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Delivering Quality and Satisfactory Health Care; the Role of Pharmacists in Ghana

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ABSTRACT

Purpose: This study investigated the crucial role of pharmacists in service delivery of the Public Health Institutions in three Northern Regions in Ghana. The study sought to find answers to the questions such as the role and important of pharmacists in delivering quality health services in Ghana; the availability of drugs at the dispensaries to meet the needs of patients; the role of pharmacists in the implementation of the National Health Insurance Scheme (NHIS); and the availability of health facilities and/or resources in the three Northern Regions in Ghana.

Design/methodology: In order to answer these questions, a quantitative research approach was adopted and unstructured, semistructured structured questionnaire was used. The metropolitans and municipalities were selected in the three Northern Regions to respond to the questions. Three (3) Municipal each was selected from the three regions; comprising of the Tamale Metropolitan, Savelugu municipal; and Yendi municipal in the Northern region. The Bolgatanga municipal, Bawku municipal and Navrongo municipal in the Upper East region were chosen while the Wa municipal, Lawra municipal and Sissala East municipal in the Upper West region were used for the data collection. These metropolitan and municipalities were used because of their high number of people; where it is expected to have a higher percentage of the population visiting hospitals. In all, six hundred (600) questionnaires were administered.

Findings: The study found that the pharmaceutical sector plays a crucial role in the health sector in Ghana by proving useful information on drugs to patients; plays an important role in the implementation of the NHIS; drugs often prescribed to patients by doctors are not always available at the dispensary; patients disagreed that satisfactory services are provided by the pharmacists in Ghana; and that pharmacist play a crucial role in service quality delivery process in Ghana.

Originality and Value: The value of this research lies above service recovery guidelines suggested in the literature and thus offers potential service quality strategies and practices that could really motivate Ghanaians to change their negative perception on the public health institutions as a shoddy service brand.

Keywords: Service quality; pharmacists; health sector; Ghana

INTRODUCTION

The population of Ghana, as at 2010 census was 24,658,823 with an annual growth rate of 2.5% (GSS Report, 2012). All these citizenry depends heavily on government for the provision of adequate, affordable and quality healthcare services. The pharmaceutical division forms integral part of government's accountability to ensuring that the citizenry have access to good quality drugs at affordable prices, enacting drug policy, developing specialized principles, and enhancing the normal and acceptable use of medicated drugs (WHO, 2003). The pharmaceutical division, in Ghana, is made up of nearly 30% locally produced and 70% imported products. The creative sector presently has 38

registered firms, using a wide variety of health professionals including pharmacists, chemists. engineers and lab technologists. More than 75% of these companies are owned, controlled by Ghanaian entrepreneurs, with at least, 3 of them listed on the Ghana Stock Exchange (Pharmaceutical Manufacturing Association of Ghana). These listed companies include Starwin, Ayrton and PZ Cussons (GSE, 2014). The industry continues to do better than competitors in the market in the sub-region, though the country imports majority of its drugs, (the Business Monitoring International survey, report, 2015); a marketing research company. The BMI forecasted a physically powerful growth for the

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industry throughout a 10 year forecast period. The report reveals that Ghana relies on imports for the majority of its pharmaceuticals products and medical strategy. It stressed out that there is political power or country's drive to improve the domestic manufacturing capabilities. Such improvement will not only minimize the expensive import bill in country, but would also limit the influx of counterfeit drugs, reduce costs and pave the way for Ghana as a nation to become a regional exporter of essential drugs to other countries in the West Africa subregion in particular and the whole world at large. The impact of this substandard medicine could worsen-off the troubles of patients, and hence, increasing mortality rate. It is against this backdrop that the WHO is assisting countries to develop and establish the expertise needed to regulate drugs (WHO, 2003).

Further down the line, the headline expenditure projections for pharmaceuticals in Ghana, rose from GH¢480 million or \$311 million in 2011 to GH¢572 million or \$319 million in 2012; an increased of more than 19.1% in terms of local currency and more than 2.6% in terms of US dollar (BMI report, 2015). According to the report, quite a number of international agencies have announced funding for healthcare projects in Ghana over the years. Plans are far advanced by the EU to offer Ghana a €97 million grant to fund healthcare programs.

Evaluating the risk of the pharmaceuticals industry and its reward ratings in Ghana, the BMI report showed that Ghana's score was stable, enabling her to occupy the 18th position among the 30 key players in the Middle East and Africa (MEA) surveyed in its first quarter of 2013 Pharmaceutical Risk/Reward Ratings (R/RR) matrix. "In a broader language, Ghana is seen as a nation with a strong, long-term potential for drug makers, even though low per capita spending on pharmaceuticals was witness, coupled with widespread counterfeiting activities, which will continue to moderate its R/RR ranking through downward pressure on its industry rewards balanced scorecard,". China and India have been identified as the two major sources of fake drugs into Ghana. As a key provider of drugs and other medicinal products/services to those who need them in the health sector. the successful and smooth implementation of the national health insurance scheme, in Ghana depends heavily on the

pharmacists. The role of the health providers is incomplete when the patient/client on admission to a hospital could not find the prescribe drug or medicine. The patients/clients have no option than to remorsefully, go and purchase the drug prescribed to them by their doctors outside the hospital because the said drug is not readily available at the dispensary unit of the hospital; meanwhile the said drug is covered under the national health insurance policy regulations (the GMDs annual report, 2016). This indeed, has made the programme frustrating sometimes since patients have to go and look for drugs and purchase instead of receiving them from the dispensary unit of the hospital. Service quality (SERVQUAL) is defined to cover the degree of excellence of how a product/service is produced; designed; priced; readily available; rendered or delivered to the customer/client of the service in question (Lovelock, 2015). The unavailability of the product or service to the beneficiary affects the level of quality in the service delivery process (Kotler, 2012).

However, there is little emphasis in the literature of service quality implementation in the health sector in Ghana. Moreover, an empirical study with the objective of finding out the level of quality service on the satisfaction of customers/clients focus on public sector institutions rarely exists in literature. Knowing what to provide; how to provide it; and when to provide it to the clients will compel and bring people to the government institutions; rendering health services once they are satisfied with the service of the service delivery employees such as doctors, pharmacists, nurses and the helping staff such as administrators and finance officers.

The purpose of this research is to go beyond the service quality guidelines suggested in literature (Boateng, 2014) and consider the actual availability and existence of drugs or medicine at the dispensary of the government hospitals and the useful information patients received from them (the pharmacists); regarding the uses of the drugs they give to them. The role pharmacists in delivering quality and satisfactory health-care in the health sector in Ghana remains the focus of the study. The paper is organized as follows: first, a comprehensive review of literature is discussed; followed by methodology of Second. the research. the conceptualization model is shortly discussed to

underpin the research. Third, the analysis and results is discussed and finally, the conclusions, limitations and areas of future research of the study.

REVIEW OF RELEVANT LITERATURE

The Drone medical services delivery system

The unavailability of medical products such as blood bands and drugs remains a source of worry to the citizenry in other parts of the country, particularly those in the remote areas (GMDs, report, 2016). A cursory look at the sector indicates that some of the districts hospitals do not have blood and common paraceutamol and chlorequinne for patients at their disposal let alone to talk of the health centres and chip compounds. According to the government, a drone medical services delivery introduced in December, 2018 is the best to check or solve this challenge (Citi eyewitness news, 2018). The government is required to spend Ghc 137 million on this drone system so as to assist the four distribution centres in the country namely the Eastern region distribution centre; the Ashanti region distribution centre; the Brong Ahafo region and the Northern region distribution centres to do effective work and to enable them expedite action on the delivery of health products or services to other parts of the country in order to save lives and makes the health services satisfactory to the populace (TV3 major news bulletin, 2018). However, notwithstanding the introduction of this drone system, it is interesting to note that it will not be impactful or yield any result if the government fails to make these four distribution zones in the country well stocked with medical products for ready delivery and put in place a good road networks to link these health facilities for easy access (the parliament select committee on health, 2018). It is left on to Ghanaians to pray and hope that this new method of delivering medical products or services will work effectively and efficiently so as to enhance satisfaction of the recipients of health services (patients) and make them loyal to the public health institutions in Ghana.

Service/product quality and consumers/clients satisfaction

According to Hinson (2012), product/service quality is the degree of excellence of the product/service performance. Service quality measures and compares consumers' perceptions and expectations from the service firm and how well the firm performs in delivering the service (Hinson, 2012). Furthermore, Kotler and Keller (2012) saw service/product quality as a degree of excellence of a team that performs the service. The researchers stated that quality entails how well the product/service is produced or processed; how well it is being package or branded; how well it serves it purpose; how well it is being delivered to the consumer/client at the point of contact and how well it measures up against it rivals in the marketplace (Pintensis, 2002; Clutterbuck, 2000; Kotler, 2003). It is therefore, largely subjective in nature. Quality means different things to different people and hence, is defined by the beholder; that is, what seems to be quality to someone may not be seen as quality to another. Here, the focal person is the consumer/user or the client of the product or service for he/she buys or pays for the product or service sold or rendered to him or her (consumer or client) for different purposes.

To ensure product/service quality delivery, the firm must be prepared to meet its customers/clients expectations and close the gap between those expectations experiences and of their customers/clients (Kotler and Keller. 2012). Customers and clients expectations are often form by their past experiences, wordofmouth recommendations and level of personal needs. Customers/clients compare perceived service with expected service. Product/service quality is the result of a process. It is the customer/client's comparisons, summarized in an attitude of the believed goodness or unacceptability of all dimensions of a particular service experienced or service provided. Service quality is also related to the expectations of a particular service in relation to other service providers in the same category. Service quality therefore processed-related elements are and outcome-related. A customer or client's expectations are what he/she believes will be provided (Hinson, 2012) by the same service provider at the point of contact. It is this service quality expectation that is compared with perceived service quality and which results in customer/client's satisfaction of dissatisfaction (Kotler and Keller, 2012; Hinson, 2012). Service quality is tested in each service encounter. If the perceived service falls below standard or the expected service, the customers or clients will be highly dissatisfied and will rarely

return to the same firm or service provider (Kotler, 2013; Hinson, 2012). Alternatively, customers or clients are bound to come back to the same firm or use the same service provider if the service perceptions exceed service expectations and will (Kotler, 2013) not hesitate to recommend the firm or service provider to other customers. What is irritating according to the Institute of Customer Service, UK, is that, service which is connected and linked within the firm; is incomplete when it flows smoothly or renders satisfactorily from one stage and get stagnating or disappointing in the next stage of the service delivery process. A doctor or medical officer could provide quality or satisfactory services but the client gets disappointed at the dispensary unit of the hospital which is another stage of the service encounter. It is not expected by the customer/client to be told by a pharmacist that the drug prescribed by the doctor is not available. If the drug is not available, the medical doctor should have known and use the alternative rather than the same drug (Battersby et al. 2003). When it happens this way, the customer/client who is satisfied with the services rendered by the medical superintendent and gets disappointed by the pharmacist in the same service line would have a divided mind; whether to repatronize the services the next time or not. According to Hinson (2012), Service quality is divided into three main categories; technical quality dimension; which left the feeling of satisfaction with the customer/client after the employee and the customer/client interaction; functional quality; where the process of delivering the product/service and its influences on the overall impressions of quality are left with the customer/client; and societal quality; which is ethical in nature and is often hard for customers/clients to evaluate after the service encounter.

Developments in the Sector

Science and Technology today has influence development in the pharmaceutical industry to extent that you cannot think about the development of the sector without it, as manufacturers and other stakeholders seek more advanced methods, in any other sector, to run their businesses Sekyere, (2007). The key players in the industry are gradually embracing the idea of advanced trends in technology systems in the daily running of their business. Technology has become an integral part of the industry, beginning at the conceptual stage of the design of the facility. Aside function, intelligence and aesthetics have become integral in modern trends in technology and is being applied in the kind of machinery and equipment being manufactured, security systems, construction materials and finishes, control of parameters such as lighting, temperature, humidity, ventilation, maintenance schedules among others have essential trend in the sector.

BMI report (2015)anticipated that the continuing roll-out of biometric registration and community-based health expansion of the planning and services scheme will lead to greater Health Insurance uptake of the National scheme (NHIS) and hence increasing demand for pharmaceuticals. A risk to our outlook is the continued non-payment of affiliated healthcare providers by the government, service posing questions regarding the sustainability of the scheme. Domestic manufacturers will gain momentum following the removal of taxes on imported pharmaceutical raw materials.

Headline Expenditure Projections; Pharmaceuticals: GHS859mn (USD416mn) in 2013 to GHS1.01bn (USD328mn) in 2014; +17.5% in local currency terms and -21.0% in US dollar terms. Forecast in line with Q414 in local currency terms and slightly downwards in US dollar terms due to currency depreciation.

Healthcare: GHS3.78bn (USD1.83bn) in 2013 to GHS4.30bn (USD1.40bn) in 2014; +13.8% in local currency terms and -23.5% in US dollar terms. Forecast in line with Q414 in local currency terms and slightly downwards in US dollar terms.

Performance Analysis

The Ghana pharmaceutical sector's performance over the years has been declining. Statistics from the Regional Pharmaceuticals & Healthcare Risk/Reward Index indicate that Ghana scores 30.7 points out of 100, below the regional average of 42.3. Ghana dropped to 27th out of a total of 31 countries, down from 22nd in fourth quarter, 2014 posting a poorer performance in terms of Risks than Rewards. Ghana Pharmaceutical and Health care report (2015) reveal that the depreciating Ghanaian cedi is having a negative impact on short-term pharmaceutical market growth, which is a key contributor to the country's low score in that regard. In December 2014, Ghana's

Volume 2, Issue 5; September-October 2019; Page No.48-70 © 2019 IJMSCR. All Rights Reserved Health Insurance Service Providers Association (GHISPA) provided the National Health Insurance Authority (NHIA) four months to pay all given claims or else it would resort to a 'cash for drugs' system. Under the system patients would have to pay in cash for drugs the GHISPA administers to them, Ghana pharmaceuticals & healthcare report (2015).

There are approximately 8000 licensed private retail medicine outlets in the country. Sectors which dispense a substantial proportion of medicines to patients include the public sector representing about 55 % of the total health facilities while the private sector made up of the mission based providers and the private medical and dental practitioners represent about 45%. By the end of 2007, approximately 300 private pharmacies and about 230 chemical sellers' shops had been accredited by Insurance the National Health Authority to dispense medicines to patients from both public and private accredited health facilities.

KEY MANAGEMENT ISSUES

Operations & IT issues

Technological advancement is a major area in the pharmaceutical industry that is continuously being promoted. Although some major investment efforts have been made in the last few years by the local pharmaceutical industry, it is not able to operate to full production capacity. With some of the key reasons being, their focus on supplying Over-the-Counter (OTC) products, as opposed to prescription essential drugs in a saturated and intensely competitive OTC market, high WHO Prequalification standards, manufacturing costs, unfair competition in terms of product formulations, difficulties exporting products to other countries in the sub-region, and absence of adequate incentives for high production (Harper & Gyansa-Lutterodt, 2007). According to the PMAG the pharmaceutical industry relies mostly on India and China to fill vacancies for technologies within the industry as locally they are not available to improve as industrial pharmacists account for only 3% of Ghanaian pharmacists as opposed to over 50% in South East Asia. This creates a huge back log in the production of highly important pharmaceutical products which can be of major importance not only within the country but also within the sub-region. Also there is currently no multinational pharmaceutical companies currently manufacturing medicines locally (Ghana Pharmaceutical Country Profile, 2012).

Managerial & Governance Issues

Good corporate governance plays a vital role in a sound operation of an entity. The issue of accountability, transparency, fairness and independence are the main pillars on which good corporate governance rest (Hinson et al., 2010). Managerial and governance in this sector can be discussed in the context of addressing the protection of the individual, stakeholder involvement, leadership of the organization, use of (public or private) resources, decision making and accountability. Governance issues have become very imperative especially in the health sector since it has a direct impact on the healthcare delivery system and by extension the mortality rate of a country. For example, Gupta, Davoodi, & Tiongson (2000) demonstrated that levels of corruption are certainly related to child mortality and other health outcomes. The United Nations Development Programme (UNDP) identifies nine independent principles that are extensively used to characterized good governance and these principles are strategic vision, participation, transparency, consensus-orientation, rule of law, equity, efficiency and effectiveness, responsiveness and accountability (UNDP, 1997).

In recent years, much attention is being placed on the strengthening of good governance in the health sector with a particular focus on improving transparency and reducing corruption as was highlighted in the 2015 State of the Nation Address delivered by the president of the Republic of Ghana. The Government of Ghana in a bid to embark on good governance in the pharmaceutical sector has formulated or adopted and implemented various policies over the years to effectively deal with the issue. A few of these policies are Ghana National Drug Policy, A Five Year Programme of Work 2007-2011, issued by the ministry of Health (MOH) in February 2008 and Standard Treatment Guidelines (STG) issued by the Ghana National Drugs Program among others. The regulatory bodies responsible for the formulation and implementation of some these policies are MOH/GNDP, FDB, NHIA, The Pharmacy Council and PMAG. The FDB is for instance making an effort to ensure quality of the drugs that are legally marketed in the country and some of the ways by

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which it does these are by the inspection of manufacturing facilities even in countries of origin and through occasional sampling and testing studies done mostly of malaria drugs. There is also a commitment strengthen domestic to the pharmaceutical industry as outlined in the national health policy. This is however not to suggest that there is a perfect situation as far as managerial and governance issues in the sector is concerned. There are insurmountable challenges faced by the government and the private sector. Some of the challenges faced by the government due to poor governance are limited capacity to enforce regulation, high levels of provider indebtedness due to poor management and flaws in the payment system, a weak public sector supply chain and scares resources to make necessary investment into quality improvement (Andreas Seiter, World Bank) Limited availability of qualified personnel, lack of funding for access to professional training, high taxes on imported raw materials, and high prices of utilities and unreliable supply of water and electricity are among the challenges faced by the private sector.

To deal with some of the above mentioned challenges and also to have effective corporate governance, the private pharmaceutical companies have very vibrant board of directors that provide effective oversight, sense of purpose and integrity to their respective companies. Most of such board members if not all are highly qualified and well-respected in their own fields of expertise, and have brilliant understanding of what is needed to operate a profitable and thriving business as depicted by Danaadams Pharmaceuticals Industry Limited. The FDB is strengthening the monitoring capabilities in the market and fighting the constant threat from counterfeit, substandard and illegal marketed medicines from the government front. There is also increasing pressure on manufactures to conform to GMP, using the A to E classification system implemented by FDB. This effort could be supported (as suggested by Drug policy, 2009) by WHO or through technical assistance from donors and similar approach could be extended to cover distributers of the drugs

MARKETING AND CRS ISSUES

Marketing issues

The pharmaceutical industry is steadily becoming bigger and bigger in Ghana with attention gradually being given to the marketing of pharmaceutical products. According Akomea & Yeboah (2011) the latest health policy presented in 2007 puts the health sector at the focal point of financial advancement and presents an agreeable move in the part of health in the national and worldwide advancement structure. With the local pharmaceutical industry being exempted from various statutory contributions among other exemptions (pmaghana.org) in order to encourage and empower local manufacturers. With an annual market expenditure of over 1,300.00 million cedis in 2008 recording 7.79% of the country's GDP (Ghana Pharmaceutical Country Profile 2012) there is no doubt a bright future for the Ghanaian pharmaceutical industry.

The FDA which is a monitory body within the industry is financially challenged and thus cannot conduct Post Marketing Surveillance in order to identify non-conforming products within the market (Harper & Gyansa-Lutterodt, 2007). Another major problem is the local industry focusing too much on OTC production at the expense of essential drug production as well as heavy advertisement of OTC drugs. Statistics on the Ghanaian pharmaceutical industry is very weak, because there are no established research companies that collect data at their critical point of sale (Akomea and Yeboah, 2011). In 2005, the total market was estimated at 250 million USD at retail price level. Assuming a growth rate of 6 to 8 percent, the total market size was estimated to be \$ 200 million in 2008 (Seiter et al., 2009).

Corporate Social Responsibility Issues

Corporate Social Responsibility has been gaining momentum and seen to be increasing highly on board room agenda (Hinson et al., 2010). This concept has been adopted by many business sectors including the pharmaceutical industry (Volodin A. et al., 2010). Corporate Social Responsibility is about companies being proactive or reactive to social and environmental concerns of their stakeholders. Pharmaceutical stakeholders sector include: customers, employees, suppliers, regulators. shareholders, the community, competitors, social and mass media, as well as advocacy groups. (Maignan & Ferrel, 2004)

Corporate Social Responsibility under the pharmaceutical sector can be in the form of easy

access to quality drugs at an affordable price, free and easy access to information on appropriate usage of medicine, customer care line where complaints on drug reaction could be handled as well as caring for employee's health and safety needs. In Ghana, corporate social responsibility in the pharmaceutical sector is in the form of donations, sponsorship, community project and education. For instance, Ernest chemist in 2014 teamed up with TV3 network to organize a blood donation exercise to save lives, they also undertook a free medical screening exercise for the people of Adabraka. Over 2000 people were screened and given free medicine ("Ernest chemist report," 2014). Tobinco in 2014 provided 1,500 Health insurance cards for women and children in Accra, built and furnished an ultra modern office complex for the Ghana Police Service at Kotobaabi, paid for the total treatment cost of five (5) hole-inheart patients at the Cardio Centre of the Korle-Bu Teaching Hospital ("Tobinco Report", 2014).

Human Resource Management Issues

One of the critical aspects of the long term sustainability of the pharmaceutical industry is enlargement of human capitals that can satisfy the diverse undertakings in the pharmaceutical manufacturing system (Ogaji et al., 2014). The Ghana Pharmaceutical Council could boast of 2,900 licensed pharmacists as at 2012 of which 372 works at the public sector. There are an estimated figure of 1,126 as pharmaceutical technicians and assistant and approximately 2,400 licensed pharmacies in the country (WHO report, 2012). The Pharmaceutical Manufacturing Association of Ghana report (2015) indicated that most pharmacists produced in the country on the average, only 3% of them are in the field of industrial pharmacy. This is woefully inadequate according to WHO report (2012) taking into consideration the population of the country and its healthcare issues. There are high demand for pharmacists in public health sector, the WHO recommends at least a ratio of one pharmacist per 2000 population in order to ensure effective healthcare delivery (Azhar et al., 2009; WHO report, 2009). Figure 1.0 below indicates the inadequacy of pharmacist in the regional capitals which is the major referral point in the country. Apart from drug administration, pharmacist can also serve as advisors to doctors and nurses and help in decision making policy in relation to health issues.

Region	No. of No. of hospitals Pharmacist in district		No. of per Pharmacists per facility		
Greater Accra region	5	40	8		
Ashanti region	18	22	1.2		
Brong Ahafo	13	12	0.9		
Western region	11	8	0.7		
Eastern region	15	13	0.9		
Central region	12	8	0.7		
Volta region	12	7	0.6		
Northern region	13	3	0.2		
Upper West region	5	5	1.0		
Upper east region	6	4	0.7		

Figure 1.0 Distribution of pharmasicst in the regional capital.

(Source: The WHO report, 2015: Assessment of Human Resources of Pharmaceutical service in Ghana.)

Roles and responsibilities of pharmacist are the same by global standards but challenges pharmacist goes

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delivering their services varies from one continent to the other. In most developing countries, so many researchers have found that there are several human resource practices that significantly affect performances in a negative way. Some of the issues are poor working conditions, poor employment scale, lack of good compensation for hard work, poor management by supervisor, weak regulatory enforcement concerning drug sales, low wages, lack of incentives and carrier prospect, frequent shortages of drugs, equipment and supplies (Shabhir, 2014;SteenKamp, 1997; WHO report, 2010). This could account for why healthcare workers migrate to developed countries, probably to seek for greener pastures.

Accounting and Financial issues

Accounting information is very essential to the success of every establishment, the validity and reliability of financial reporting plays a vital role in ensuring the accuracy and soundness of a given sector's operation, the Ghana pharmaceutical industry is not exception to this phenomena, as in indicated in the Ghana Pharmaceutical profile (2011), the country does not have any regulatory provision affecting the pricing of medicine although taxes and duties are paid on imported finished pharmaceutical products. Health financing indicator shows the ability of the health system to effectively mobilize and allocate resources, implement pulling and insurance schemes and distribute financial burden of care equitably. Principal sources of financing data include country National Health Account (NHA), WHO, World Bank and OECD data bases, along with special studies and surveys (WHO, 2008).

Financial Issues

The overarching goal of a financial management system is to improve efficiency of fiscal operations enhance government accountability and and transparency as well as to ensure that proper internal control systems are put in place to improve control over expenditure. The financing of health care has been of major concern in Ghana. Rising revenue, pooling resources, budgeting and purchasing of services are important aspects of health system governance. Specifically, governance in health financing can be assessed by monitoring overall levels of health spending, equity in raising revenues and allocating budgets, and efficiency in ensuring that spending reaches health facilities and the poor (World Bank, 2008). There are two main ways by which health care costs are financed in Ghana and these are public and private funding. Public funding includes, tax revenue, social health insurance and

user fee (cash and carry). Private sourced of funds for health care services include private health insurance schemes, employer finance services, charitable and voluntary donations, community self-help and fund raising and private household expenditures (WHO, 1978; Mossialos & Dixon, 2002). However, there have been several instances throughout the country in financial resources have which these been mismanaged or misappropriated through fraudulent practices leading to failure of government projects and also collapse of several onetime buoyant businesses (Schroy, 2010). Government, in the 2015 budget proposed a removal of VAT on specified locally produced pharmaceuticals and some of the raw materials used for the production of these pharmaceuticals (Highlight of 2015). Players in the industry think that such a move is a step in the right direction since it will reduce the overall production cost of such products and thereby reducing the burden on the final consumers.

The main driver for change in the Ghanaian health system has been additional funding availability through NHIS. Empowering citizens by giving them a health insurance card with an entitlement for reimbursement rather than having to pay cash for health services and goods greatly improves access and leads to higher utilization of facilities. More purchasing power stimulates the supply side of the market, increasing availability of drugs. To secure the achievements and allow for further improvements over time, sustainability of the NHIS model needs to be assured. At the moment there are several threats to this model that should not be underestimated - the archives of development history know many examples of failed health insurance models. Pharmaceuticals account for about 50% of NHIS expenses. which makes management of pharmaceutical expenditure a prime policy issue.

MAJOR CHALLENGES CONFRONTING THE SECTOR

The domestic drug industry has been growing over the last years due to a preference for local buying and an increased availability of domestic funding through NHIS. Nevertheless, the sector is still fragmented and individual players have not reached efficiencies needed to be competitive on the international market. As pointed out further above, there are several barriers to profitable growth for local businesses,

Volume 2, Issue 5; September-October 2019; Page No.48-70 © 2019 IJMSCR. All Rights Reserved whether its focus is on manufacture or distribution, such as limited size of the domestic market, limited availability of qualified personnel, taxes, transaction costs and time lost for bureaucratic procedures, limited access to capital ,local banks charge interest rates etc (Seiter & Lutterodt, 2009).

Participation in international tender business would require quality standards that domestic manufacturers cannot meet without significant investment Manufacturers and distributors that make a larger share of their profits with malaria drugs will be facing a major challenge once the Affordable Medical Facilities-malaria (AMFm) is implemented and high quality ACTs can be purchased at subsidized prices from foreign companies. Local manufacturers must meet quality standards defined by the Global Fund (host of the AMFm) and lower their manufacturing costs to the level offered by larger international competitors. Otherwise they may lose most of their malaria business in manufacturing. A sharp reduction in Artemisinin Combination Treatment for malaria (ACT) ex-factory prices will also lead to lower margins for wholesalers, retailers and dispensing facilities.

Another market factor that can be opportunity and threat at the same time for the domestic industry is the likely consolidation of purchasing power. Current price levels in Ghana are relatively high compared to international reference prices and buyers are increasingly aware of that. All the above factors will likely create consolidation pressure on manufacturers and wholesalers, who will need to invest into quality and increase sales volumes to maintain profitability. This requires capital and clear regulatory guidance, combined with a systematic reduction of bureaucratic hurdles. It is based on the assumption that better health outcomes and access to affordable essential drugs are primary objectives for Ghana, meaning that keeping prices artificially high and isolating domestic businesses from market pressures is not a desirable option. The absence of quality assurance procedures in healthcare facilities and warehouses is shown in results obtained in the survey, Lack of supervision and the presence of staff who unmotivated is realized in the fact that shelves were found to be dirty and drugs stored on the bare floor. Anybody who works in a store has knowledge of the fact that drugs should not be stored directly on the bare floor. This situation needs to be investigated if the quality of drugs is to

be maintained for the end user. The problem of expired drugs can be attributed to poor inventory management. The presence of expired drugs on the shelves of both public and private facilities is of great concern. If public sector facilities were made to operate in a businesslike manner such situations would scarcely arrive. Rational Use of Medicines Indicators for the rational use of medicines is those that are regularly monitored in public health facilities. These indicators have improved over the vears since awareness was created, but even so some of the indicators have not done as well as expected. Even though the Food and Drugs Board have standards for labeling, this is not adhered to in the public health facilities hence the adequacy of labeling is a far cry from the standard (Seiter & Lutterodt, 2009). There is the need to enforce labeling standards. The inadequacy of patients' knowledge on how to take drugs at certain public health facilities could stem from the clarity of the message, given the compactness of the message and the presentation of the message. All these can affect the dispensing time, and considering the fact that there are always lot of patients waiting at public health facility dispensaries for the medications, the dispensing times can be compromised. There is the need for dispensers to have time to collect feedback on messages given to patients to see their understanding of the information given them. The Standard Treatment Guidelines (STG) and the Essential Medicines Lists are usually found to be widely available in public health facilities but then the results obtained from prescribing according to the STG did not match the availability of the documents in the facilities. This shows that even though the documents have been widely circulated, they are not being used effectively because of the lack of enforcement. The bearing is that the drugs and therapeutics committees in the facilities are not executing their duties efficiently if even they exist.

Looking at the Fraud abuse by providers; combination between claims management system that monitors prescribing patterns and targeted investigation of suspicious claims or claim clusters over-prescribing, non-fraudulent irrational use of medicines.

Inefficiency in procurement forces NHIA to pay more for drugs than NHIA could pioneer a framework agreement model that sets fixed prices for all participating providers, ensures quality at necessary (it is assumed that the median price currently reimbursed could easily be undercut if procurement were more efficient) the source and defines service standards. Depending on decisions made by MOH and others, NHIA could either partner with a public institution or pilot the model with private providers to test its viability and develop contracting knowhow.

Demands for inclusion of additional drugs into the reimbursement list NHIA will need political and scientific backing, for example through a multidisciplinary panel or committee that evaluates all suggested additions to the list based on rigorous criteria and in a very transparent process, leading to a recommendation that then NHIA can follow if funds are sufficient and/or use to negotiate prices with manufacturers. The NICE (UK) model could provide guidance how to set up such a body in Ghana. This could be hosted at GNDP, where currently the responsibility for STG and EML is located; maximize savings potential from AMFm, when launched in summer 2009, will provide a massive one-time savings opportunity for NHIA. All wholesale buyers, public or private, should then be able to procure prequalified ACTs from manufacturers at subsidized prices around 0.05 USD per treatment (compare to the current reimbursement level of around USD 3.20). The AMFm will pay the difference to the centrally negotiated ex-factory price directly to the manufacturer. During the transition phase, confusion levels could run high and a proactive management of this transition may be necessary. NHIA could assist providers to get access to subsidized ACTs and subsequently cut its reimbursement price to the new established retail price (estimated at around 0.30-0.50 USD depending on supply chain efficiency). Technical assistance may be required.

CONCLUSION AND OUTLOOK

Investment and growth opportunities

Assessing the pharmaceuticals industry's risk and reward ratings, the BMI report indicated that Ghana's score was stable, remaining in 18th position among the 30 key markets in the Middle East and Africa (MEA) surveyed in its first quarter 2013 pharmaceutical risk/reward ratings (RRR) matrix. "Generally speaking, Ghana is seen as having physically powerful long-term potential for drug makers, although low per capita spending on pharmaceuticals, coupled with extensive counterfeiting activities, will persist to moderate its RRR ranking through downward pressure on its industry rewards score. China and India have been identified as the two major sources of fake drugs into Ghana. When ghanabusinessnews.com sought the views of Mr. Bright Simons, developer of the mobile technology Pedigree, an SMS application that detects the authenticity of medicines, he says the marketing and distribution segments of Ghana's pharmaceutical industry are growing rapidly, with new entrants fast developing strong sourcing connections and expertise in India and the Far East."The lifestyle category of products has seen incredible growth over the last two decades, as non-communicable diseases outpace infectious diseases in terms of the economic impact of disease. Manufacturing on the other hand has not seen much growth. It was exciting to see Ayrton taken over by Adcock Ingram, as this signaled the potential of international mergers and acquisitions to help capitalized the industry. That notwithstanding, manufacturing of ethical are falling, and so far we still do not have a single WHO pre-qualified facility capable of supplying drugs to the big international buvers such as the Global Fund," According to Simons, the herbal industry is still in limbo as different players fail to agree on ground rules. Regulators believe efficacy studies are timely, critical, and necessary. But the producers continue to insist on loosening of regulation. There is deep and massive concern over the liberalization of the sector, with Ghanaian players resentful of entrants, especially from the Indian sub-continent and the Far East

Policy directions

Most of the challenges mentioned above are not controversial and the main barriers to overcome them are limited resources and a lack of communication and coordination between key players in the industry. Regulatory action that put pressure on industry will lead to complaints to politicians, who should be aware of those stricter standards may bring down individual firms but are required to improve the odds of Survival for the entire industry in the country and to reduce public health risks from sub-standard drugs. The MeTA initiative should provide a platform on which the communication/coordination issue can be addressed successfully. Artificial

 ق س س intelligence can help identify patterns in raw data i.e technical assistance would be needed. Accountability and sanctions need to be clear; NHIA and schemes need political backing for enforcement. NHIA legal team may need to work with prosecutors and courts to educate them on the subject matter. Claims management system should pick up patterns and trigger a combination of feedback to providers; "blame and shame" as step two; sanctions/fines possible as further escalation but hard to enforce and possibly leading to lawsuits or providers abandoning the scheme. Incentives such as bonuses awarded for positive changes of pre-defined rational use parameters are more likely to be accepted and should work better. Detailed implementation can be pilot before rolled out nationally. tested Patient expectations supporting Over-prescribing, NHIA could re-consider introducing copayments for prescriptions - but impact on access for the poor needs to be evaluated. Copayments can be a percentage or flat rate, per prescription or per drug. Exemptions can be applied for drugs with high public health relevance, chronic treatments, life- saving drugs, the first two drugs on each prescription or in other ways to limit negative impact on access. Copayments can also be limited in total amount per patient per year. Actual design of a copayment system also needs to consider NHIA's ability to monitor and prevent patients or providers from "gaming" the system.

MATERIAL AND METHODS

A deductive (quantitative) research approach was adopted to gather and collect the data. This approach was used as a means for testing objectively, the theories by examining the relationship among variables (Boateng, 2014) where observation of data in numerical values is possible. As perceived by a positivist, the researcher is independent of the outcome and either affects or affected by the subject of the research, and hence, emphasizes on a highly structured methodology to facilitate replication and quantifiable observations that leads to statistical analysis. According to Creswell (2009), а quantitative research is a means for testing objective theories by examining the relationship among variables. These variables can in turn be typically measured on instruments, such that number data can be analyzed employing statistical procedures. This method enables the researcher to use larger sample

such that number data can be analysed quantitatively employing statistical devices or procedures and the use of simple Analysis Of Variance (ANOVA).

Data collection techniques

The data which is primary in nature was collected quantitatively from the three Northern regions of Ghana. Two hundred (200) questionnaires each was administered in Northern region; Upper East region and Upper West region making a total sum of six hundred (600) questionnaires. The Metropolitan and Municipalities were selected for data collection. These were selected because of the high number of people living in them. That is highly populated areas of the three Northern Regions. The Tamale Metropolitan, Yendi Municipal and the Savelugu Municipal in the Northern Region were selected. The Bolgatanga Municipal, Navrongo Municipal and the Bawku Municipal in the Upper East Region were selected while the Wa Municipal, Lawra Municipal and Sissala East Municipality were selected in the Upper West Region. These questionnaires were delivered personally by the researcher; where assistance was given to the respondents who needed it in order to complete the questionnaire smoothly without any hindrance. Both structured and unstructured research questions were used to collect the data.

Sampling method

The researcher selected the three Northern regions which consists of Tamale in the Northern region; Bolgatanga in the Upper East region and Wa in the Upper West region of Ghana to collect the data. These regions were selected because of their high level of poverty and high patronage of the National Health Insurance Scheme (NHIS) in Ghana. The inhabitants of these regions depend heavily on the government hospitals for health care services since they cannot afford the private hospitals which do not accept NHIS cards for treatment. Health workers and people who have once or severally been admitted to government hospitals within their respective regions were sampled for data collection. The questionnaires were administered on six hundred respondents sampled (200 each) in each region of the three Northern Regions of Ghana.

The reliability and validity of data collected

In order to ensure reliability and validity of data collection, the researcher tested the research questions on a selected sample from the Bolgatanga Polytechnic and the Polytechnic's health centre using the students and staff of both institutions. The questionnaires were coded for reference and identification unethical purposes. То avoid behaviour, the respondents were adequately informed about the research and the purpose of the research was explained to them. Nobody was forced to answer the questions; those who did answer the questions did that on their own wish and understanding.

Data analysis

The researcher used a descriptive statistics such as pie chart, bar chart, histogram to describe the outcome of the research. Also, a Statistical table and devices were used to analyze the data quantitatively. A simple Analysis Of Variance (ANNOVA) was also used to compared and determine the differences of resources of facilities available in these regions.

A CONCEPTUAL FRAMEWORK

A conceptual framework was used to underpin the research. The researcher used a service quality known as SERVQUAL model to explain how the research work flows or forms the basis for the rest of the research to follow. A SERVOUAL or gaps model analysis according to Zeithaml P. B (2003), the gaps between the scores from each of the elements shows on each of the five dimensions of clients/customers' expectations are compared with the corresponding elements of perceptions. The gap becomes bigger when the customer's perceptions are farther away from his/her expectations and hence, customers' evaluations of service quality are low. The gap model positions the main strategies, decisions and concepts in service marketing in such a way that it starts with customer and subsequently builds the the organization's functions around what it wanted to close the gap between customer expectations and perceptions. This gap needs to be narrowed or closed by the service firms in order to satisfy or delight customers/clients and create long-lasting or with them sustainable customer relationships (Zeithaml and Bitner, 2003).

The gap 1 reflects the gaps between customers' expectations versus management perceptions; which

are mainly due to inadequate upward communication influenced by too many layers of management. The gap 2 represents the gaps between management perceptions of service quality versus service quality standardization and/or specifications; which often occurs as a result of lack of commitment to service quality or goals set by the service providers and also inadequate function standardizations. This gap needs to be closed by performance standards. The gap 3 shows the gaps between service specifications and service delivery. This occurs as a result of inadequate supervision from management and non-existent of teamwork, ambiguity, role conflicts, poor technology or employee job fit. The gap 4 emphasizes on gaps service deliverv versus between external communication coming from organizations overpromising and under-delivering and from inadequate communication. The gap 5 being the last gap represents the gaps between customer expectations and customer perceptions of the service delivery. Once customer expectations are influenced by past experiences, word of mouth recommendations and the level of personal needs, gaps are created from the shortfall of service provider as compared to customer expectations.

The gaps 1 to 5 are strongly related to the external customers. The gap 5 is often perceived to be a truly or factual measure of service quality. The rationale behind customer gaps analysis could be categorized into four broad deficiency areas such as: not knowing what the customers/clients expect from you; not selecting the appropriate service designs and specifications; not delivering to service specifications or standards; and not matching your performance to your promise made to customers. On the other extreme, customer expectations are also measured on a 7- point rating scale with anchor labels such as "not at all essential (1) and adequately essential" (7) and customer perceptions measured on another 7point rating scale with anchor labels of "strongly agree (1) and "strongly disagree (7) for the various dimensions. The average expectation rating is then deducted from the average perception rating. A high, positive rating means the dimension is a good one while a high, negative rating means the dimension is a bad or weak one and needs to be improved upou.



Source: Adapted from Zeithaml Parasuraman Berry (2003); Gaps model of service quality.

THE ANALYSIS AND DISCUSSION OF RESULTS

STATISTICAL TABLE 1

Age Group	F	x	F x	Mid Point	x^2	$F x^2$
Below	70	19.5	1365	20.5	380.25	1,863,225
19 – 20						
21 - 30	100	25.5	2550	30.5	650.25	6,502,500
31 - 40	75	35.5	2662.5	40.5	1260.25	7,088,906.25
41 - 50	86	45.5	3913	50.5	2070.25	15,311,569
51 - 60	69	55.5	3829.5	60.5	3080.25	14,665,070.25
61 – 70	72	65.5	4716	70.5	4290.25	22,240,656
71 - 80	58	75.5	4379	80.5	5700.25	19,175,641
81 - 90+	70	85.5	5985	90.5	7310.25	35,820,225

 $\sum f = 600$ $\sum f x =$

c = 29400

$$\sum fx^2 = 122,667,792.5$$

ageO





Sex of the respondents

283 of the respondents, representing 47.1% were made while 317 of them, representing 52.5% were female

The occupation of the respondents

200 of the respondents were students; which represented the higher number of 33.3% of the total respondents of 600. This is followed by the salary workers which account for 142, representing 10%; 74 unemployed representing 12.3% and 80 pensioners, representing 13.3%. However, the other occupations specified were only 44 respondents representing 7.3% of the total sample.

The number of times visited the hospital

Here, 234 of the respondents, which represented 39%, said they visited the hospital 3 times.

176 of them, representing 29.3% visited the hospital 4-6 times of their lives whiles 102 of them, representing 17% visited the hospital 7-9 times averagely.

The rest are 40, representing 6.6%; who visited the hospital 10-12 times of their live span; 28, representing 4.6% visited the hospital 13-15 times and finally, 20 of them, representing 3.3% visited the hospital 16 and more times.

The Pharmaceutical industry plays a crucial role in the service delivery process in the health sector in Ghana

Under this particular question, 190 respondents representing 31.6% agreed that the pharmaceutical industry plays an important role in the service delivery process in the health sector in Ghana while 160 respondents, representing 26.6% strongly agreed that the pharmaceutical sector plays a crucial role in service delivery. The 120 respondents representing 20% decided to remain neutral. Only 80 of them, representing 13.3% and 59 of them, representing 8.3% disagreed and strongly disagreed respectively that the pharmaceutical unit of the health sector plays a critical role in Ghana.



A single bar chart showing the role of a pharmaceutical unit of the health sector in Ghana is illustrated below

The Pharmacists play important role on the implementation of the National Health Insurance Scheme (NHIS) in Ghana

Responding to this question, 170 respondents representing 29.3% agreed that the pharmacists in Ghana play an important role in the implementation of the NHIS. A hundred and thirty-two (132), representing 22% were strongly agreed to this question while 130 of them, representing 21.6% decided to abstain in their feelings. On the other side, 80 of them, representing 13.3% disagreed to this effect while another 82, representing 13.6% were strongly disagreed

In effect, 51.3% of the respondents were of the view that the pharmaceutical sector or unit of the Ghana health service plays a crucial role on the implementation of the National Health Insurance Scheme (NHIS) in Ghana while 26.9% of them do not support this assertion. The 21.6% of the respondents neither agreed nor disagreed to this statement.

Again, a single bar chart showing the critical role played by pharmacists on the implementation of the NHIS in Ghana is demonstrated below:



The patients are satisfied with the services rendered by Pharmacists in the health sector in Ghana

Here, 134 out of the 600 respondents, representing 22.3% agreed that they are satisfied with the services provided by the pharmacists in the public health institutions in Ghana.

Fifty-six (56) of them, representing 9.3% were strongly agreed while 80 of them, representing 13.3% remained neutral (that is, they were neither satisfied

nor dissatisfied). On the other side, 174 of them, representing 29% disagreed, stating that they were dissatisfied with the service provided by pharmacists in the public health institutions in Ghana while 156, representing 26% were strongly disagreed to this submission.

A line graph indicating the patients' satisfaction level of the service delivered by pharmacists in the public health institutions in Ghana is shown below



The drug(s) prescribed to the patients by the doctor was not readily available at the dispensary

Responding to this statement; 170 of the respondents, representing 28.3% agreed that the drug prescribed to them by the medical doctors was not readily available at the dispensary of the hospitals visited; 180 respondents, representing 30% were strongly agreed to this assertion while 80 of them (the respondents) representing 13.3% remained neutral. However, 90 of the respondents, representing 15% disagreed that the drug prescribed to them by the doctor during their visit was not readily available while 80 of them, representing 13.3% strongly disagreed to this effect.

Statistical	table	and	a pie	chart	showing	the	unavailability	of	drugs a	at the	dispensary	is	demonstrated
below.													

Items	No. Of respondents	Percentage
Agreed	170	28.3%
Strongly agreed	180	30%

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Neutral	80	13.3%
Disagreed	90	15%
Strongly disagreed	80	13.3%



The educational background of the respondents

The Senior Secondary School Certificate Examination/ West Africa Secondary School Certificate Examination (SSSCE/WASSCE) holders who answered the questions were 146 representing 24.3% of the total respondents.

The Diploma holders were 122, representing 20.3%; the Degree holders were 144, representing 24% while the Post graduates degree holders were only 88, representing 14.6% simultaneously.

However, other qualifications such as the Higher National Diplomas (HND) and Professional qualifications such as ICAG, ACCA, CIM UK and ICSA were 100 in number, representing 16.6%

A single bar chart demonstrating the educational background of the respondents is displayed below:



The availability of health facilities and resources such as Hospitals, Health Centres, Chip Compounds/Clinics, Ambulance Services, Vehicles/Distribution Vans, Motor Bikes and Dispensary units in the selected Metropolitan, and Municipalities of the three Northern Regions are presented in the Table 2 below:

Table 2

Upper East Region	Northern Region	Upper West Region
18	20	18
12	17	13
08	10	06
01	03	01
07	09	05
23	31	28
40	52	37
121	142	108

Using ANOVA to test the differences in the means of the three samples of data; regarding the availability of resources and health facilities grouped in the above:

(a) Let

 H_0 : $\mu UER = \mu NR = \mu UWR =>$ No significant difference

Hi: At least μ ; Ui will differ

Hi: μ ; $\neq \mu$ j for any two pairs of regions

Hi: At least two of them; $\mu UER,\ \mu NR\ \mu UW\ \mu K$ differ

Hi: $\mu \neq \mu j$ for at least two pairs

The value of the test statistics

$$F - Test - stat = MSG$$

Where the mean of $MSG = \underline{SSG} = \underline{SST}$

Where K = Number of groups or treatments = 3

SST = SSG

 $= \epsilon ni (\bar{x}I - \bar{x})^2$

121

Where ni is the sample size of each group or treatment; xi is the mean of each group and $\overline{\overline{x}}$ is the overall mean for all the groups.

The mean of each group is calculated as:

$$\overline{\times} UER = \frac{121}{7} = 17.3$$

$$\overline{\times} NR = \frac{142}{7} = 20.3$$

$$\overline{\times} UWR = \frac{108}{7} = 15.4$$

$$= 17.3 + 20.3 + 15.4 = \frac{235.7}{3} = 78.57$$
Mean = 78.57

Alternatively, the $\overline{\times}$ can be calculated as

 $\frac{121+142+108}{7+7+7} = \frac{371}{21} = 17.7 = 17.3 + 20.3 + 15.4 =$ $\frac{235.7}{3} = 78.57$ $= 7 (17.3 - 17.7)^{2} + 7 (20.3 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2} + 7 |(15.4 - 17.7)^{2}$ $(17.7)^2 = 85.47$ SSG = 85.47 $SSW = \frac{k}{m} = \sum_{i} ni (Xii - \overline{X}i)^2$ $[(18 - 17.3)^{2} + (12 - 17.3)^{2} + (8 - 17.3)^{2} + (1 - 17.3)^{2} + (7 - 17.3)^{2} + (23 - 17.3)^{2} + (40 - 17.3)^{2}]$ = 0.49 + 28.09 + 86.49 + 265.69 + 106.09 + 32.49+315.29= 1034.6 $[(20 - 20.3)^2 + (17 - 20.3)^2 + (10 - 20.3)^2 + (3 - 20.3)^2 + (9 - 20.3)^2 + (31 - 20.3)^2 + 52 - 20.3)^2]$ = 0.09 + 10.89 + 106.09 + 299.29 + 127.69 + 114.49+1004.89= 1.663.43 $[(18 - 15.4)^2 + 13 - 15.4)^2 + (6 - 15.4)^2 + (1 - 15.4)^2$ $+ (5 - 15.4)^2 + (28 - 15.4)^2 + (37 - 15.4)^2]$ = 6.76 + 5.76 + 88.36 + 207.36 + 108.16 + 158.76 +466.56 = 1041.72SSW = 3.739.75

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$$SSW = 1,034.75 + 1,663.43 + 1,041.72$$

$$SSW = 3,739.75$$

:. 7 (17.3 - 17.7)2 + 7 (20.3 - 17.7)2 + 7(15.4 - 17.7)2

$$= 1.12 + 47.32 + 37.03 = 85.47$$

$$SSG = 85.47 \frac{SSG}{K-1} = \frac{85.47}{3-1} = \frac{85.47}{2} = 4.75$$

$$\frac{SSW}{n-k} = \frac{3,739.75}{21-3} = \frac{3739.75}{18} = 207.73$$

$$F - Statistics = \frac{SSG}{SSW} = \frac{4.75}{207.73} = 0.02$$

$$= 0.05 \text{ K-1 } \text{N} - \text{K}$$

$$F .0.05, 2, 18$$

$$3.56$$

Decision Rule

Reject the H_0 if f-statistic is > the critical value; or otherwise accept it

Since the F- statistic of 0.02 is < the critical value (P-Value) of 3.56, then we accept the H_o

There is therefore, no statistically significant difference in the mean availability of health facilities and resources in the three northern regions in Ghana.

DISCUSSION

The study found that the pharmaceutical industry plays a crucial role in the service delivery process in the health sector in Ghana. According to the findings, the respondents agreed and strongly agreed that pharmacists play a critical role in the service delivery process in the health sector, with the view that they provide useful information about the drugs to patients (the doses). Only a few of them remained neutral while the small number of them disagreed or strongly disagreed.

It was also discovered from the study that pharmacists play an important role on the implementation of the NHIS in Ghana. The premium payment made by the beneficiaries of the National Health Insurance Scheme rely on pharmacists for the drugs often prescribed to them by the doctors anytime they visited the hospital. However, they are strongly agreed that the drugs often prescribed to them by their doctors are often not available at the dispensary during their visit. The study found that those who are not subscribed to the NHIS are often given the drug prescribed to them because they often pay cash for the drugs. This discriminatory behaviour on the part of the pharmaceutical staff must stop.

It was revealed that patients are not satisfied with the services of pharmacists in the health sector on the account that the drugs which are covered by the NHIS are often not available. They are asked to go and purchase the drug from the drugs store, with an excuse that the said drug is not at their disposal. The common drugs such as Paracetamol (both tablets and syrup), Chloroquime (both tablets and syrup), Pain killers, Brufen, Ampinislim, Amodiaquine and some Capsules are often given to them. Some of the expensive maladrugs for curing malaria like Atovaquine Proguanil (Malorone), Doxycycline, Primaquine, Sulfonamides (Lariam), Mefloquine, Tetracycline, Clindamycin and Tafenoquine are not always available but covered by the NHIS policy. Meanwhile those patients who are not on the NHIS and are ready to pay for the said medications have access to them.

The study also found that, there is no statistically significant difference in the distribution of resources and health facilities in the three Northern regions of Ghana. The health facilities such as hospitals, health centre's, clinics, and chip compounds are equitably distributed and are at the door steps of the people. The resources and logistics such as motor bikes, vehicles and ambulance services are also equitably distributed except the ambulance services; which the Upper East and West regions are lacking while the Northern region has five (5). The Upper East region is depending on the National Fire Service for ambulance service during emergency cases.

Limitations of the study

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The study is limited in scope to the three northern regions in the health sector in Ghana. This limitation is a result of the research methodology; where the researcher has to sample the regions for data collection. However, the quantification and replication of the findings to other regions in Ghana is possible since the respondents have similar characteristics and perception.

Conclusion

Though the people are satisfied with the services of Pharmacists in Ghana in the area of giving them the useful information regarding the doses and uses of drugs, they are however, dissatisfied with them due to the unavailability of the drugs prescribed to them by the medical doctors whom they have attended to. The government must ensure that something concrete is done on the improvement of the supply, distribution and circulation of drugs in the public health institutions in Ghana so as to enable the beneficiaries of the NHIS get something worth if not of value of their investment on the health insurance policy. The government quest to put up a drone delivery services in health sector is the right directions. The government should also do well to put in place the ambulance services in the regional and some of the district hospitals to ensure efficient and effective health-care delivery process in Ghana since the ambulances are lacking in the Upper East Upper West regions for referral cases. The Pharmacists plays a crucial role in the health service delivery process especially on the implementation of the NHIS in Ghana. They need to re-strategize their work to ensure that all the important drugs are at their disposal in order to create satisfaction among NHIS holders in the country.

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