Substance abuse prevention: role of the pharmacists

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Abstract

Background/Methodology: Substance abuse is a major societal problem requiring urgent attention by the government and healthcare providers. The objective of this paper was to prepare and provide resources to pharmacists and other healthcare professionals, enabling them to carry out a critical analysis on drug abuse prevention, acquiring knowledge in several areas that effectively contribute to their personal development in this professional field.

Results: Pharmacists play a crucial role in the reduction and prevention of substance abuse, since they are able to advise patient about illicit drugs, psychotropic medicines and alcohol abuse.

Conclusion: There is an urgent need to encourage pharmacists and other healthcare providers to specialise in this discipline and join the campaign towards reducing the prevalence of the drug addiction scourge in the country.

Keywords: Substance abuse; drug abuse prevention; pharmacists' role

Introduction

Substance abuse is a major public health problem all over the world.[1] The use and abuse of drugs by adolescents have become one of the most disturbing health related phenomena in Nigeria and other parts of the world.[2] The problem is prevalent among adolescents who in most cases are ignorant about the dangers inherent in drug abuse. Many of them engage in drug abuse out of frustration, poverty, lack of parental supervision, peer influence and pleasure seeking.

The consequences of substance abuse include low attention span, poor memory and unclear thought process amongst others. As a result, students who use drugs may do poorly in school or even drop out. They end up becoming adults who might have trouble with their work performance and maintaining employment. In addition, social relationships regardless of age could suffer. Some of the youths are homeless, wanderers, thugs, rapist, armed robbers and so on because they are addicts. A lot of lives and properties have been lost in accident and violence because of

substance abuse. These youths were supposed to be useful to themselves/others and be the hope of their families and the society at large but have lived unproductive lives as a result of drug addiction.[3] Collectively, substance abuse contributes significantly to morbidity and mortality in our population and to the increasing cost of health care. However, with effective counselling programme, the problems can be tackled.[4]

Pharmacists have unique advantage in the prevention campaigns against drugs of abuse. This is because they have comprehensive knowledge, about the safe and effective use of medications and about the adverse effects of their inappropriate use. By providing clear information on how to take a medication appropriately and describing possible side effects or drug interactions, pharmacists can play a key role in preventing prescription drug abuse. Pharmacists can also help prevent prescription fraud or diversion by looking for false or altered prescription forms. Pharmacists should be actively involved in reducing the negative effects that substance abuse has on society, health systems and the pharmacy profession. The following will be reviewing key concepts that should guide the roles of pharmacists, other health workers and interested members of the society in addiction prevention campaigns.

Definitions and concepts

Substance-related disorder refers to the use of psychoactive substances, including alcohol, cigarette and illicit drugs that produce harmful or hazardous intense activation of the brain reward system that leads to the negligence of normal activities.[5] This description by DSM-5 identified two classes of substance-related disorders as substance use disorders and substance-induced disorders. While the former is the primary mental health consequences of using drugs of abuse, the latter is the secondary aftermath from the use of drugs of abuse.

Psychoactive substance use disorders are the cluster of behavioural, cognitive, and physiological phenomena that develop from the substance repeated use despite significant drug-related problems typically occurring within a 12-month period. This definition applies to all classes of psychoactive substances irrespective of their legal status.

The core symptoms in the identification of substance use disorder are grouped into: impaired control (e.g. craving), social impairment (e.g. interpersonal conflicts), risky use (i.e. inability to abstain despite physical/psychological difficulties experienced/encountered from drug use) and pharmacological benchmarks (i.e. tolerance and withdrawals symptoms). In addition to these features are the twin symptoms of the second leg of substance related disorder i.e.

substance-induced disorders and they include intoxication and substance-induced other mental disorders.[5]

Mechanism and pathophysiological pathway

In order to understand the long-term changes induced by drugs of abuse, their initial molecular and cellular targets must be identified. The mesolimbic dopamine system is the prime target of addictive drugs. This system originates in the ventral tegmental area (VTA), a tiny structure at the tip of the brainstem, which projects to the nucleus accumbens, the amygdala, and the prefrontal cortex. Most projection neurons of the VTA are dopamine-producing neurons. When the dopamine neurons of the VTA begin to fire in bursts, large quantities of dopamine are released in the nucleus accumbens and the prefrontal cortex.

As a general rule, all addictive drugs activate the mesolimbic dopamine system and their effect here is longer lasting than detoxification period. In other words, the central problem is that even after successful withdrawal and prolonged drug-free periods, addicted individuals are at high risk of relapsing. Relapse is typically triggered by one of the following three conditions: re-exposure to the drug of abuse, stress, or a context that recalls prior drug use.[6]

Classes of substances of abuse

In Nigeria, the most common types of abused drugs are categorized as follows:-

1. Stimulants: These are substances that directly act and stimulate the central nervous system and enhance brain activity; they cause an increase in alertness, attention, and energy that are accompanied by increases in blood pressure, heart rate, and respiration. Stimulants include caffeine, dextro-amphetamine and methylphenidate. Users at the initial stage experience pleasant effects such as energy increase.

2. Hallucinogens: These are drugs that alter the sensory processing unit in the brain. Thus, producing distorted perception, feeling of anxiety and euphoria, sadness and inner joy, they normally come from marijuana, lysergic acid diethylamide (LSD) etc.

3. Narcotics: These drugs relieve pains, induce sleep and they are addictive. They are found in heroin, pentazocine, codeine, opium etc.

4. Sedatives/Tranquilizers: These drugs are among the most widely used and abused. This is largely due to the belief that they relieve stress and anxiety, and some of them induce sleep, ease tension, cause relaxation or help users to forget their problems. They include diazepam, rohypnol, alcohol, gamma hydroxybutyrate (GHB), promethazine, chloroform, barbiturates etc

5. Miscellaneous: These are a group of volatile solvents or inhalants that provide euphoria, emotional dis-inhibition and perpetual distortion of thought to the user. The main sources are glues, spot removers, tube repair, perfumes, chemicals etc.[7]

Prevalence

Epidemiologic studies are useful in characterizing the profile of a given population. The knowledge of this aspect, for the pharmacist professional, helps in the decision taking regarding the development of a prevention program in their community. The most commonly use licit and illicit psychoactive substances in Nigeria are respectively alcohol and cannabis.[8,9]

This pattern was also found in a study of 2888 high school students in the most populous city in Nigeria, Lagos metropolis where the most commonly used substance were alcohol (44%), cigarettes (21%), cannabis (11%), and stimulants (2%).[10] The first two most prevalent substance of abuse in this study were the so called “gateway drugs”.

A very recent educational intervention study in selected Lagos secondary schools revealed the most commonly abused substance to be Indian hemp (i.e. cannabis), (56.4%), followed by alcohol (47%) and cigarette (31.4%). Most of these students were between the ages of 14-17 years.[11]

Factors affecting substance abuse

The factors contributing to substance abuse especially among the youths have been identified and promulgated by the electronic and print media worldwide. These factors have been further authenticated by research. They include: Dysfunctional families due to unstable and low income, poor marital relationship, conflicts, divorce, separation, single parenthood, long working hours of family members, limited family time, ineffective communication, easy access to drugs within immediate neighbourhood, failure of school achievement, feeling boredom, undesirable peer influence, intergenerational addiction and negative peers.[12]

Role of the pharmacist

The pharmacist role in reducing and preventing substance abuse could lie in the pharmacist-patient interaction during psychotropic medication dispensation. Pharmacists must be prepared to cope with situations in which the presence of dependent individuals occurs, they should update themselves with relevant literatures that provide guidance to professionals on critical analyses about drug abuse prevention and several areas that can effectively contribute to their personal development in this field of activity.

Preventive role of pharmacists during treatment

Pharmacist professional actions to combat psychoactive substance use disorders are related to pharmaceutical care provided to patients by making use of medications (e.g. methadone, bupropion, naltrexone, flumazenil) for treatment. Medication therapy makes use of examples of medications mentioned above, in different phases of the disease, aiming to help the patient to stop drug consumption, to remain in treatment and to prevent recurrence. It is important to emphasize that these medications, when used in isolation, might be unable to treat substance use disorder and therefore the need for follow-up and/or nonpharmacological intervention. In other words, the pharmacist is a professional possessing a privileged position to give information on the correct form of administration of psychotropic agents, applying follow-up protocols for patients and providing a complete drug history to guide other professionals of managing multidisciplinary health team.[13] Hence, the pharmacist must provide knowledge on drugs' mechanisms of action, toxicokinetics, pharmacological interaction and adverse reactions. They could also act by clarifying the information regarding the processes of detoxification of patients for a particular drug, or during abstinence crises and drug-drug interactions in the event of overdose in patients.[14]

Another role of the pharmacist includes providing orientation to patients (psycho-pharmaceutical care) concerning the possibility of abusing the medications they are using for treatment. That is to say asking about the use of illegal drugs, medication currently on and screening for them is a daunting task. Thus the pharmacist must first establish a good therapeutic relationship with the patient by proceeding with sensitivity, respect, and confidentiality. On the other end patients' health literacy should also include them understanding that the questions asked might be routine but obtaining honest answers are critical to the safe and effective use of their prescription medication. And because patients rarely succeed on their first attempt at change regarding substance abuse, pharmacists should anticipate that counselling given once needs to be reinforced with reminders over time.[15]

Community pharmacists can play an active role in preventing substance abuse by making appropriate recommendations to the prescriber when appropriate. They must recognise and prevent prescription fraud by carefully reviewing the prescription. Prescription fraud include altering physician's signature, prescription looking too good, prescription appears to be photocopied, directions written in full with no

abbreviations, prescription does not comply with the acceptable standard abbreviations, and prescription written in different colour inks or written in different handwriting. Hence, if there is anything that looks suspicious, the pharmacists should call the prescriber for verification. Countering prescription fraud is achievable through following common sense, sound professional practice, and using proper dispensing procedures and controls.[16]

Toxicological analysis could be considered yet another area of action for pharmacists wishing to work in this field. The duties of the pharmacist include helping in the diagnosis and monitoring of dependent patients' treatment. Pharmacists can screen patients for substance abuse and addiction. Routine urine drug screening provides additional accountability and monitoring. Drug screening should include assays for alcohol, benzodiazepines, cocaine, opiates, amphetamines, marijuana, and barbiturates.[17]

Prevention strategies

According to the World Health Organization (WHO),[18] interventions related to prevention of drugs use are characterized into three levels: primary, secondary and tertiary. In primary prevention, there is a conjunction of actions intended to prevent drug use, aimed at lowering the chance of further individuals starting to use drugs. In secondary prevention, there is a conjunction of actions intended to prevent the occurrence of complications in occasional users. These measures seek to identify the users and promote changes in their behaviour. In tertiary prevention, the focus is on actions that seek to prevent additional loss and/or to reintegrate individuals presenting with more serious problems into society.[18]

Pharmacists can function effectively under these three models in the prevention of drug abuse. When trained, the pharmacists as healthcare professionals, by means of direct contact with the patient can assist in the diagnosis of drug-related disorder through making use of interview instruments like Drug Abuse Screening Test.[19]

Other preventive activities include creating prevention programs in their neighbourhood, work place, or community. Examples of these programs might be pharmacists participating in substance abuse education and prevention programs in neighbourhood primary and secondary schools, colleges, mosques, churches, and civic organizations. Such participation should stressed the potential adverse health consequences of the misuse of legal and use of illegal drugs.[20]

Conclusion

The pharmacist professional has to be prepared to deal with different psychosocial issues of drug abuse and dependence, and to exercise their professional role as a health agent.

This is a daunting challenge to the pharmacists who must be vigilant in other to be great preventive agent against drug abuse. Overall, pharmacists must play active role in reducing the negative effects that substance abuse has on society, health systems and the pharmacy profession. To this end, investigations into the development of this human resource should be carried out and specialization courses for the different types of professional action in this area should be stimulated, aiming at future placement of more pharmacist professionals into multidisciplinary health teams, who can intervene in the health-disease process of dependent individuals and contribute to the development of prevention programs in Nigeria. There is an urgent need to encourage Nigerian pharmacists to specialize in this field to enable them contribute more effectively in nipping the scourge of substance abuse in the bud.

References

3. UNODC, (2005) United Nations Office on Drugs and Crime, World Drug report 2005. Available at https://www.unodc.org/pdf/WDR_2005/volume_1_web.pdf
4. NDLEA, (1997) Drug abuse among Nigerian Adolescents. Strategies for counselling. The journal of international social research. Volume 5 issue 20.2012 Availablehttps://pdfs.semanticscholar.org/cd39/620b178be951c5518557ca172a231e3d113c.pdf
5. Odo S.C. (2009), Youths and Drug Abuse in Nigeria: Challenge For the Nigeria Churches. Available at http://www.unn.edu.ng:8080/
6. Abdullahi, Z. (2009). “Drug abuse among youths: Strategies for school counseling”, The Nigerian Society of Educational Psychologists, Jos: Nigeria. pp. 131-136. Accessed (30/04/16).Available atwww.sosyalarastirmalar.com/cilt5/cilt5say120_pdf/6_egitim/faroe_oluremi.pdf
7. American Psychiatric Association. Diagnostic and statistical manual of mental disorders, Fifth Edition (DSM-5™). Arlington, VA, American Psychiatric Association, 2013.
8. Bertram G. Katzung, (2007) Basic and Clinical Pharmacology, 10th edition copyright by the McGraw-Hill Companies, Inc. All rights reserved
9. Anumonye A, (1990) Drug Use Among Young People In Lagos, Nigeria, Bulletin on Narcotics, 32(1990), 39-45.
10. Adamson T. A., Ogunlesi A. O., Morakinyo O., Akinhanmi A. O., Onifada P. O., Erinosho O., Adewuyi A. A., Fasiku D. A., Adebowale T. O., Ogunwale A., Somoye E. B., and Olaniyan O. Descriptive national survey of substance use in Nigeria. Addiction Research and Thearpy, 2015, 6(3):1-10.
11. Gureje O, Uwakwe R, Udofia, O. Mental disorders among adult Nigerians. A report from the National Survey of Mental Health and Wellbeing. The Epidemiology and Service Research Unit, Ibadan, Nigeria; 2002. p. 12.
12. Oshodi O.Y., Aina O.F. and Onajole A.T. Substance use among secondary school students in an urban setting in Nigeria: prevalence and associated factors. African Journal of Psychiatry, 2010; 13(1):52–57.
13. Oreagba IA, Agbabiaka H, Adesina H, Labinjo A. Educational intervention to promote the awareness of substance abuse amongst public secondary school students in Surulere Local Government Area of Lagos State, 2016 (in preparation).
14. National Institute on Drug Abuse. Preventing drug use among children and adolescents: A research-based guide for parents, educators, and community leader, 2nd Edition. NIH Publications, 2003.
15. Fleming, G. F; Mcelnay, J. C.; Hughes, C. M.; Sheridan, J.; Strang, J. The role of the community pharmacist in drug abuse: a comparison of service provision between Northern Ireland and England. Wales. Pharm. World Sci., v.23, n.1, p.13-16, 2001
16. National Institute on Drug Abuse. NIH. Publication n° 07-5605, printed in apr. 2007. Drugs, Brains, and Behavior: The Science of Addiction. Available at: <www.drugabuse.gov>

17. ASHP Statement on the Pharmacist's Role in Substance Abuse Prevention, Education, and Assistance. 2003: 60(19), pp 1995-1998
18. Anthony C Tommasello. Substance abuse and pharmacy practice: what the community pharmacist needs to know about drug abuse and dependence. Harm Reduction Journal 2004, 1:3 doi:10.1186/1477-7517-1-3
19. Bass, R.; Vamvakas, S. The toxicology expert: what is required? Toxicol. Lett., v.112-113, p.383-389, 2000.
20. WHO, (2002) The World health report 2002 Reducing risks, Promoting Healthy life. www.who.ht/whr/2002/en/.
21. https://www.drugabuse.gov/sites/default/files/dast-10.pdf
22. Epstein JF. Substance dependence, abuse and treatment: findings from the 2000 National Household Survey on Drug Abuse. Rockville, MD: U.S. Department of Health and Human Services, 2002; DHHS publication no. SMA 02-3642 (Series A-16)

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