Halal Pharmaceutical Industry in Nigeria: A bitter pill to swallow

Carrie Amani Annabi [a] Suhayr Mustapha Wada [b]

[a] Faculty of Logistics and Supply Chain Management, SML. Heriot-Watt University. Dubai, UAE
email: c.annabi@hw.ac.uk

[b] Logistics and Supply Chain Management Programme, SML, Heriot-Watt University, Dubai, UAE

Abstract

Notwithstanding Nigeria's large Muslim population of 89.25 million citizens, very little research has been carried out in terms of addressing Halal needs in Nigeria. This qualitative case study reviewed the perspective of 32 respondents, (15 patients, 15 doctors and two pharmacists), in a medical centre in Abuja, Nigeria on their perceptions on and awareness of Halal pharmaceuticals. The interview data were collected through telephone interviews. Data analysis and findings were examined against the literature reviewed in this study. Findings concluded that there was a lack of awareness of Halal medicine products within Nigeria and that this was the primary reason why the respondents felt that there was a dearth of Halal pharmaceuticals. There were also secondary concerns from the patients about the risk of counterfeit medicine and the doctors were worried at the potential cost of providing Halal pharmaceutical options in case it deterred patients from buying the (Halal) medicaments prescribed. The pharmacists were supportive of Halal pharmaceuticals in principle but highlighted issues surrounding both the efficacy of alternatives and the effectiveness of some current ingredients that might be deemed unacceptable in Halal preparations.

Keywords: Halal; Halal Supply Chain; Halal Pharmaceuticals; Halal Medicine; Nigerian Halal Pharmaceuticals; Nigerian Halal Medicine

1. Introduction

Nigeria is a country of over 178.5 million people (UNFPA, 2014) with over 250 ethnic groups, 36 federal states and the Federal Capital Territory (FCT), Abuja. Half of Nigeria's population is Muslim (Pew Research Center 2010). Abuja is home to 2.8 million Muslims (National Bureau of Statistics, 2014). The Minister of Agriculture had galvanized Nigeria to expand its capacity in Halal products in order to satisfy the Halal needs (Adeshina, 2013). This supports the belief that Halal products are high in demand in Nigeria. Nigeria is currently bereft of an official Halal regulatory certifying organization for food or pharmaceuticals (Annabi & Lolade, 2015).

The Halal pharmaceutical concept is relatively new to the global market (Siddiqui, 2014) which is hardly a surprise since the wider field of Halal logistics and supply chain management is still nascent (Tieman, 2013). According to the Global Islamic Economy Summit (2013) Halal has been primarily developed in three different categories: Halal Food, Halal Pharmaceuticals, and Halal Cosmetics. These are valued respectively at US$1,088 billion, US$70 billion, and US$26 billion. Although the former is the most widely known of the three concepts (Siddiqui, 2014) Halal pharmaceuticals are growing in recognition and the global Halal pharmaceutical industry is worth some US$800 billion annually (Nain et al., 2013).

2. Literature Review

2.1 The Difference between Halal and Haram

"Halal" as an Arabic word coming from the Quran that means permitted, allowed, lawful or legal (Riaz & Chaudry, 2004). The opposite is haram which means unlawful, illegal or not allowed for a Muslim. Halal is usually applied to food, speech, conduct, dress and behaviour. The most important principle with regards to Halal and haram is the permissibility of certain things whose right is with Allah alone (Al Qaradawi, 2007; Zakaria, 2008). Halalan tayyiban is a combination of lawfulness (Halalan), and goodness and safety (tayyiban). "*Halalan tayyiban product means any products that are not harmful and safe to be consumed as underlined by the Sariah law, and thus is allowable and permissible*" (Omar et al., 2013 p. 3). It represents a concept of wholesomeness, which comprises quality, cleanliness and safety for all expected to eat from what is lawful and also to eat only what is good and safe for the body (Shah and Yusof, 2014) .

For example, animals such as cows, goats and sheep, which are considered Halal, are expected to be slaughtered while mentioning the Tasmiyah (mentioning the name of Allah, i.e. Bismillahi, Allahu Akbar), and haram foods that should not be eaten include the flesh of an animal found dead, pork, swine flesh, predators, and any animal slaughtered while invoking a name other than Allah.

> "*The Prophet Muhammad made lawful for consumption, two types of dead meat and two types of blood: Fish and Locust (dead meat), Liver and Spleen (blood)*" (Surah al-Maidah, verse 53 from Al-Qaradawi, 1999).

"Makruh" or "karaha", also written as makrouh/makrūh/makrooh is an Arabic term which means to dislike or an offensive act and is the opposite of liked or loved. Though it is not haram (sinful), a person who abstains from this act will be rewarded. Muslims are encouraged to avoid such actions or foods as much as possible. A makruh product is one that is of doubtable source.

2.2 Implications for Halal Pharmaceuticals in Nigeria

Medicines are defined as a substance used to alleviate, nurse, cure or to prevent illness in humans or a substance used to promote better hygiene (Lokman, 2001). Medicine can be ingested, applied, injected or used internally through some other aperture (Lokman, 2001; Halim et al., 2014). Medicines that contain prohibited ingredients can be used only when there is no other alternative (Easterbrook & Maddern, 2008).

IbnQayyim (n/d) was the source of rationalisation by Zarif et al., (2013) for justification of the use of non-Halal medicine in permissible circumstances. Al-Asqalani (2000) called upon a tradition narrated by Anas ibn Malik where the Prophet Muhammad (PBUH) permitted the use of camel's milk and urine to cure stomach sickness. This Hadith shows that in permissible circumstances impure things, (i.e. camel's urine) are tolerated remedies for certain diseases; this could be compared with the case of intoxicants whereby the intoxicant is acceptable strictly for a particular circumstance. Al-Qaradawi (2007) suggested that haram products are potentially permissible in the event of certain conditions; the medicine containing alcohol is necessary for the life of the person who takes it, that it was recommended by a knowledgeable and trustworthy Muslim physician, and there were no Halal alternatives.

There is some guidance in the Quran and Hadith that relate to the use of the word "khamr" (alcohol/intoxicant). Haleem (2005) offered a translation of the Quran where he argued that "khamr" has a combined connotation which encompasses all forms of intoxicants although the specific contexts in the Quran only referred to the consumption of alcohol. Ali (2104) has provided the following explanation:

"*Al-Tabari (d. 923) writes that "khamr" is every drink that intoxicates the mind, veils it, and covers it. It may be that during Muhammad's time in Arabia, alcoholic beverages, such as khamr (wine made from grapes or dates), bit' (wine from honey), and mizr (beer from barley), were the only available forms of intoxicants. There is no evidence of drug abuse resulting from recreational drug use, such as hemp (hashisha), henbane (banj) or opium (afyun), during the formative period of Islam. The Quran does not mention them nor were they a social problem, such that Muhammad had to give specific guidance about them*" (p. 915).

This will explain why at the time that the four scholars Hanafi, Maliki, Shafie and Hanbali were writing they hardly mentioned harmful drugs, owing mainly to the fact that such drugs were not in widespread use (Halim et al., 2014). It was only in 1983 that The Council of Rulers in Malaysia issued a Fatwa. This forbade misuse and the abuse of drugs with an endorsement that curative drugs can only be used as medicines in accordance with the Sharia (Taib, 1989). The new Malaysian Standard for Halal Pharmaceuticals (Department of Standards, 2012) required curative drugs to use ingredients that are accepted by Islamic law. In order to meet this standard only Halal substances should be used. The end products and all the materials used therein (e.g. packaging) must be free from "najis" (filth). This makes the medicine safe for human consumption. Safety in the Halal pharmaceutical context means that the medicine is non-hazardous, non-poisonous, and non-intoxicating to humans when consumed, injected or applied for the purpose of therapeutic curing or for healthy-living.

Malaysia is the lead country in developing a global Halal certification standard, and Jabatan Kemajuan Islam Malaysia (JAKIM) is the body that authorizes the Halal integrity of products and associated Halal certifying organizations (HCOs) that issue the ensuing logo. The official portal for the Malaysian Halal Hub (2016) detailed 32 countries that have JAKIM recognized and affiliated HCOs. Nigeria does not have a globally authenticated HCO. Ironically countries with smaller Muslim populations such as Australia, Poland, Switzerland, the United Kingdom, and the United States of America are all listed which evidences that there has been consideration of religious needs where the Muslim demographic is relatively low unlike Nigeria, where 50% of the population, amounting to 89.25 million citizens, is Muslim. This perhaps introduces the idea of awareness and demand.

There has been little demand for Halal pharmaceuticals in Nigeria. Despite the growing Muslim population, this populous has not widely demanded Halal products. Grabenstein (2013) reported that in Kano city, (in Nigeria's Northwest region), polio vaccines were rejected due to the erroneous belief that these vaccines were infected with Human Immunodeficiency Virus (HIV). According to Alqudsi (2014), the lack of awareness of the importance of Halal products consequently reduces demand. For example only recently have Muslim consumers voiced mandates for food and other non-food Halal services, such as financial instruments (Ismail, 2014). As the demand for Halal pharmaceuticals increases, the need for industries to be Halal certified will also increase (Shabana, 2013). Lada, et al., (2009) suggested that as Halal awareness grows then the concept and demand will expand beyond Halal food to encapsulate other markets.

Malaysia is the global gold standard for Halal certification (Samori et al., 2014). The Malaysian Halal Standard offers an official standard on Halal pharmaceuticals through code MS 2424:2012, with products carrying a logo (Department of Standards, 2012). However there is not yet global recognition of this headway and even recent literature has suggested that this standardisation is still in development (e.g. Azeez et al., 2014). Importantly, subscribing to a regulatory body to assure quality throughout the supply chain strengthens collaboration and helps build resilience into the continuity of supply (Tieman & Maznah, 2013).

2.3 Research on Halal Pharmaceuticals

Saleha et al. (2013) studied the perception, attitude, and knowledge of various medical practitioners. Their research concluded that many of the doctors were aware of the importance of patient knowledge as to whether or not a product was Halal and that the doctors from their study were in favour of appropriate "Halal" or "non-Halal" labelling for medicines.

Fogel and Ebadi (2011) conducted a survey related to two vaccines used to prevent the human papillomavirus (HPV). The survey was carried out in different regions of India, which included a region with a high Muslim demographic. HPV is a sexually transmitted disease that can cause genital warts and the vaccines were created to prevent infection. Many Muslim parents refused to have their daughters vaccinated because they believed that that it might encourage promiscuity. Some of the Muslim parents also queried if the vaccine was derived from Halal sources.

Daher et al. (2014) explored how often patients requested Halal pharmaceuticals from pharmacists in Australia. One major issue that pharmacists in Australia faced was the lack of proper packaging that suited the Muslim patients' needs. This created challenges such as re-contacting the pharmaceutical industries to confirm the list of ingredients. Muslim patients were clearly uncomfortable as long as the source of an ingredient was non-Halal. When it was established that some of the tablet form medicine was non-Halal, most patients preferred to substitute the pills for medicine presented in syrups.

2.4 Status of Ingredients in Medicine

The manufacturers' lists of ingredients on medicine packets tend not to be comprehensive. In order to be in accordance with Sharia law, all non-Halal animal derived ingredients should be replaced with Halal ingredients: These sources are the components that make the final products Halal or haram.

An illustration of the hierarchy of Halal medicines where ethanol (alcohol) is used in the production is described in the following, adapted from Azeez et al. (2014): If the medicine is derived from active and inactive Halal sources then the final product is Halal. However, if ethanol is used in the preparation, then

the final product would be makruh (doubtful). What makes it doubtful is whether the ethanol evaporated during the process of heating or crystallization as there are scholars who might still agree it is Halal. However if the ethanol in the final product was in another non-solid form, then the Halal status of that medicine remains makruh.

The use of alcoholic products as sources for medicines is still doubtful for producing Halal medicines (Nasaruddin et al., 2012). This rule applies to all unlawful ingredients used to produce the medicine. There are two main types of capsules used to produce medicines. The first is used for dry ingredients, and the second is the one used for liquid-like ingredients, such as primrose oil. These are both derived using gelatin. Gelatin can be derived either from plants (Halal) or from animals (haram). The haram source is used more frequently because it is less expensive than plant-based gelatin (Shah and Yusof, 2014). The risks involved in producing a certifiable Halal product involve strict monitoring of the entire process from the beginning of production to the point that the customer receives the product hand-in-hand. These processes include handling, packaging, storage, and transportation and therefore should be compliant with a Halal supply chain (Tiemen, 2013).

Sources of ingredients like heparin, gelatin, ethanol, glycerin, glycerol and the enzyme trypsin are mostly non-Halal derived. Other ingredients like stearates, (magnesium, calcium and stearic acid) are generally sourced from lard or fatty acids from pigs' stomachs and are used as lubricants and binders, although they can also be derived from vegetables (Shabana, 2013). Pharmaceutical ingredients such as gelatin have raised religious concerns due to its derivation from non-Halal animal products (Karim and Bhat, 2008).

Alcohol is believed to be more harmful than useful in Islam. It was mentioned in a Hadith by the Prophet Muhammad (PBUH), "*Khamr (Alcohol) is not a medicine, but a disease*". The Prophet Muhammad shed more light on the statement, saying, "*Allah has sent down the disease and the cure, and for every disease, there is a cure. So take medicine, but do not use anything haram as medicine*" (taken from Al-Qaradawi, 1999). Although in a later version of this scholar's works it was suggested that haram products are potentially permissible if certain conditions exist (Al-Qaradawi, 2007).

2.5 Halal Certification in Nigeria (or the lack of it)

Nigeria has one of the world's largest Muslim population (O'Neil & Sachs, 2014). The country does not have Halal certification processes so is bereft of legal policies on Halal production. Nigeria practices some Halal concepts in the finance and banking field (Oshodi, 2014). Bello et al. (2013) commented that the term "Halal" was synonymous with animal slaughter in Nigeria. They also noted that major abattoirs failed to meet a minimum health and cleanliness standard and they attributed this failing to poor general hygiene, poor animal care, contaminated cross handling, and the lack of clean, chilled storage. Bonne and Verbeke (2008) also highlighted the absence of hygiene and stated that handling, preparing, storage, and transporting were of a dubious standard within the Nigerian beef cold chain. This implies that general hygiene processes are neglected. The interlinkage between preparation, handling, storage, and segregation from non-Halal sources and maintaining a robust supply chain was often overlooked in Nigerian Halal Beef production due to the lack of common standards or authentic governing agencies on all food production, rather than from a willful intent to mislead (Annabi & Lolade, 2015).

The National Agency for Food and Drug Administration and Control (NAFDAC) attested that counterfeit medicines made in Nigeria was one of the galvanizing forces that led to the creation of its agency (NAFDAC, 2013). The World Health Organization (2014) has deemed counterfeit medicines as drugs that are purposely and fraudulently mislabelled, in order to mislead the identity or source of the

medicine. NAFDAC is the only government food and drug administration in Nigeria. NAFDAC specializes in monitoring counterfeit medicines, the control of importation and exportation of medical devices, food and cosmetics, and the resultant distribution of these products (NAFDAC, 2013). In fact only recently NAFDAC recalled a dietary supplement because they discovered it contained undeclared ingredients like sibutramine, desmethylsibutramine, and phenolphthalein. These additions made the supplements unapproved drugs for which safety and efficacy had not been established. NAFDAC advised that these products were potentially life threatening if taken concomitantly with other medication (NAFDAC, 2016). This in itself was a positive step as previously Annabi and Lolade (2015) had reported that "*Despite NAFDAC's guidelines for controlling the country's food industry, Nigeria is unwilling to enforce regulations; predominantly believed to be because of corrupt practices*" (p. 4).

Nigeria is included in the several assessments of international corruption (e.g. the World Bank's Worldwide Governance Indicators, 2014; Transparency International's Corruption Perception Index, 2015). For example, in the Transparent International Report (2015) Nigeria ranks 136 from the 167 listed countries in relation to corrupt practices.

2.6 Pull Strategies for Halal Products

Push supply chains require the production of goods in advance, while pull supply chains mean the production of goods according to orders placed (Klass, 1998). Mazahir et al. (2011) list a benefit of the push strategy as the economies of scale it can master, but it suffers from an uncertainty in demand. Whereas a pull strategy responds to customer demands and can be adapted to control demand fluctuations, it faces costs concerns because it lacks economies of scale.

3. Research Methodology

Goddard and Melville (2004) defined research as the process of answering questions or seeking a non-existent part of study, which adds to existing information. Kowalczyk (2014) stated that exploratory research is an investigation for something new. The purpose of this research is to explore the awareness of and perceptions on Halal pharmaceuticals in Nigeria by patients, doctors and pharmacist in a medical centre in Abuja. The research design used a case study approach, which focuses on the Halal concept. The single case study provides an opportunity to better understand but its limitations are that the results cannot be generalised.

There are two main data collection techniques to be used in this research. They include the use of semi-structured interviews and a further ratification interview with one member from each group (patients, doctors and pharmacists). A semi-structured interview is usually an interview planned and arranged in advance, which involves open ended questions, and is the most widely used form of interview in a qualitative research (DiCicco-Bloom & Crabtree, 2006). Examples of the types of questions used were, "*Explain the prescribing decisions you make with a patient*", "*Do you consider the patients'' religious background when prescribing and if so, what considerations are made*?" and "*As a patient, do you consider what ingredients are used in your medicines? If you do consider ingredients, how is that consideration expressed?"* If prompting was required then the patient was further asked*, "For example do you read the ingredients on the medicine packet, ask the doctor or consult with the pharmacist?*"

A semi-structured interview was believed to be appropriate for this research because it organized questions in such a way as to elicit meaningful answers for analysis. The semi-structured interviews were

conducted by telephone as the researchers were resident within the United Arab Emirates. Whilst there are a number of limitations to a telephone interview there are also advantages. Bryman and Bell (2011) list these as low-cost, easy supervision (i.e. the ability to rephrase questions), less time-consuming, and less pressure on the interviewee due to physical absence of the interviewer. There was good reason to avoid the typical yes/no styled questions and that was based upon the issues reported by Maratsos and Kuczaj (1978), as cited by Hattori, (2003), who indicated that "*doubling errors occur more frequently in contexts that cannot be simply characterized by the involvement of subject auxiliary inversion nor movement of a verbal element*" (p. 2). They noted that it was not uncommon for interview subjects to use the incorrect verb form or apply past morpheme affixes redundantly for did-questions and does-questions, inserting a redundant auxiliary for repeated modal questions. Although the study by Maratos and Kuczaj (1978) involved children, Shin and Kellogg (2007) found that for English as a foreign language (EFL) speakers, early language development should be reconceptualised as language equivalent to primary school-level linguistics, hence the association as the respondents were not native speakers of English.

Guest et al. (2006) found that during an analysis of 60 qualitative interviews, saturation was achieved within 12 interviews, while initial meta-themes were found within just six interviews. As a result it was believed that 15 semi-structured interviews for both doctors and patients allowed for saturation and certainly this capacity was witnessed at respondent eight for the doctors, and at respondent seven for the patient group. All 32 respondents were Muslim.

The questions were developed using the synthesis of themes raised in the literature review. The research sample size means that whilst findings cannot be generalized, larger samples can omit qualitative input (Bello et al., 2013). The interviewees were selected by the medical centre who had agreed to take part in the study and therefore the researchers were not directly involved in the selection criteria. This precludes researcher bias.

Content analysis followed advice on the four phase approach by Jonker and Botma (2012) which firstly involved disassembling content by defining and categorising data into initial themes, e.g., by agreement or non-agreement. Secondly analysing these themes to reassemble an overview taking account of the themes and subthemes (e.g. being acquainted with Halal or haram concepts). The penultimate step called for discarding excess data such as general niceties and non-relevant chit-chat before the final phase that converts the language into codes that retain relevant participant extracts that validate narrative. This also allows for some direct quotes to enter the analysis to both emphasise and validate findings. Coding is qualitative research (Coffey et al., 1996).

Onwuegbuzie et al. (2009) advised monitoring the thematic quantity and quality of words coming from each subgroup on themes and that this interest level could be used during codifying to gauge the importance of the topic under consideration. It was these themes and the initial findings that were further discussed with a random selection of one respondent each from the three respondent groups (patients, doctors and pharmacists). These three respondents took part in an unscripted telephone interview to establish consensus on whether the earlier compiled responses were deemed consistent with their general belief and subsequent informal discussions or reflections that they had since the semi-structured interviews. Research findings are reliable when similar conclusions are drawn from analyzing the data, which could be further tested by employing an additional research tool (Easterby-Smith, 2008).

Issues surrounding ethical practices can skew attitudes (Miller et al., 2012) so this study adhered to ethical guidelines of the British Educational Research Association (BERA, 2011).

4. Results and Data Analysis

All the respondents were aware of the term Halal which is hardly surprising given that the medical centre was one that was favoured by Muslim patients and was predominantly employed Muslim staff. 14 of the 15 patients, all 15 doctors and both of the pharmacists were also familiar with the concept of haram.

This profile changed when respondents were asked if they were aware of Halal pharmaceuticals. Of the patient group only six of the 15 had heard the term and eight of the 15 doctors were conversant with the concept. However both pharmacists were aware of Halal pharmaceuticals although that concurred that they had never been asked by patients for Halal medicines.

When specifically asked if they were aware that some ingredients within some medicines were derived from haram sources such as animal-based gelatin, eight of the 15 patients, 14 of the 15 doctors and both pharmacists replied that they were conscious of this. The pharmacists disagreed as to whether manufacturers supplied accurate ingredient lists for their products. The pharmacist who said that there were not always an ingredients list mentioned that medicine in solid tablet form was often bereft of ingredient listing. Both pharmacists agreed that medicines in a syrup format came complete with an ingredients list.

Only two of the 15 patients said that they requested Halal medicine from their doctors. All 15 doctors however claimed that they had never been asked by a patient to provide Halal only medicine when they prescribed. Interestingly, 10 of the 15 patients claim that doctors recommend Halal alternatives. 14 of the 15 doctors agreed that they believed that their patients would be responsive to Halal alternatives but only two of the 15 said that they even made such suggestions.

When respondents were asked to give two reasons why they thought Halal medicines were not readily available in Nigeria all 15 of the patients said because people were unaware of them. The other most favoured answer was because they perceived that Halal medicines would be at risk of being counterfeited (13 of the 15 patients). The doctors all provided the same top reason, lack of awareness, for the absence of Halal medicines in country. However their second preferred reason, with 13 of the 15 expressing this, was that the Halal medicines might be more expensive and therefore less attractive for patients on an affordability basis and indeed may lead to patients deciding against purchasing their prescriptions.

When asked if they would purchase Halal medicines in the event of their availability, nine of the 15 patients said that yes they would buy these, even if these products were more expensive. This might allay the fears of the doctors' who were concerned that patients would veto medicines that were too expensive (although there was still evidence of that with four of the 15 patients stating that they would be deterred by higher pricing). 12 of the 15 doctors believed that their patients would prefer to have Halal medicine if it was accessible. The pharmacists said that they would only offer Halal medicines to patients if there was a demand for Halal pharmaceuticals, meaning it was a "*chicken and egg issue*" according to one of the pharmacists. As it stands currently though, the pharmacists "*just provide them what is prescribed since there are no other options at this time*". The pharmacists said that they do not generally comment on pharmaceutical ingredients and only advise patients on how to take the medicine and if there is any requirement to mention concomitant medicine contraindications. There was also an admission by one of the pharmacists that some non-halal ingredients such as alcohol actually serve as a preservative. Therefore without further review into alternative safer preservatives the pharmacist was quick to highlight that this was not an endorsement but merely an observation about its efficacy since it was the best option on offer at this time.

5. Discussion

With only six of the 15 patients knowing about Halal pharmaceuticals it clearly indicated that there was a lack of awareness of these products within the patient group. Although the numbers who were aware was increased to eight of the 15 doctors, this is just over half the group. Alqudsi (2014) suggested the lack of awareness of Halal products leads to a reduction in demand. Although neither of the pharmacists had ever been asked for Halal pharmaceuticals they were aware that often medicines with syrups were more likely to be Halal than those in solid tablet format. Equally only two from the patient group said that they had asked prescribing doctors for alternative Halal medicine, in contrast with all 15 doctors claiming that they had never been asked by patients to prescribe medicine that met Halal criteria.

Most of the doctors (14 of the 15) thought that their patients would be responsive to their suggested Halal alternatives which endorses the view of Lada, et al., (2009) who proposed a view that as Halal awareness grows, then the concept will expand beyond Halal food to encapsulate other markets; in this case pharmaceuticals.

It is worth highlighting the fact that all the respondents believed that it was a lack of awareness that thwarted Halal pharmaceuticals from being available in Nigeria. It is evident that the fear of counterfeit medicine was also a significant concern and this reason was provided as the second cause for the lack of Halal pharmaceuticals from the patient group. It also indicates that obtaining bona fide sources of Halal medicine would be paramount. Shabana (2013) claimed that as Halal awareness increases the need for industries to be Halal certified will also increase. The lack of HCOs in Nigeria (Adesina, 2013; Annabi & Lolade, 2015) and the evidence of counterfeit medicine (NAFDAC, 2016) are two themes that would need addressed simultaneously to assure Halal pharmaceutical integrity. Perhaps at the most fundamental level though it is the perception of corruption that has to be tackled first as without trust in robust practices it would be impossible to have confidence in a reliable supply chain. Tiemen and Maznah (2013) emphasised the importance of regulatory bodies as a quality assurance mechanism for manufacturers and suppliers within the supply chain. Whilst supply chain ethos was not part of the main discussions with respondents, the attributes of the Halal supply chain would, in turn, enhance the capabilities of the pharmaceutical supply chain. Annabi and Lolade (2015) have demonstrated that Halal supply chain characteristics within Nigeria are nascent and therefore this presents an opportunity for either the government to take a lead or for the private sector to seek voluntary accreditation by developing associations through JAKIM.

The pharmacists recognized that medicines in their current format were stabilized by ingredients that had “makruh” status at best, possibly “haram” status at worst, which is consistent with Azeez et al. (2014). This also echoed the belief that medicines that contain prohibited ingredients can be used in the absence of Halal alternatives (Easterbrook & Maddern, 2008; Al-Qaradawi 2007). The pharmacists were aware that they could suggest alternatives in the form of syrup-based medicines, (where they existed), in the event that a patient specifically asked for a medicine that was less likely to have “haram” ingredients. This is consistent with the findings of Daher et al. (2014). However the lack of labelling detailing the ingredients would need to be addressed in to ensure a transparency regarding the contents of both syrup and solid medicines. NAFDAC already have guidelines for registration of imported drug products in Nigeria under directive NAFDAC/RR/002/00 and for registration of drugs and related products manufactured in Nigeria under NAFDAC/RR/003/00. Both of these policies call for “*Quantitative listing of all the active ingredients per unit dose*” (NAFDAC/RR/002/00 n/d p. 2; NAFDAC/RR/003/00 n/d p.3). However given the comments from the pharmacists interviewed, it would appear that these procedures are not enforced, particularly in the case of tablet based medicines. Enforcement of these NAFDAC guidelines is recommended as a first step with the pharmaceutical packaging also being included in the guidelines for any Halal standard that emerges in order to preserve integrity.

6. Conclusion

There is a lack of awareness of Halal pharmaceuticals in general and it is not an issue that is isolated to Nigeria. Previous research has highlighted this and has linked lack of awareness to lack of demand. Therefore increasing awareness in Nigeria should lead to an increment in pull strategies whereby patients, doctors and pharmacists are respectively requesting, prescribing and procuring Halal pharmaceutical products. However the demand itself would not negate the requirement for a robust Halal Pharmaceutical standard especially in a country where fears and practice indicate that counterfeit products are more than merely a risk to Halal integrity, rather they could be life threatening to those who consume them.

NAFDAC has the legitimacy to begin to enforce pharmaceutical labelling. In the short-term adopting pharmaceutical labelling for all medicines (both syrup and solid) would help support awareness of current practices and potentially help work towards adopting alternative Halal sources where they easily are available; i.e. using plant based gelatin as opposed to that from non-attested animal sources. However it is important to have a baseline to work from.

This does not detract from the larger issue of contemplating how a Halal supply chain can be supported in Nigeria and it is for those involved to decide whether this should begin as a voluntary code or be one that is regulated from the outset: Only relevant stakeholders and shareholders can agree how it is interpreted, planned, initiated, adopted, implemented and sustained.

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