Perception On Effectiveness Of Brand And Generic Drugs Among Physicians And In-Patient Of Medical Ward In Yobe State Specialist Hospital Damaturu. Nigeria

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Abstract: *This study was carried out to determine the perception of physicians and in-patient admitted into medical ward of Yobe State Specialist hospital Damaturu on effectiveness of brand and generic drugs and to explore the level of adoption of generic drugs by physicians in the study area. A quasi-experimental design was used for this study were a questionnaire was distributed to gather relevant data from the research participant,* ***Results****: A total of 123 in-patients participated with 31% of the respondent age 31-40 years. 54% are male while 46% are female. 31% are farmers, 88% are Muslims, 45% are married and 46% attended tertiary institution. 52% of the respondents have adequate knowledge about generic medicines while 48% of the respondents also have adequate knowledge on brand medicines. Majority of the respondent's perception towards effectiveness of generic medicines is negative and Majority of the respondent perception towards branded medicines is positive. 80% of the respondent (physicians) adopt prescription of generic drugs. Creation of public awareness Programme or seminar will helps reduce the negative perception of physicians and patient on the effectiveness of branded over generic medicines.*

KEYWORD*: Perception, Effectiveness, Brand, Generic, Drugs.*

Background of the study

Generic medicine use is increasing both in developing and developed countries. Prescribing trends among physicians can be investigated using the drug use indicators suggested by the World Health Organization (WHO 2013). In a previous study of this kind, we demonstrated that generic prescription by both consultants and general practitioners in the United Arab Emirates was far from ideal However, there is evidence that not only doctors but also pharmacists hold negative views of generics and resist prescribing generic medicines (Chong, et al 2017) .Patients have been shown to have poor knowledge and misconceptions about generic medicines (Al Ameri, et al 2011). Many studies have reported patients to have negative views about generics as they believe generics are less effective, of lower quality and unsuitable for treatment of major illnesses, as compared to their branded equivalents (Faasse, et al 2013). It is worth noting that some patients might ask the prescriber for a particular drug by name which is usually brand and expensive drug either because of previous experience with the medicine or due to the impact of promotional activity. It has also been suggested that such an insistence on an expensive medicine may be because the patient does not pay the full cost or because they believe that those drugs are better than cheaper ones (Quintala,et al 2012). Keeping this in mind, it seems rather important to evaluate the level of knowledge, perception and attitudes of patients and if the levels are poor or misconception were of significant negative impact on generics use, interventions must

be implemented to increase awareness of the public towards generic drugs as substitutes for expensive counterpart brands. It must be noted that low income patients and those without medical insurance coverage may not adhere to their prescribed drugs if they cannot afford its cost and as such drug compliance may not be achieved and this would negatively impact therapeutic outcomes. On the other hand, prescribing generic medicine by the physician or replacement of brand by generic by the pharmacist would have the opposite effect. Taken cost of medicine into consideration, it must be remembered that generics, according to estimates of Food and Drug Administration (FDA) are usually 20% - 70% less expensive than their counterpart brands (food and drug administration, 2023). Therefore this study is carryout to determine the perception on effectiveness of generic and brand drugs among physician and in-patient in medical ward Yobe State Specialist Hospital Damaturu. Nigeria

ECONOMICS OF GENERIC DRUG

When a pharmaceutical company first markets a drug, it is usually under a patent that, until it expires, the company can use to exclude competitors by suing them for patent infringement (Frakt and Austin, 2015). Pharmaceutical companies that develop new drugs generally only invest in drug candidates with strong patent protection as a strategy to recoup their costs of drug development (including the costs of the drug candidates that fail) and to make a profit. Drug companies that bring new products have several product line extension strategies they use to extend their exclusivity, some of which are seen as gaming the system and labeled "ever greening" by critics, but at some point, there is no patent protection available (Generic Pharmaceutical Association, 2015). For as long as a drug patent lasts, a brand-name company enjoys a period of market exclusivity, or monopoly, in which the company is able to set the price of the drug at a level that maximizes profit. This profit often greatly exceeds the development and production costs of the drug, allowing the company to offset the cost of research and development of other drugs that are not profitable or do not pass clinical trials (Generic Pharmaceutical Association, 2015). The impact of loss of patent exclusivity on pharmaceutical products varies significantly across different product classes (e.g., biologics vs. small molecules), largely due to regulatory, legal and manufacturing hurdles associated with such products. Indeed, the greater degree of 'brand-brand' competitive dynamics seen in the biologics and complex generics space allows manufacturers of originators to better protect market share following loss of patent exclusivity.

Large pharmaceutical companies often spend millions protecting their patents from generic competition (Generic Pharmaceutical Association, 2015). Apart from litigation, they may reformulate a drug or license a subsidiary (or another company) to sell generics under the original patent.

Generic drugs are usually sold for significantly lower prices than their branded equivalents and at lower profit margins Generic drugs are usually sold for significantly lower prices than their branded equivalents and at lower profit margins. One reason for this is that competition increases among producers when a drug is no longer protected by patents. Generic companies incur fewer costs in creating generic drugs only the cost of manufacturing, without the costs of drug discovery and drug development and are therefore able to maintain profitability at a lower price (Benson and Mike, 2015).

REGULATION OF GENERIC DRUG

Most developed nations require generic drug manufacturers to prove that their formulations are bioequivalent to their brand-name counterparts (Etherton-Beer, 2018). Bioequivalence does not mean generic drugs must be exactly the same as the brand-name product

("pharmaceutical equivalent"). Chemical differences may exist; a different salt or ester may be used, for instance. Different inactive ingredients means that the generic may look different from the originator brand (Etherton-Beer, 2018). However, the therapeutic effect of the drug must be the same "pharmaceutical alternative".

ACCEPTANCE OF GENERIC DRUG

Some generic drugs are viewed with suspicion by doctors. For example, warfarin (Coumadin) has a narrow therapeutic window and requires frequent blood tests to make sure patients do not have a sub therapeutic or a toxic level. In some countries (for example, Australia) where a drug is prescribed under more than one brand name, doctors may choose not to allow pharmacists to substitute a brand different from the one prescribed unless the consumer requests it. (Stephanie, 2017

FRAUD IN GENERIC DRUGS

A series of scandals around the approval of generic drugs in the late 1980s shook public confidence in generic drugs; there were several instances in which companies obtained bioequivalence data fraudulently, by using the branded drug in their tests instead of their own product, and a congressional investigation found corruption at the FDA, where employees were accepting bribes to approve some generic companies' applications and delaying or denying others (Zheng,, 2013).

BRAND DRUG

Brand drug is a drug product originally discovered and developed by a pharmaceutical company. Under a specific name or trademark and that is protected by a patent. To develop a new medication, certain companies do a tremendous amount of work and research to find a medication that will be effective and safe for use. During development, new drugs are often put under patent protection, which protects the sponsor's investment in the drug's development by giving them the sole right to sell the drug while the patent is in effect. If a drug completes development and is approved by the FDA, it will be approved with both a brand and generic name. The brand name of a medication is the name given by the company that makes the drug and is usually easy to say for sales and marketing purposes. The generic name, on the other hand, is the name of the active ingredient. The key to understand is, though the generic name exists, the company who developed the drug, through its patents, receives an exclusivity period where it has the only rights to sell the medication under either the brand or generic name. During the period of patent protection, the company sets the price to a point where it can recover research and development costs along with other cost, like marketing, while trying to make a profit (Stephanie, 2017). When a new drug is discovered, the company that discovered it would apply for patency to prevent other companies from producing and selling the drug. This patency may take up to 20 years and during this period, the company will produce and sell the drug under a brand name to recover its investment and make a profit. With time, this name becomes synonymous with the drug. But after the patency expires, other companies are allowed to produce a similar drug. It is what gave rise to brand and generic name in drugs

PATENT PROTECTION OF DRUGS

In the United States, a company that develops a new drug can be granted a patent for the drug itself, for the way the drug is made, for the way the drug is to be used, and even for the method of delivering and releasing the drug into the bloodstream. Thus, a company often owns more than one patent for a drug. Patents grant the company exclusive rights to a drug for 20 years. Additional patents can sometimes be filed to extend the patent life. Usually, about 10 years elapse between the time a drug is discovered (when the patent is obtained) and the time the drug is approved for human use, leaving the company only about half of the patent time to exclusively market a new drug. The Food and Drug Administration (FDA) may choose to accelerate the approval process for drugs to treat acquired

Immunodeficiency syndrome (AIDS), cancer, and other life-threatening disorders when no current effective treatment exists. A generic drug may be sold under its generic name or under a brand name (a branded generic drug) but not under the brand name used by the original patent-holder. Not all off-patent drugs have generic versions. Sometimes a drug is too hard to duplicate, or adequate tests are not available to prove that the generic drug acts the same as the brand-name drug. Sometimes the market for the drug is so small that producing another version does not make good business sense (Smith, 2021).

EFFECTIVESS OF BRAND AND GENERIC DRUGS

Research conducted by Desai et.al (2019) on Comparative effectiveness of generic and brand-name medication, their study observed that use of generics was associated with comparable clinical outcomes to use of brand-name products. These results could help in promoting educational interventions aimed at increasing patient and provider confidence in the ability of generic medicines to manage chronic diseases. Also, research conducted by Gallelli (2013) on Safety and efficacy of generic drugs with respect to brand formulation their research finding reveal that, the use of generic drugs could be related with an increased days of disease (time to relapse) or might lead to a therapeutic failure; on the other hand, a higher drug concentration might expose patients to an increased risk of dose-dependent side-effects. Overall, it is advisable to well evaluate the effects of generic formulations during the therapeutic treatment, (Gallelli, 2013) it is necessary to underline the importance that clinician's change their attitude toward pharmacovigilance and post-marketing surveillance systems, which can help to identify the lack of efficacy during the treatment with generic formulations.

PERCEPTION OF IN PATIENTS ON GENERIC DRUG USE

Research conducted by Stuart, (2017) on Patients' Perception of Generic Drugs at Health Institutions in Trinidad and Tobago their research finding reveal that patients demonstrated a "good" perception of generic drugs and education predominantly enhanced patients' perception. Patients require assurance by policy-makers, physicians and pharmacists that the generic drugs offered to the public are of satisfactory quality; this initiative could improve patients' health outcomes. Investigating patients' perception may assist in the therapeutic management of their chronic diseases, and particularly drug adherence. Generic drugs are valuable in any healthcare system. Generic drugs are widely used in this twin island and some knowledge about patients' perception can have a significant effect on how to assist in the management of patients. As well as, to make persons responsible for purchasing of drugs for the national formulary aware of such data and hence see a need to implement measures to appropriately assess medications used on the formulary. In another research conducted by Bhattacharya, (2018) on Patient Perception about Generic vs. Branded Medicines Prescribed in a Tertiary Care Hospital in Northern India their study reveal that knowledge and attitude about generic medicines among participants were poor. Some of them had wrong information, which is not a good sign for implementation and sustainability of Jan Aushadhi scheme in government hospitals.

LEVEL OF ADOPTION OF GENERIC DRUGS BY PHYSICIAN

A Study conducted by Tachi, (2018) on the adoption of generic drugs by a hospital: effects on drug dispensation among community pharmacies their research study suggests that the use of generic drugs by pharmacies is promoted and drug costs are lowered as a result of the adoption of generic drugs by a large hospital. The data in this study constitutes important evidence that can be used by the national government to create proposals to reform the healthcare system and revise government medical policies.

In another research conducted by Garjon, (2012) on Adoption of new drugs by physicians their research finding reveal that The number of adopters of a new drug increases quickly in the first months and reaches a plateau. The number of adopter family physicians

varies considerably for different drugs. The adoption of new drugs is faster in specialists. The time of adoption should be considered to promote rational prescribing by providing timely information about new drugs and independent medical education.

Methodology

Quasi-experimental research design was used for the study, the target population comprised of physicians (55) and in-patients in both male and female medical ward (34 and 34 respectively) totaling 123 respondents as the sample size, Convenient sampling technique was used to adopt the entire target population. Questionnaire was used as an instrument of data collection. The data was collected through self-administration of the questionnaire to the respondents in other to elicit authentic information. The data was analyzed using descriptive statistics and presented using frequency distribution table and percentages.

Results

TABLE 1:

DEMOGRAPHIC DATA OF THE RESPONDENT

Age	**Response**	**Frequency**
20-30	20	29%
31-40	21	31%
41-50	17	25%
51-Above	10	15%
Total	68	100%
Occupation	**Response**	**Frequency**
Doctors	17	25%
Farmer	21	31%
Civil servant	16	24%
Others	14	20%
Total	68	100%
Religion	**Response**	**Frequency**
Islam	60	88%
Christianity	8	12%
Others	0	0%
Total	68	100%

Gender	**Response**	**Frequency**
Male	37	54%
Female	31	46%
Total	68	100%
Edu. background	**Response**	**Frequency**
Primary	14	20%
Secondary	17	25%
Tertiary	31	46%
Others	6	9%
TOTAL	68	100%

TABLE 2: KNOWLEDGE OF GENERIC DRUGS USED IN ROUTINE CARE OF PATIENTS.

S/N	**QUESTIONS**	**RESPONSE**	**FREQUENCY**	**PERCENTAGE**
7	Do you know what generic medicines are?	Yes	45	66%
		No	23	34%
		Total	68	100%
8	Do you know what brand medicines are?	Yes	42	62%
		No	26	38%
		Total	68	100%
9	Do you use generic or branded medicines	Yes	44	65%
		No	24	35%
		Total	68	100%
10	Will you choose a generic drug over a branded drug	Yes	21	31%
		No	47	69%
		Total	68	100%
11	If yes, which one do you use	Generic:	20	29%
		Brand:	24	35%
		I don't know:	11	17%
		Both:	13	19%
		Total	68	100%
12	Among generic name or branded medicine which one do you prefer?	Generic:	20	15%
		Brand:	22	32%
		Both:	17	25%
		I don't know:	19	28%
		Total	68	100%
13	Are generic medicines as effective as branded medicines?	Yes	22	32%
		No	34	50%
		I don't know	12	18%
		Total	68	100%
14	What type of prescription do you get from your doctor?	Generic:	26	38%
		Branded:	17	25%
		Both:	14	20%
		I don't know:	11	17%
		Total	68	100%

TABLE 3: PERCEPTION OF BOTH MALE AND FEMALE IN-PATIENT ON GENERIC DRUG USE.

S/n	Question	Response	Frequency	Percentage
15.	Is the quality of generic medicines better than that of branded medicines?	Yes No I Don't know **Total**	21 33 14 68	21% 48% 31% 100%
16.	If yes which one will you choose?	Generic: Brand: TOTAL	30 38 68	45% 55% 100%
17.	Compared to the branded drug do you think that the generic drug is of good quality	Less than the brand drug: Same as the brand drug: More than the brand drug: I don't know: **Total**	28 16 11 13 68	42% 23% 16% 19% 100%
18.	Compared to the branded drug do you think that generic drug is safe	Yes No **Total**	43 25 68	63% 37% 100%
19.	Do you buy or have you bought generic drugs because of the price?	Yes No **Total**	38 30 68	56% 44% 100%
20.	Do you think that the price of generic drugs is	Less than the brand drug: Same as the brand drug: More than the brand drug: I don't know: **Total**	30 15 11 12 68	44% 22% 16% 18% 100%

TABLE 4: LEVEL OF ADOPTION OF GENERIC DRUGS BY PHYSICIANS

S/N	QUESTION	RESPONSE	FREQUENCY	PERCENTAGE
21.	Do you know the difference between generic and brand drugs	Yes No **Total**	35 20 55	64% 36% 100%
22.	Do you prescribe generic drugs to patients in your facility?	Yes No **Total**	37 18 55	67% 33% 100%

23.	Do you prescribe drugs from local manufactures?	Yes No **Total**	25 30 55	45% 54% 100%
24.	Do you discuss with patients before prescribing generic drugs?	Yes No **Total**	40 15 55	73% 27% 100%
25.	Do you prescribe generic drug based on socio-economic status of patients?	Yes No **Total**	37 18 55	67% 33% 100%
26.	What is your opinion on the publicity for generic drugs	Excellent Good Fair Poor **Total**	10 30 10 5 55	18% 55% 18% 9% 100%
27.	Do you allow patient to substitute generic drugs for a brand or brand for a generic drug?	Generic for brand: Brand for generic: Both: **Total**	15 33 7 55	27% 60% 13% 100%
28.	IF YES WHY	Accessibility of the drug: Affordability of the drug: Financial status of the patient: Individual choice: Perception that generics are better than brand or brand are better than generics: **Total**	6 5 19 5 20 55	11% 9% 35% 9% 36% 100%

Discussions of Major findings.

The study findings shows that 50% are very much aware of generic drugs and they belief brand medicines are more effective than generic, this further justifies why 70% of the respondents' perceive generic medicines as ineffective and some even consider it to be fake drug. The finding further shows 80 % of the respondent (physicians) adopt prescribing generic drugs to their patients. The above study finding is in line with a research conducted by Desai, (2019) on Comparative effectiveness of generic and brand-name medication, his study observed that use of generics was associated with comparable clinical outcomes to use of brand-name products. These results could help in promoting educational interventions aimed at increasing patient and provider confidence in the ability of generic medicines to manage chronic diseases. The findings revealed that majority of the respondent are knowledgeable about generic drugs than brand drug but will rather choose branded medicines than generic for effectiveness to treat chronic diseases.

The findings is against a research conducted by Stuart, (2017) on Patients' Perception of Generic Drugs at Health Institutions in Trinidad and Tobago their research finding reveal that patients demonstrated a "good" perception of generic drugs and education predominantly enhanced patients' perception, though some of his respondents believe that generic medicines are of less quality than branded medicines. And that generic medicines are bought because of their price.

The finding finally shows that physicians prescribe generic drugs than branded drugs in their facility and that is because of the accessibility and affordability of the drugs in their facility and because of the socio-economic status of the patients in the hospital. And opinion of generic drugs by physicians is of "Good quality" which coincides with the research conducted by Tachi, (2018).

Conclusion

In conclusion, the result of the study indicates that majority of the respondent believe brand drugs are more effective than generic drugs because of their price, And they possess negative perception about generic medicines, though the physicians adopt prescriptions of generic medicines, This calls for intervention on the utilization of generic medicines among health workers, awareness of generic medicine usage among patients that generic medicines are same as branded medicines despite the fact their price difference.

RECCOMENDATION

- Create Public awareness programme or Seminar will helps reduce the negative perception of patient on the effectiveness of branded over generic medicines.

- Government and Regulatory Agencies should mandate Manufacturers to formulate generic medicines to work the same way and provide the same benefit as branded medicines.

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