RISING CASES OF ANTIBIOTICS SELF-MEDICATION AND ITS ASSOCIATED PREDICAMENT

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ABSTRACT

Antibiotics are medical products designed to cure or avoid bacterial infections that should be administered to patients based on a licensed health care professional's directive**. S**elf-medication is defined as the usage of medication, whether orthodox or traditional, for self-cure. The practice of antibiotics self-treatment is a global phenomenal. Indulgence of antibiotics self-medication had crippled the lives of many people with increase antibiotics resistance bacterial and disruption of gut microbiota. The practice of antibiotics self-medication was sustained and reinforced by easy information access on antibiotics uses and the accessibility of antibiotics in the environments. The menace of this practice is abruptly stoppage of the treatment when symptoms disappeared because of inadequate idea of the ailment. The best way to discourage antibiotics self-medication is to take the campaign to all stakeholders in antibiotics dealings to reduce the inflow of antibiotics and as well as to educate patient on the inherent dangers.

Keywords: Antibiotics, bacteria, self-medication, treatment, symptom and patient.

INTRODUCTION

Globally, public consciousness has been raised of the routine use and prevalence of self-medication antibiotics, as well as health risks associated with the prescribing of antibiotics by non-infectious disease doctors and antibiotics dispensed without proper prescription by pharmacies (Jamhour *et al*., 2017).

Sulfa medication was the reining medicine embraced all over the world prior to the plentiful development of penicillin in the 1940s (Keeney *et al*., 2014). Antibiotics are medications designed to cure or prevent bacterial infections, which are prescribed to patients by a licensed health care professional's directive (Ajibola *et al*., 2018). Self-medication, according to Mehmood *et al.* (2016), is defined as the use of medicine for self-cure, either orthodox or herbal.

It is generally believed that antibiotics are paramount products that are highly need by the populace. It has been the backbone of medicine, yet many people had taken it for granted (Wada, 2019). Statistically, it was proved that antibiotics were used by many on yearly basis to combat bacterial pathogens (Wada, 2019). However, the occurrence of antibiotics self-treatment is the perceived high cause of health risk globally (Kahnamouei-aghdam *et al.,* 2017).

Not only can antibiotics therapy affect the intended pathogen, but also the human body's floral host. The degree of harm to unintended microbial populations is based on the specificity of the drug (antibiotic) involved (Jernberg et al., 2010).

In Nigeria, anyone can visit the proprietary patent medicine vendors, hawkers, small shopkeepers who provide on-the-spot diagnosis and treat anything with buying just a few tablets instead of the full course — inadequate to bring cure an infection but enough to cause change to bacterial genetic constitution and gain resistance for complaints ranging diarrhoea, pain, wounds, and at the slightest hint of a cold or cough (Wada, 2019). This present review only emphasized the upsurge and the predicament of antibiotics self-medication and possible solutions

Prevalence of antibiotics self-medication
Self-medication is no longer news in societies (Kahnamouei-aghdam *et al.,* 2017). It has become a global phenomenal, principally in emerging countries, and is perceived as best option for patients who find it difficult to finance their health bill (Chipwaza *et al.,* 2014; Ngu *et al.,* 2018).

In the nation, Nigeria, there is reduced governmental control of anti-microbial deals, and acquisitions can be completed without the directive of a clinician and with expanded admittance to the web and normal adverts of drug items on TV in Nigeria, youngsters are exceptionally inclined to self-prescription with anti-infection agents (Ajibola *et al.,* 2018).

Ngu *et al.* (2018) stated that in the absence of medical services required, many individuals choose to receive initial medication at the comfort of their homes using traditional medicines and antibiotic drugs purchased from local chemist without direction on how to use the drug, which often times may not be the right medications, and this is common among people in underdeveloped and developing countries with poor health services.

The rate at which people use antibiotics self-medication varies greatly among the studied volunteers from different countries

and sex. Sunny *et al.* (2019) reported that males were more exposed to self-medication with antibacterial drugs than their female counterpart. Another study stated that medical students and health professionals are more prevalent to self-medication with antibiotics when compared with the general public (Nepal and Bhatta, 2018).

Self-inflicted cost by practicing antibiotics self-medication
One of the major reasons why people opt for antibiotics self-medication is to save cost (time and money) (Souza *et al.,* 2011; Seam *et al.,* 2018). However, the cost people incurred by practicing self-medication could be addiction to certain drug, hypertensive reactions, under dosage of medications that may lead to treatment failure, and also over dosage that could bring about damage to various body organs (Mehta *et al.,* 2015), and other health implications is interference with residential microorganisms which present derive away invading pathogens (Seam *et al.,* 2018), emergence of superbugs, drug over dependence, toxicity, and other health associated risks (Hughes *et al.,* 2018).

Sunny *et al. (*2019) reported that the major problem with multidrug-resistant is that the bacteria will be resistant to almost all the class of antibiotics drugs available in the market. This development leads to long duration of illnesses, frequent doctor visits, prolong stay in the hospital, left with few drug options, the requirement of costly medications, and even death at the end (Lei *et al.,* 2018). As the symptoms of many diseases are mainly mild, but inappropriate diagnosis and treatment can encourage severe health risks, people who practice self-treatment can suffer from a serious disease (Seam *et al.,* 2018). For the pharmaceutical and healthcare sectors, this epidemic is not only a health danger and a severe obstacle, but also increase the cost of treatment to whoever indulge in it (Ventola, 2015).

Conditions and confusions of antibiotics self-medication
People perception about the following health conditions: common cold, upper respiratory tract symptoms, sore throat, bronchitis and fever according to the report of Ngu *et al.* (2018), often times overlook correct prescription and opt for antibiotics (Naveed *et al.,* 2015; Wada, 2019). Ajibola *et al.* (2018) stated that antibiotics are formulated for the treatment of bacteria. With this information, using antibiotics for the treatment of any disease causing organisms other than the bacteria is wrong. Most informed source of self-medication generally; such as internet, friends, advertisement, old prescription for the same illness (Seam *et al.*, 2018)

Using antibiotics to treat malaria as reported by Ajibola *et al.* (2018) is the worst scenario of antibiotics self-medication. For instances, fever, which is defined as a rise in body temperature that go beyond the normal everyday changes and happens in association with an upsurge in the hypothalamic main position, for example, going from 37 degrees above (Salgado *et al.,* 2016) is symptomatic development which is common with many health challenges.

Other examples of symptomatic treatment resulted from self-medication include: treatment with antibiotics for common cold due to viral infection, which is completely ineffective except for secondary infection (Sunny *et al.,* 2019). Headache is also another problem; many diseases present headache often as symptom. Jamhour *et al.* (2017) stated that people treat

headache, colds, cough*,* running nose, with antibiotics but in reality, it is wrong. More than half people of developing countries have this common knowledge that even for minor common cold and flu like symptoms; antibiotics are best choice for medications (Naveed *et al.,* 2015).

Implication of gut microbiota disruption by antibiotics self-medication
According to Keeney *et al.* (2014), microbiota is the group of microorganisms (bacteria, archaea, protozoa, viruses and fungi) that reside in various parts of a multicellular host. In the human host, there are very many microbial cells that are normal flora of the oral and nasal cavities, the body surface and the gastrointestinal and urogenital tracts. It is estimated that microbial cells are more than human cells in ratio of 10:1, with the large intestine taking the lead (Keeney *et al.* 2014). O'Hara *et al.* (2006) and Sommer *et al.* (2013) reported that microbiota plays many roles such as metabolism, immunity and protection against invading pathogen.

Antibiotic treatment may be pathogen specific but also affect residential organisms of the human host. The administrations of antibacterial agents can interfere with the ecological balance between the human host and the residential microorganisms (Jernberg *et al.,* 2010). The decrease in the number of residential microflora owing to antimicrobial agents leads to different condition of ailment as well as development of antimicrobial resistance bacterial (Jernberg *et al.,* 2010). Especially, over dosage of antibiotics may lead to damage of gut commensals. Such loss triggers the proliferation of some yeasts, such as *Candida albicans*, and bacteria, such as *Proteus*, *Staphylococcus*, and *Clostridium difficile (C. difficile)*, that ordinarily present in few numbers, leading to malfunctions of colon or the manifestation of gut related ailments. (Sullivan *et al.,* 2001; Yoon and Yoon, 2018).

The great danger of gut-associated disease resulted from antibiotics is pseudomembranous colitis. Pseudomembranous colitis, also recognised as *C. difficile* colitis, is a worst form of antibiotic-associated diarrhea caused by an increase in *C. difficile*. According to Yoon and Yoon (2018), it also called *C. difficile* infection (CDI) which is one of the regular bacterial infections among patients continuously on antibiotics medication.

Another problem with antibiotics on the human host include disturbance of the metabolism and absorption of vitamins (Levy, 2000), modification of vulnerability to infections (Levy, 2000) and antibiotics resistance which is defined as a phenomenon when an antibiotic, which at its healing level was once able to cure or effectively halt the proliferation of the bacteria, has missed its potency (Ateshim *et al.,* 2019).

Common reasons and causes of self-medication
Antibiotics self-treatment commonly called self-medication has myriad of reasons as related to different societies: people life style, behavioural, financial status of patients, and educational level of patients and medical competence of health care professional (Naveed *et al.*, 2015).

Another related study by Kahnamouei-aghdam *et al.* (2017), stated the following causes: easily obtain drugs, free drug marketing, previous history of taking the medicine without a prescription, symptoms of recovery and related illness, symptoms of diagnosis of diseases by itself, not having time to

see a doctor, lack of understanding of the consequences of used medications, misunderstanding of the nature of the disease, an assured feeling of not needing a doctor's visit, knowledge of antibiotics, and advice from others.

 Lei *et al.* (2018), stated that high medical cost, avoiding of seeing medical doctor and mild disease cases were the causes of self-medication. Sunny *et al.* (2019), also reported that desire of self-care and feeling of compassion toward household fellows in illness and medications leftover from previous prescriptions (Grigoryan *et al.,* 2018).

Common antibiotic for self-medication

The antibiotics that is common for self-medication vary from place to place and region to region. It depends on the existing knowledge of the antibiotics and the prevailing one (the commonly sold) (Gebretekle and Serbessa, 2016). However, one ready available drug for self-cure was amoxicillin (Nepal and Bhatta, 2018) and this observation was consistent with many studies.

The campaign to cushion the effect of antibiotics self-medication

The successive campaign strategies to avoid the effects of self-medication with antibiotics are to ensure that individuals are thought of the uses of antibiotics and the resulting health consequences of their abuse (McCullough *et al.,* 2016), and the basic understanding of different drugs available for sales, for instance, drug sold on the counter and the antibiotics. The drug prescription must be brought to the attention of pharmacists.

Having established the informed source of antibiotics self-treatment such as patients' information about drugs from the previous prescriptions, friends, internet and media, therefore, Physicians should restrict superfluous antibiotic prescriptions, adopt guideline-based procedures and also engage in antibiotic-related issue campaigns (Ateshim *et al.,* 2019).

Pharmacists should also have the stamina to educate patient about the health implication on the uses of antibiotic without consent of the physician and advocate for not to patronise antibiotics sales without government approval (Nepal and Bhatta, 2018). Other health care provider programs should be; to provide traditionally sensitive personalized information appropriate to the people in question and to sensitize clinicians to identify victim of non-prescription drug users (Shrivastava *et al.,* 2014).

CONCLUSION

Antibiotics self-medication had become societal menace, knowingly or unknowingly. Self-medication had become a general practice. People find it easy to purchase antibiotics from chemist without prescription or any advice from physicians simply because of their previous success in similar treatment and ability to mention the name of the antibiotics of their interest. This unperceived hazardous practice had plunged the populace into severe medical problems.

The case of antibiotics resistance bacterial popularly known as super bug has make life difficult with many victims. The major challenge is with the people who are in charge of selling this drug to the users. Though, they may not be aware of antibiotic self-medication associated menace, however, this quick money making syndrome had made them instrumental to sustain antibiotics misuse in the societies. To curb this practice, efforts should be intensified toward the antibiotics seller.

Despite the fact, the antibiotics wrong users have many sources of information regarding the application of antibiotics of interest; they may not be able to produce theirs without going to seller irrespective of who they are. Therefore, antibiotics purchasing sources should be used to discourage the people from practicing antibiotics self-medication.

Conflict of interest

The author declared that there is no conflict of interest

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