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Research Article

INFLUENCE OF THIRD PARTY SYSTEM ON RATIONAL DRUG USE IN A TERTIARY HOSPITAL IN BENIN CITY NIGERIA: EXPLORING SYSTEM DYNAMICS

ISIBOGE PD[1], OGBONNA BO[2], ELE GN[3], ORJI EC[2], EJIM CE, ONYEYILI AN[4], UZODINMA SU[2], AJAGU N[2],IWEH MI[2],

[1]*Department of Clinical Pharmacy and Pharmacy Practice, Igbinedion University Okada Edo State Nigeria*
[2]*Department of Clinical Pharmacy and Pharmacy Management, Nnamdi Azikiwe University, Awka Nigeria*
[3]*Department of Pharmaceutical Services, Nnamdi Azikiwe University Teaching Hospital, Nnewi, Nigeria*
[4]Department of Nursing Services, Nnamdi Azikiwe University Teaching Hospital, Nnewi, Nigeria
Email id : bo.ogbonna@unizik.edu.ng
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ABSTRACT
Catastrophic spending is a major limitation of access to quality health care especially in developing countries. Health insurance enables resource pooling and burden sharing serves as a way of eliminating the challenges. The study assessed the level of rational drug use in National Health Insurance Scheme (NHIS) andnon-NHIS facility based on World Health Organization's (WHO) Standard Drug Use Indicators to generate data for planning and policy. The study was a cross-sectional survey. Drug utilization in the NHIS and non-NHIS facilities was benchmarked withthe WHO Standard Drug Use Indicators.The data was summarized with descriptive statistics. The average number of drugs prescribed per encounter was 3.92 (with range 3.80 – 3.97) for the NHIS clinics and 3.15 (with range 3.05 – 3.30) for the General Practice Clinic (GPC). The average percentage of drugs prescribed from the National essential drugs list was 80.46 (range 40.18 – 92.90) and 90.10 (range of 86.38 – 94.37) for the NHIS and GPC clinics respective. The average percentage of encounter with antibiotics was 12.77 (range 6.48 – 15.44) and 12.86 (range 10.22 – 15.46) for the NHIS and GPC clinics respectively. the third party payment system operational in the NHIS facility negatively influenced drug utilization.

Keywords: healthcare, funding, health insurance, patient care, access to healthcare, Nigeria

INTRODUCTION

The three tiers of healthcare services namely; Primary Health Care (PHC), Secondary Health Care (SHC), and Tertiary Health Care (THC) available in Nigeria can be accessed in one location. The delineation of the three tiers is very clear but well integrated to allow for easy referral from one level of care to another. At inception in 1973 the hospital had about 300 beds maximum capacity but today it has expanded to a capacity of about 650 beds and still expanding [1,2]. The GPC and the Accident and Emergency Centre (A & E. C) forms the first tier of health care services whilst the Consultant Out Patients Department (COPD) forms second tier and other medical sub-specialties such as Burns and Reconstructive Surgery etc form the third tier. Prior to the commencement of the NHIS in the country, health bills were essentially on out-of pocket cash payment by the patient/family. This made orthodox healthcare inaccessible to a large proportion of the population. The NHIS was set up to address this lapse but to be implemented in phases beginning with the public sector of the economy in particular the Federal Government employees. The private sector and the unorganized sector consisting of artisans, traders and self-employed next, whilst the State Governments are encouraged to key into the system as early as possible for their employees.The study assessed the level of rational drug use in

National Health Insurance Scheme (NHIS) and non-NHIS facility based on World Health Organization's (WHO) Standard Drug Use Indicators to generate data for planning and policy [1-4]

Methods

The study was a retrospective cross sectional study that utilizedprescriptions for the same period from the pharmacies serving theGPC clinics and the NHIS clinics respectively. The prescriptions from December 2011 to June 2012 were used with the exception of that for February 2012 because the corresponding prescriptions from the GPC clinics could not located.The two facilities were opened to patients for 26 days per month and 20 encounters required daily for the study. This translated to 520 encounters monthly. The total number of prescriptions for the month was divided by 520 to determine the sampling intervals and the samples were selected accordingly. The samples were packaged and labeled appropriately awaiting data collection. Data collection was done by pharmacists who are well acquainted with names of drugs, essential drugs list and coding for drug products adopted for the study.

Data analysis

The data were collected on Microsoft Excel package and calculations for indicators were done in accordance with procedures described in the WHO manual on,"How to investigate drug use in Health Facilities", and related studies[1,3].Data was summarized to compare the mean, standard deviation and the population of samples from the two facilities.The selected core drug use indicators were from Group 1: for measuring Prescribing indicators namely; Average number of drugs prescribed per encounter; Average percentage of drugs prescribed in generic names; Average percentage of prescriptions containing antibiotic(s); Average percentage of prescriptions containing injections and Average percentage of drugs prescribed contained in the Essential drugs list.The average number of drugs prescribed per encounter was calculated by dividing the total number of drugs prescribed by the number of prescriptions surveyed. The average percentage of drugs prescribed by generic name was calculated by, dividing the number of drugs prescribed by generic name by the total number of drugs prescribed and multiplied by 100. The average percentage of drugs prescribed from the Essential drugs list (National) was determined by dividing the number of drugs prescribed from the EDL by the total number of drugs prescribed in the survey and multiplied by 100. Similarly, the average percentages of prescriptions containing antibiotics and prescriptions with injections were calculated by dividing the number of encounters with antibiotic and injections respectively with the total number of encounters surveyed.

Results

Table 1: Comparison of drug utilization indices in the facilities with WHO standard indicators

Variables	WHO standard for NHIS	NHIS	WHO standard for NON-NHIS	NON-NHIS
Average number of drugs prescribed per encounter	*3.80 – 3.97*	*3.92*	*3.05 –3.30*	*3.15*
Average percentage of drugs prescribed by their generic name	*26.95 – 54.25*	*47.80*	*27.67 – 48.52*	*32.41*
Average percentage of encounter with antibiotics	*6.48 – 15.44*	*12.77*	*10.22 – 15.46*	*12.86*
Average percentage of encounter with prescribed injections	*1.65 – 3.58*	*2.97*	*1.91 – 4.50*	*3.46*
Average percentage of drugs prescribed from the National essential drugs list	*40.18 – 92.90*	*80.46*	*86.38 – 94.37*	*90.10*

NHIS: National Health Insurance Scheme, NON-NHIS: Non- National Health Insurance Scheme

Discussion

The average number of drugs prescribed per encounter at the NHIS and GPC were greater than the published result of 2.53 in a similar study in a tertiary care hospital in Nepal carried out in 2008. This could be attributed to varying levels of policy implementation and government funding for health within the two countries and implementation of healthcare development services [5]. However, the 3.9 published in a studyfrom Olabisi Onabanjo University Teaching Hospital (OOUTH), Sagamu Nigeriain 2010 [6], and that from this study were lower than the 4.7 obtained as the national average in the published baseline assessment of the Nigerian Pharmaceutical Sector of 2002 [7].These results could be associated with polypharmacy and irrational prescribing at the NHIS and GPC clinics. The NHIS clinics prescribed about 25% more drugs per encounter than the GPC clinics. The patients that attended the NHIS and GPC clinics were drawn from the same geographical area of the country and therefore share the same prevailing diseases. The physicians that see both sets of patients are all Family Medicine Practitioners (FMP) who rotate between the two sets of clinics from over time. Thus confounding factors in terms of knowledge base, and emotional attachment to patients canceled out. The patients that attended the GPC clinics payed directly from their pocket for the drugs and the physicians tend to be more considerate while prescribing. On the other hand, the NHIS is a social health insurance scheme and does not limit the patients on the overall value of what they can access irrespective of their contributions. Drugs prescribed under the NHIS were tantamount to 'free' drugs. With this mind set, physicians may tend to be liberal in prescribing. The average percentage of drugs prescribed in generic names at the NHIS clinic and the GPC clinics was low for a Nation that subscribed to WHO Essential Drugs Program (EDP) since the mid-1980s. The EDP sets out to identify and list (i.e., the Essential Drugs List (EDL) and the healthcare system to ensure that the drugs on the EDL are constantly available in sufficient quantities and at affordable prices to the patients. The EDP also champions the use of generic alternatives and generic

prescribing as a means of reducing the cost of drug therapies worldwide. Most prescribers felt that a formulary was management's way of impinging on their freedom and prescribing right. It is therefore not surprising that the level of generic prescribing was low in the facility. Non availability of institutional guidelines by the hospital management on the way and manner in which the drug company representatives do their detailing means that some representatives isolate some physicians in sub-specialties in which their products are most likely to be utilized. Physicians are human and subtle persuasions and enticements do have influence on their prescribing patterns [8].Prescribing branded products as the companies will always insist has the tendency of escalating the cost of medications for the patients.That the NHIS clinics prescribed more with generic names than the GPC can be explained by the fact that the NHIS has an approved list of drugs from which all prescriptions should be based. Any drug prescribed outside this list may not reimburse to the health care providers by the Health Management Organizations (HMO).There was a similarity on the percentage of encounter with antibiotics at the NHIS and GPC. This lends credence to our earlier statement that the patients that attended both clinics were from the same geographical location with same diseases prevalence and incidence. The results showed drastic reduction from the national average of 59% reported in 2002 [7].The percentage encounter with injection was low for the NHIS and GPC clinics when compared to the national average of 38% in 2002. This reduction in the use of injections maybe partly due to the persistent enlightenment and public campaign on the effectiveness of other routes of drug administration embarked upon in the last decade by agencies such as the National Agency for Food Drugs and Control (NAFDAC) [7]. However, the use of injections at the GPC was higher than that at the NHIS. It may be associated with patients' pressure on physicians to prescribe injection. The cultural belief of people who think that injections are more powerful than tablets and capsules make prescribers tend to prescribe them to meet patient's expectation [9].Whereas only 80.46% of NHIS prescriptions were from the National Essential Drugs List, GPC had 90.10% of their prescribed drugs from the EDL. These results were close to expected as the National baseline of 2002 reported more than 90% though an exact figure was not stated [7].The lower encounter with drugs on EDL at the NHIS facility may be a combination of the free spirit of physicians who feel they should not be restricted on the one hand and the desire to oblige the patients with the branded product of their expectation as generic drugs aregenerally regarded as cheap drugslocally. Some patients feel that cheap drugs are synonymous to low grade or poor quality.

Conclusion

The prescribing indicators in both the both clinics suggested irrational prescribing and irrational use of drugs. However, the GPC clinics seemed to have fared better than the NHIS where there were more drugs prescribed per encounter. Having addressed the issues of variables and confounding factors in the discussions, the only conclusion we can arrive at for the difference in the level of irrational prescribing at the NHIS clinics was the third party payment system used in the facility.

Conflict of interest

The authors have non to declare

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