Chief Executive Officers of the pharmaceutical companies using in-depth interview guide. The sites of the study were located at Gwagwalada, Kubwa and Bwari respectively. Data collected was analyzed using the IBM Statistical Package for Social Sciences version 21.0, (2012) for frequencies and percentages. The contents of the oral interview were analyzed for specific perspectives of interest to the study and general patterns of opinions in alignment with study aim and objective.

Results: Majority of the respondents (83.3 %) indicated they imported raw materials for production while 66.6 per cent of respondents stated that raw materials for pharmaceutical production were not easily accessible in FCT. Similarly, 83.3 per cent indicated that it was not cheap or affordable and 83.3 per cent agreed that local production of raw material will bring down cost of medications. Furthermore, the entire respondents were of the opinion that high dependence on importation of the raw material was a major cause of draw back on its availability.

Conclusion: The study revealed that raw materials for pharmaceutical production were not readily available in the FCT.

Keywords: FCT Abuja, Local Production, Pharmaceutical Company, Pharmaceutical Raw Materials.

Évaluation de l'accès aux matières premières pour la production pharmaceutique dans le Territoire de la capitale fédérale Abuja, au Nigéria

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RÉSUMÉ

Contexte: L'accès aux matières premières pour la production pharmaceutique est une préoccupation majeure pour les sociétés pharmaceutiques car il entraîne invariablement une augmentation du coût des médicaments.

Objectifs: L'objectif de cette étude est d'évaluer l'accès aux matières premières pour la production pharmaceutique dans le FCT Abuja en déterminant les facteurs affectant leur disponibilité, la production locale ainsi que les moyens d'encourager sa production locale.

Méthodes: L'approche du recensement a été utilisée pour mener l'étude car il n'y avait que trois sociétés pharmaceutiques opérationnelles identifiées dans le FCT. Six questionnaires pré-testés et validés ont été administrés aux responsables de la production et des opérations et des entretiens oraux approfondis ont été menés pour les directeurs généraux des sociétés pharmaceutiques à l'aide d'un guide d'entretien approfondi. Les sites de l'étude étaient situés respectivement à Gwagwalada, Kubwa et Bwari. Les données recueillies ont été analysées à l'aide du progiciel statistique IBM pour les sciences sociales version 21.0 (2012) pour les fréquences et les pourcentages. Le contenu des entretiens oraux a été analysé pour identifier les perspectives spécifiques d'intérêt pour l'étude et des modèles généraux d'opinions en accord avec le but et l'objectif de l'étude.

Résultats: La majorité des répondants (83.3 %) ont indiqué qu'ils importaient des matières premières pour la production tandis que 66,6% des répondants ont déclaré que les matières premières pour la production pharmaceutique n'étaient pas facilement accessibles dans le FCT. De même, 83,3% ont indiqué que ce n'était pas bon marché ou abordable et 83,3% ont convenu que la production locale de matières premières permettrait de réduire le coût des médicaments. En outre, tous les répondants étaient d'avis que la forte dépendance à l'égard des importations de matières premières était une cause majeure de la baisse de leur disponibilité.

Conclusion: L'étude a révélé que les matières premières pour la production pharmaceutique n'étaient pas facilement disponibles dans le FCT.

Mots-clés: FCT Abuja, production locale, société pharmaceutique, matières premières pharmaceutiques.

INTRODUCTION

The Nigerian pharmaceutical industry is a multimillion-dollar industry that contributes to the nation's GDP. In addition, it enhances medicine security which is essential and contributes to the overall security of any nation. According to a United Nations Industrial Development Organization report, "in Nigeria, a population of over 140 million [now over 190 million] represents a huge potential market; local expertise and experience in the manufacture of essential medicines exists."¹ Therefore, the commercial prospect for local drug manufacture in Nigeria is positive.

Local pharmaceutical production can help to shorten the supply chain and greatly alleviate the problems of drug shortages and stock-outs of essential medicines, ensuring reliable and timely access to needed medicines. With increased local production, Nigeria's high dependence on imported products could be reduced thereby decreasing the influx of substandard and falsified medicines into the country.² However, one of the main reasons for the low-capacity utilization in the pharmaceutical manufacturing sector in Nigeria lies in difficulties in acquiring required pharmaceutical raw materials in the country. Despite the government's efforts to promote domestic manufacturing, Nigeria remains heavily reliant on imported pharmaceuticals raw material. According to the Association of Industrial Pharmacist of Nigeria (NAIP), about 90 percent of raw materials for pharmaceutical production are imported into Nigeria.³

Over dependence and reliance on imported raw material makes production of pharmaceuticals vulnerable to unstable world market, which invariably leads to higher cost of medication and increased cost of health care. A study in Abuja argued the need for a drug pricing policy as well as necessary interventions for local production that aims to reduce the high prices and wide disparity between prices of medicines.⁴ An online search has shown that there is paucity of data on access to raw materials for pharmaceutical production especially in Northern Nigeria. This study evaluated access to raw materials for pharmaceutical production in FCT Abuja while determining factors affecting its availability and factors affecting its local production. It also sought to determine ways to encourage local production of pharmaceutical raw material in FCT Abuja.

METHODS

Research Setting

This study was conducted at three functional pharmaceutical production companies that were in active operations located in the Federal Capital Territory Abuja (GPS coordinates Latitude: 9.0579° N, Longitude: 7.4951° E). The study was conducted in only those companies available due to scarcity of pharmaceutical companies in the FCT. The relevant management staff (production manager and Operations manager) of the three companies were served questionnaires, whilst the Managing Director/Chief Executive Officers were administered oral in-depth interview. The companies were New Age Pharmaceuticals Limited, Pack and Bottles Packaging Company Limited and Giddyson Pharmaceuticals Limited located at Gwagwalada, Kubwa and Bwari respectively. Their products line included oral liquid preparations, oral solid preparation, ointments and lotions for topical application. Others are herbal preparations and pharmaceutical packaging materials. Generally, they are classified as secondary and tertiary pharmaceutical production industries.

Study design

The census approach was employed in conduct of the study. Two types of research methods were considered to be relevant in this research: qualitative and quantitative methods of data collection techniques. With the qualitative source of data technique, data was collected by means of an oral in-depth interview. The structured oral in-depth interview method of data collection targeted the CEO and Managing Directors of the pharmaceutical companies visited. Similarly, for quantitative source of data, a pre-tested and structured questionnaire with thirty-two (32) questions was designed for data collection. The self-administered questionnaire consisted of both open and close ended questions that covered bio-demographic data and questions relating to the research. A total of 6 questionnaires were administered to only production and operations managers in each of the three factories of the pharmaceutical companies.

Data analysis

A total of 6 questionnaires were distributed to two management staff from the three pharmaceutical companies. The production manager and operations manager of each company were given a questionnaire, amounting to six respondents for the study. The purpose of the study was explained to the respondents and

consent was obtained before the questionnaires were administered. All questionnaires were successfully completed and returned thereby having 100 % return rate. The number of questionnaires was fixed at six because these would capture the desired opinion of the key and relevant personnel that have the knowledge of the study subject matter in the pharmaceutical companies visited. These included the production manager and the Managing Director/CEO. The code book and coding sheet were designed manually and all data captured were transcribed and recorded. Subsequently, the data obtained was computed into an IBM Statistical Package for Social Sciences (SPSS) Version 21.0. Descriptive statistics was carried out for frequency distribution and percentages.

RESULTS

Respondents' opinion on access to raw materials in FCT

The respondents were all key personnel of the company and would have good perspective and knowledge on the access to raw material for pharmaceutical production. While 33.3 per cent of respondents source their raw material locally, 16.7 per cent respondents import their raw materials. Another 50.0 per cent procure their raw material both locally and through importation. Similarly, 33.3 per cent purchase their pharmaceutical material from Lagos. Also, 33.3 per cent purchase their raw materials from Kano and Lagos while 16.7 purchase from Lagos, Onitsha and Abuja. This means that less than 16.7 per cent of the respondents purchase some of their raw material from Abuja. Therefore, majority of the respondents purchase most pharmaceutical raw materials used in production outside the FCT. (Table 2).

Ease of accessing and affordability of pharmaceutical raw materials in FCT

The distribution of respondents' ease of accessing pharmaceutical raw materials shows that 33.3 stated that it was easy to access pharmaceutical raw materials.

However, 66.6 per cent stated that it not easy accessing pharmaceutical raw materials. Also, 16.7 per cent believe that raw materials are affordable. However, 83.3 per cent of respondents indicated that it is not cheap or affordable.

Satisfaction of respondents on quality of local raw materials

The distribution of respondents' opinion on quality of local raw materials compared to imported ones shows that 66.7 per cent of the respondents believe that local raw materials are not lower than imported ones while 33.3 per cent of the respondents were not certain. On the respondents' satisfaction with locally manufactured raw materials shows that 33.3 per cent are extremely satisfied, 16.7 per cent very satisfied while another 16.7 per cent are somewhat satisfied. Hence, 66.7 per cent are satisfied with locally manufactured.

Respondents' opinion on local production of raw materials

Respondents' opinion for local manufacturing of pharmaceutical raw material shows that 83.3 per cent agree that local companies should venture into manufacturing of pharmaceutical raw materials. Conversely, 16.7 per cent disagree that local companies should manufacture raw materials for pharmaceutical production.

Opinion on effect of local product of raw materials on cost of medicines in Nigeria

Respondents' view on if local production of pharmaceutical raw material could bring down the cost of medicines in Nigeria shows that 83.3 per cent agrees while only 16.7 per cent disagrees.

Additionally, 16.7 per cent of respondents agree the country has all it takes to start local manufacture of pharmaceutical raw materials while 66.7 per cent disagree. However, 16.7 per cent were not sure.

Table 1: Socio-demographic characteristics of respondents

Variables	Frequency	Percent (%)
Age Interval (Years)		
26-30	1	16.7
31-40	4	66.6
41-50	1	16.7
Gender		
Female	1	16.7
Male	5	83.3
Highest Educational Qualification		
O'Levels	1	16.7
OND	1	16.7
HND/Bachelor Degree	3	49.9
Masters Degree and Above	1	16.7
Position of Respondents		
High level Employee	4	66.7
Top level Employee/CEO	2	33.3
Year of Establishment (Years)		
0-10	5	83.3
11-20	1	16.7
Period of Employment (Years)		
0-5	3	50.0
6-10	1	16.7
11-15	2	33.3

Source: 2022 Field Data

Table 2: The distribution of finished Pharmaceutical products

Number of Finished Pharmaceutical Products	Frequency	Percent (%)
1-4	1	16.7
5-15	2	33.3
Above 15	1	16.7
Not applicable	2	33.3
Source of Procurement	Frequency	Percent (%)
Procured Locally	2	33.3
Importation	1	16.7
Procured Locally and by importation	3	50.0
States of Procurement	Frequency	Percent (%)
Lagos	2	33.3
Kano and Lagos	2	33.3
Lagos and Onitsha	1	16.7
Lagos, Onitsha and Abuja	1	16.7

Source: 2022 Field Data

Table 3: Respondents' Opinion on Pharmaceutical Raw Materials

Ease of accessing pharmaceutical raw materials	Frequency	Percent (%)	
Yes	2	33.3	
No	4	66.7	
Affordability of pharmaceutical Raw materials	Frequency	Percent (%)	
Yes	1	16.7	
No	5	83.3	
Cost of Raw Materials	Frequency	Percent (%)	Remarks
Active Ingredient	4	66.7	
Not applicable	2	33.3	

Table 4: Respondents' opinion on quality of local raw materials compared to imported ones.

Quality of local raw materials	Frequency	Percent (%)
Not lower than imported raw materials	4	66.7
Not certain	2	33.3
Satisfaction with locally manufactured raw materials	Frequency	Percent (%)
Extremely satisfied	2	33.3
Very satisfied	1	16.7
Somewhat satisfied	1	16.7
Not applicable	2	33.3

Table 5: Respondents' view on if local pharmaceutical companies should venture into manufacturing of raw materials

	Frequency	Percent (%)
Yes	5	83.3
No	1	16.7
Total	6	100.00

Source: 2022 Field Data

Table 6: Respondents' view on if local production of pharmaceutical raw materials could bring down cost of medicines in Nigeria.

	Frequency	Percent (%)
Yes	5	83.3
No	1	16.7
Total	6	100.00

Source: 2022 Field Data

Table 7: Nigeria has all it takes to locally manufacture pharmaceutical raw materials

	Frequency	Percent (%)
True	1	16.7
False	2	66.6
Probably	1	16.7
Total	6	100.00

Source: 2022 Field Data

Outcome of oral interview

Respondents stated that the desired quantity of the pharmaceutical raw materials was not readily available at the FCT, hence they purchased from other states outside the FCT and imported some into the country. They further expressed the difficulties encountered in transporting these raw materials from the port of entry in Lagos, and other states to the FCT. These difficulties, according to the respondents, raised the cost of production. The respondents remarked that most of the raw materials used for pharmaceutical production were imported into the country. It was their belief that imported raw materials were expensive and the process of importation was fraught with a lot of challenges. These challenges include:

- Poor access to foreign exchange for sourcing and importing raw materials.
- High Import Duty/Tariff
- High transportation cost and risks involved during transportation.
- Complicated Custom Administration.
- Logistics problems such as delay at port of loading, delays at transshipment, cancellation of inbound vessels.
- Complicated documents and certificates required during importation.

Furthermore, the respondents were of the opinion that a few companies in the country manufacture some pharmaceutical excipients for pharmaceutical production. However, there was no company in the FCT that manufactures pharmaceutical raw materials, be it APIs, or excipients. In addition, the respondents stated that the few raw materials purchased locally were of good quality and opined that local production of more of these raw materials would make these raw materials more available and ultimately bring down the cost of medication in the country. They further agreed that they would confidently purchase pharmaceutical raw materials that is manufactured locally. However, they stated some factors that impede the local production of pharmaceutical raw material as follows:

- The requirement for high standards in operating pharmaceutical companies
- Cost of machineries and technologies used in pharmaceutical companies.
- Unfair taxation system in the country.
- Competition with similar imported drugs.
- Inability of the government to check illegal

importation which competes with the locally made products.

- Lack of effective research and development due to poor research support from government in the form of grants.
- Unfair government policies.
- Poor marketing and administrative structure of some existing pharmaceutical industries.
- Inadequate human resources/ technical know-how resulting mainly from brain drain.
- Poor infrastructure such as power supply, transportation system and water supply.
- Insecurity in the country.
- Poor financial incentives such as low interest loan, tax holidays and kick off grants.

The survey revealed that local production of raw materials for pharmaceutical production in FCT could be encouraged and promoted through the following steps:

- i. Provision of credit facilities for prospective investors.
- ii. Creation of Pharmaceutical industrial hubs in FCT.
- iii. Provision of grants for research institutes and collaboration of these institutes with pharmaceutical companies.
- iv. Enforcement of local content policy.
- v. Provision of adequate and affordable power supply and creation of favorable policies by the government.
- vi. Subsequently, a structured ban on importation of raw materials.

DISCUSSION

The objective of this study was to evaluate access to raw materials for pharmaceutical production in the FCT, Abuja, and to evaluate factors hindering local production with the aim of developing strategies to improve local production of raw materials for pharmaceutical production. From the study, over 50 percent of respondents indicated that they imported raw materials for production. This number confirms that a significant portion of local manufacturers do not procure raw materials from local sources. This was attributed majorly to the lack of access to the raw materials in the FCT as attested to by 66.6 percent of the respondent. Moreso, this finding agrees with the statement by the National Association of Industrial Pharmacists (NAIP) that about 90 percent of raw materials for pharmaceutical production are imported into Nigeria. Another factor that the respondents claimed made them opt for importation

of raw materials is the high cost of local alternatives as stated by 83.3 percent of the respondents. While one may be tempted to assume that quality is one of the factors responsible for increased importation of pharmaceutical raw materials, the research proved otherwise as 66.7 percent of the respondents believe that the quality of local pharmaceutical raw materials is not lower than the imported one.

The study highlighted that enormous opportunities and market exist for local production of pharmaceutical raw materials. The over 50 percent of pharmaceutical manufacturers currently importing raw materials already serve as a huge market for locally manufactured raw materials. Hence the economic or commercial viability of locally manufactured pharmaceutical raw materials in country is positive. Additionally, with over 67.7 percent of respondents claim that lack of access to pharmaceutical raw material in the FCT was one of the reasons for importation. It is only logical that strengthening local manufacture of pharmaceutical raw materials will mean that pharmaceutical raw materials will be closer and more accessible to the pharmaceutical manufacturers. This was argued and canvassed by a report that encouraging Local Production of Raw Materials: Initiatives should be implemented to promote local production of raw materials, such as APIs and specialty chemicals. As it would reduce dependence on imports, enhance the availability of essential materials, and improve the country's control over the pharmaceutical supply chain.⁵

About 83.3 percent of the respondents stated that local production of pharmaceutical raw materials will bring down the cost of medications. This finding is validated in a similar survey which showed that government and private sector investment in increasing the capacity of the pharmaceutical industry to produce pharmaceutical raw materials locally will yield positive economic results for the parties involved. Thus, indirectly benefiting the patients in form of decreased cost of medications.

The study highlighted that locally manufactured raw materials are of good quality even when compared to the imported ones, as 66.7 per cent of the respondents stated that quality of local raw material is not lower than imported ones. Likewise, majority (66.7 per cent) are satisfied with locally manufactured raw material, thus the Nigerian Pharmaceutical industry has what it takes to manufacture pharmaceutical raw materials that meet global standards locally. This was affirmed by a study on

the potentials of some Nigerian herbs and spices as source of pharmaceutical raw materials.² Additionally, 83.3 percent of the respondents strongly advocated that local companies should backward integrate by venturing into manufacturing of pharmaceutical raw materials, as there is market for pharmaceutical raw materials.

This study also revealed some factors that are hindrances to local production of pharmaceutical raw materials - some of the factors stated are high standards in operating pharmaceutical companies, unfair government policies, poor financial incentives and insecurity. Others are poor infrastructure, competition with similar imported drugs, lack of effective research and development, unfair taxation system in the country and inadequate human resources. These factors are very similar to the ones reported in another study on challenges of the manufacturing sector in Nigeria.⁶

CONCLUSION

The study revealed that raw materials for pharmaceutical production were not readily available in the FCT. A robust pharmaceutical manufacturing through promotion of local production would strengthen Nigeria's manufacturing sector. It will enable the nation harness local raw materials and develop new drugs while improving existing formulations, ultimately ensuring medicines availability and reduce the over reliance on importation of pharmaceutical raw materials.

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REFERENCES

1. United Nations Industrial Development Organization. UNIDO (2011). Global UNIDO Project: Strengthening the Local Production of Essential Generic Drugs in least Developed and Developing Countries. Pharmaceutical Sector Profile: Nigeria. Viewed 9 January 2022, <https://www.unido.org/sites/default/files/2011>
2. Egharevba H, (2018). Potential of some Nigerian Herbs and Spices as Source of Pharmaceutical Raw Materials: Opportunity for Global Market Competitiveness. *International Journal of Pharmacognosy and Phytochemical Research* 9(12).

3. Adeniyi-Jackson J. (2019). Phamaceutical Raw Materials Imported in Nigeria National Association of Industrial Pharmacists of Nigeria National Pilot Newspaper. <https://thenationalpilot.ng/2019/03/25/90-phamaceutical-raw-materials-imported-in-Nigeria-naip>.
4. Danraka AM, Aniekan AE, Musa SK, Ndiana-Abasi SI, (2022). Evaluation of Drug Pricing in Nigeria: A Focus on Affordability and Availability of Essential Medicines in Federal Capital Territory Abuja. *Journal of Health, Medicine and Nursing*, Vol. 97: 1-10. DOI <https://doi.org/10.7176/JHMN> ISSN 2422-8419
5. Danraka A and Akande A, (2023). The Significance of Synthetic Chemistry in Advancing Pharmaceutical Research and Development in Nigeria: A Call to Action. *The Nigerian Journal of Pharmacy*. 57 (2) 758-764. ISSN: 0331 - 670X <https://doi.org/10.51412/psnnjp.2023.36>
6. Oyati E. (2010). The Relevance, Prospects and the Challenges of the Manufacturing Sector in Nigeria pp 4-1