

INCIDENCE OF PSYCHOSOCIAL HEALTH DISTURBANCES AMONG NONMEDICAL TRAMADOL USING EMERGING ADULTS IN OWERRI, IMO STATE

Ann Ukachi Madukwe

Department of Psychology, Faculty of Social Sciences, Imo State University, Owerri, Nigeria

anna.madukwe@imsu.edu.ng, annemichael2002@yahoo.com

ABSTRACT

This study screened twenty-eight (18 male & 10 female) emerging adults aged 16 -27 years selected from a normal population, who had used tramadol for at least one month. Respondents were drawn through the snowball sampling method. The Tramadol Questerview and Drug Use Screening Inventory-Revised were used to evaluate respondents' non-medical use of tramadol and the severity of psychosocial health disturbances, respectively. The study adopted a descriptive design and descriptive statistics were used to analyse data. Findings showed that respondents had significant overall problem density ranging from 24.48 at the lowest to 67.34 at the highest. Tramadol use was associated with significant absolute and overall problem densities in the six domains of psychosocial health screened. Also, 80.8% of the respondents used 200mg to 600mg day daily, and dosage per day was significantly associated with the health status domain. The study concluded that long-term nonmedical misuse of tramadol has a negative impact on the psychosocial health of young persons. It is recommended that tramadol should remain scheduled as a controlled drug in Nigeria; and be prescribed in rare cases and for very short therapy periods for older persons.

Keywords: Drug Use, Emerging Adults, Psychosocial Health Disturbances, Screening, Snowball, Tramadol

INTRODUCTION

Tramadol hydrochloride, sold under the brand name Ultram is one of the few pharmaceutical prescription opioid analgesics available for the treatment of pain in Nigeria. It has been described as an atypical analgesic that also inhibits the reuptake of serotonin and norepinephrine (Roussin et al., 2022). Others are morphine, fentanyl, oxycodone and pethidine, but due to the potential for abuse, these drugs are mostly difficult to find and only available in major cities like Lagos and Abuja. Owing to the challenge of not having many opioid analgesics readily available for medical use in the nation, the introduction of tramadol in the medical treatment of pain was mostly welcome. Tramadol was initially considered a harmless medication; however, it quickly became proliferated in the open market due to the activities of unregulated medicine shops like unlicensed chemists and patent stores, which led to non-medical tramadol use, overuse, misuse, overdose and consequent death (Madukwe & Klein, 2020; Obot, 2016; Udechukwu & Samuel, 2018). Non-medical use is conceptualised here as the use of tramadol without prescription and for purposes other than pain management. While other regions (like the United Kingdom, Germany, Italy and the United States) were troubled with the nonmedical use of opioids like morphine, methadone, and fentanyl which are related to problems like opioid use disorder diagnoses, overdose and death, tramadol was considered a safe alternative because of its low abuse potential in these regions (Iwanicki et al., 2020;

Layne et al., 2020). But Madukwe and Klein (2020) confirmed the non-medical use of tramadol among emerging adults in Owerri. Obot (2016) explained that increased use of tramadol by young people could lead to psychological and physical dependence, causing users to experience unpleasant withdrawal symptoms when they try to stop using. The potential for repeated and increasing use of tramadol is explained by its capacity for reinforcement. Epstein, Preston and Jasinski (2010) stated that a drug is reinforcing if the frequency of a designated behavioural response is increased when drug delivery is contingent on the performance of that response in comparison to the frequency of responses in the absence of the drug. Several reports have linked non-medical use of tramadol to seeming benefits such as better sexual performance (Ahmadi, 2015; Nna et al., 2014), increased work output, increased energy, reduced feelings of sadness (Madukwe & Klein, 2020) and a decrease of these experiences when attempt to stop tramadol use is evident. Misuse of pharmaceutical opioids, including tramadol, has also been linked to harmful outcomes such as the likelihood of developing dependence or drug use disorder, experiences of social consequences like family conflict, loss of work, legal issues, missing school or work, poor performance, relationship problems, and trouble with law enforcement (UNODC, 2018). Ahmadi (2015) presented a client who developed tramadol dependency, tramadol-induced convulsion and depression following the abusive use of tramadol at 2000mg per day in Southern Iran. Olsson *et al.* (2017) conducted a hair screening analysis on 59 treatment-seeking adolescents and young adults in Malmo, Sweden, for nonmedical prescription opioid use. The researchers reported tramadol as the most used opioid with a high rate of concurrent psychiatric problems. Past studies have reported that non-medical tramadol use is associated with major public health problems in many countries, particularly in Africa and the Middle East (Roussin et al., 2022); tramadol crisis-affected countries in the Middle East, North and West Africa (Layne et al., 2021). Therefore, the occurrence of many psychological, social, economic and legal problems related to nonmedical tramadol use makes its availability in Nigeria problematic. Psychosocial health disturbances refer to various cognitive, behavioural, emotional, social and physical health problems encountered by individuals after ingesting significantly higher doses of tramadol.

In a 2020 study conducted across Europe by Layne et al. (2020), the authors investigated acute toxicity related to misuse (nonmedical use) of tramadol: experience of the European Drug Emergencies Network Plus. However, their findings showed that nonmedical use of tramadol remained uncommon in Europe, with only 105 (0.4%) of 24,957 emergency cases presenting with tramadol misuse, while heroin remained the most abused opioid. Meanwhile, a different study originating from France reported tramadol as the primary opioid implicated in analgesic-related deaths at 45% in 2018. The authors described two profiles of high-risk tramadol users as 1) patients (mostly women with a mean age of 44 years) treated for pain using tramadol and 2) individuals involved in nonmedical use of tramadol for its psychoactive effects (Roussin et al., 2022). According to Boun, Omonaiye, and Yaya (2024), the disturbances associated with nonmedical use (NMU) of tramadol occur when the substance is consistently consumed in doses that are higher than the therapeutic range, and this experience occurs commonly among nonmedical tramadol users. In their systematic scoping review on the prevalence and health consequences of nonmedical use of tramadol in Africa, Boun, Omonaiye, and Yaya (2024) reported a prevalence rate ranging from 1.9% to 77.04% for tramadol NMU among young adults, 74.2% among undergraduates, and 83.3% among high school students. They also listed intoxication, dependence and withdrawal syndromes as other health consequences of tramadol misuse.

Based on the current literature retrieved and reviewed, there has been no published local study that aimed to screen for psychosocial health disturbances among tramadol users, whether as

dependence, withdrawal, craving or misuse symptoms. The present study is an attempt to bridge the present gap in knowledge by evaluating the possible incidence of psychosocial health disturbances among young non-medical users of tramadol.

Statement of the Problem

The proliferation of falsified tramadol and tramadol branded products, diversion of tramadol by unlicensed chemists and patent stores in the state, alongside the reinforcing experiences and benefits like prolonged intercourse, energy enhancement, reduced feelings of sadness, etc., (Nna et al., 2014; Ibrahim et al., 2017) narrated by non-medical long-term users of tramadol have all contributed to its overuse among young people especially emerging adults. While many studies have been carried out on the prevalence of non-medical tramadol use and factors surrounding non-medical tramadol use have been reported, no published study that screened tramadol users for psychosocial health disturbances was found, and this study is an attempt to fill this gap in scientific literature.

Purpose of the Study

The main objective of the study is to verify the incidence of psychosocial health disturbances among emerging adults involved in non-medical tramadol use.

Research Questions

1. Would non-medical use of tramadol be associated with the incidence of psychosocial health disturbances?
2. Would the daily dosage of tramadol influence the psychosocial health of users?

Hypothesis

The daily dosage of tramadol used would not significantly influence the psychosocial health of users.

METHOD

Participants

A total of 28 emerging adults (18 males and 10 females) were screened in this study. Respondents were literate, 16 to 25-year-old young persons selected from Owerri Zone in Imo State using a respondent-driven sampling technique. This sampling technique allowed respondents to identify other users, thereby limiting the social desirability effect while increasing access to the target population. However, each respondent was permitted to make three referrals; this was done to reduce redundant data while increasing external validity. Only individuals who have used tramadol for more than a period of one month were included, while one-time users and those who used tramadol following medical prescriptions were excluded.

Instruments

The instruments used for data collection are Questerview for non-medical users of tramadol and drug use screening inventory-revised (DUSI-R). The instrument for the non-medical use of tramadol is a 10-page questerview used to assess different concerns related to tramadol use.

It was developed by Klein et al. (2018) and used in an international study that comprised various countries in West and Southern Africa including Nigeria. It had nine subsections and 61 items, 6 of which are open-ended questions. The response format for the questionnaire part of the instrument ranged from nominal to 6-point Likert format depending on the type of question. The open-ended questions assessed respondents' perception of the effect of tramadol and how it affected their physical work performance, pain perception, sleep, eating and sexual behaviour and their opinion of tramadol in general. Some sample questions on the questionnaire are: If tramadol were banned, would you change or stop your usage? Did you receive a prescription for tramadol? Why did you continue taking tramadol after you got better? Did your use of tramadol affect your ability to do your work? How would you describe the effect of tramadol? Did you ever have problems with tramadol, if yes, what happened? However, only data from the close-ended questions were used in this study.

The second instrument, DUSI-R, is an extensively researched inventory originally developed by Tarter (1991) to assess the severity of psychosocial health disturbances and maladjustments in drug users. It is a 159-item inventory with 10 domains covering substance use, behaviour patterns, health status, psychiatric disorder, social competence, family system, school performance, work adjustment, peer relationship, and leisure/recreation. It also has a lie scale; the last item in each domain is a lie item used to calculate the lie score. However, only six domains (behaviour pattern, health status, psychiatric disorder, social competence, family system and school performance) were used in this study. These domains were selected because of their suitability to the study population and the purpose of this study. DUSI-R uses a nominal response format of yes or no. The scale gives two types of scores: absolute and overall problem densities. The absolute problem density profile is generated by counting all the 'yes' marked in a domain, divided by the total number of items in the domain excluding the lie item and multiplied by 100. Overall, the problem density index is calculated by adding up all the 'yes' marked across all domains, divided by the total number of items excluding the lie items and multiplied by 100. The relative problem density and lie score can also be generated but were not used in this study. A score on the overall problem density index exceeding 15% is considered significant. The scores of DUSI-R are used to identify the current status and areas in need of prevention and to evaluate the impact of intervention.

Procedure

Part of the data used in this study were generated from a regional study approved and funded by a pharmaceutical company, Grünenthal, to investigate medical and non-medical tramadol use in West Africa. The study was conducted in Lagos and Imo State of Nigeria. The data on psychosocial health screening was collected concurrently. Respondents in this study were drawn from Imo State using the respondent-driven snowball sampling method. This sampling technique was chosen to ensure that only individuals involved in non-medical use of tramadol were selected. It uses a chain of networks of users that allows the researcher to penetrate this basically hidden population. Respondents were drawn from rural and semi-urban locations purposively chosen because of the notoriety of non-medical tramadol use there. The locations were Ulakwo, the World Bank area, Mbonu Ojike and the University Hostels at Bishop's Court and Back Gate. To carry out the study, the initial contact persons in each location were debriefed, assured of confidentiality, anonymity and the fact that choosing to participate in the study would bring them no harm. They were adequately informed that the information they gave would be stored in a password-protected computer and used for research purposes only. Oral consent was sought and obtained from each respondent before proceeding with data collection. Thirty (30) respondents participated in the study, but only data from twenty-eight

(28) respondents were used for data analysis. Information from the other two was incomplete and, as such, was excluded. The small sample size used in this study was occasioned by the socio-legal environment surrounding the non-medical use of tramadol in the state at the time of the study, which made many refuse to participate. Again, the large number of items on the measures made the data collection process lengthy, and the duration of the study was limited to two months for data collection. On completion of the self-reported questionnaires, respondents were given monetary incentives as appreciation for their time. The respondents were also given the same monetary incentive for recruiting other non-medical users. However, no respondent was allowed to recruit more than three persons.

Design and Statistics

This is a descriptive study with a cross-sectional survey design. Descriptive statistics, frequency, and percentage were used to describe the respondent's sociodemographic characteristics, while chi-square for association was used to test the hypothesis.

RESULT

Table I: Frequency Distribution of the Sociodemographic Characteristics (N=28)

| Variable | Freq. | % |
|---|--------------|----------|
| Sex | | |
| Female | 10 | 35.71 |
| Male | 18 | 64.29 |
| Age | | |
| 16-25 years | 23 | 82.14 |
| 26+ | 5 | 17.86 |
| Education Level | | |
| Secondary | 8 | 28.57 |
| Tertiary | 20 | 71.43 |
| Self-reported Tramadol Use History | | |
| Diagnosed by | | |
| Non-healthcare professional or self | 20 | 71.43 |
| Another healthcare professional | 3 | 10.71 |
| Medical doctor | 5 | 17.86 |
| Initial Use Prescribed | | |
| No | 22 | 78.57 |
| Yes | 6 | 21.43 |
| Continued use | | |
| No | 12 | 42.86 |
| Yes | 16 | 57.14 |
| Average Daily Dose | | |
| < 200mg | 2 | 7.14 |
| =>200mg | 26 | 92.86 |
| Duration of Use | | |
| >one month < one year | 14 | 50.00 |
| = > One year | 14 | 50.00 |

The above findings show that non-medical and long-term tramadol users in Owerri were mostly undergraduates (71.43%), males (64.29%) and within the age range of 16 to 25 years (82.14%). Furthermore, most users (71.43%) reported that the condition for which they first used tramadol was either self-diagnosed or diagnosed by a non-healthcare professional, in many cases, peers. As such, only 21.43% reported that initial use was based on prescription. More than half (57.14%) of the respondents reported continued use after the condition for initial use was resolved. Report on average daily dose showed that almost all respondents (92.86%) ingested more than 200mg of tramadol per day, while the duration of use was equally reported to be above one month.

TABLE II: Psychosocial Health Domains with Absolute and Overall Problem Density of Tramadol Users (N=28)

| Self-reported Psychosocial health Problem Severity | Average Absolute Problem density (%) |
|--|--------------------------------------|
| Behaviour Pattern | 46.61 |
| Social Competence | 44.87 |
| Health Status | 41.61 |
| Psychiatric Disorder | 39.82 |
| Family System | 36.57 |
| School Performance | 29.64 |
| Overall Problem Density | |
| Lowest | 24.48 |
| Highest | 67.34 |
| Average | 38.73 |

**Psychosocial health domains are ranked in order of problem severity across the domains.*

The result in Table two above shows that long-term non-medical use of tramadol is strongly associated with disturbances in the six psychosocial health domains screened. The average absolute problem density of each domain shown above indicates that tramadol users experience the greatest psychosocial health disturbances in their behaviour pattern (46.61%) and the least disturbance in school performance (29.14%). Again, the average overall problem density of (38.73%) suggests that, in general, these respondents exhibit severe psychosocial health disturbances.

TABLE III: Results on the Association of Daily Dose and the Domains of Psychosocial Health Disturbances

| Domains | Daily Dose | |
|-------------------------|------------|---------------------|
| | χ^2 | p-value |
| Behaviour Pattern | 109.60 | 0.674 ^{NS} |
| Health Status | 115.99 | 0.040* |
| Psychiatric Disorder | 121.95 | 0.358 ^{NS} |
| Social Competence | 144.81 | 0.442 ^{NS} |
| Family System | 195.72 | 0.231 ^{NS} |
| School Performance | 162.50 | 0.344 ^{NS} |
| Overall Problem Density | 242.67 | 0.335 ^{NS} |

*NS= not significant, * = Significant*

According to the Chi-Square result in Table III above ($\chi^2(91) = 115.99, p < .05$), a significant association was found between the quantity of tramadol taken per day and the health status of the user. No significant association was found across dosage, and other domains of psychosocial health disturbances were screened.

DISCUSSION

In this study, the incidence of psychosocial health disturbances among long-term nonmedical tramadol users was examined; the association of daily dosage and the incidence of these problems was also evaluated. The results obtained support previous findings that reported that tramadol produces dependency symptoms (Ahmadi, 2015) and that tramadol abusers show a high rate of concurrent psychiatric problems (Olsson et al., 2017). This evidence that tramadol users exhibit psychosocial health disturbances is not surprising, as opioids are known to produce negative dependency, withdrawal and craving symptoms. Most respondents were secondary school leavers from poor homes and did menial jobs to earn a living, which encouraged the misuse of tramadol. Another reason for misuse is the cost; many of the respondents explained that tramadol was cheap compared to other drugs, including cannabis and alcohol. So many received their first tramadol dose as a gift from their peers or friends.

The result showed an increased incidence of severe psychosocial health problems in all the areas assessed. Respondents are found to have behaviour pattern challenges; this concerns problems that could arise in the course of social interaction, issues of impulsivity, anger, isolation and rebellious acts towards peers, family or the community. Disturbances in social competence were found to be the second most common problem among users. Like behaviour pattern problems, this disturbance also manifests in the course of social interactions as poor social and refusal skills. Users gradually lose the capacity for appropriate response or communication skills. Disturbances in health status are the third most occurring problem and it relates to the frequency of accidents, injuries and illnesses each complained about. Though most were males, they complained of frequent stomach aches, restlessness, dizziness, etc., especially when the effect of the drug is reducing. Psychiatric disorder, which relates to the incidence of problems like anxiety, depression, and anti-social and psychotic symptoms, was ranked fourth. This finding shows that psychiatric problems are minimal when compared to the first three kinds of disturbances. However, it is usually when this category of problem becomes evident that people (either the users or their families) begin to seek professional help. In other words, the search for professional help usually starts much later into the problem of substance use, and this makes their recovery quite difficult. Family system and school performance disturbances were the least reported by the respondents. This could be due to the age bracket studied. The little money they provide to aid family upkeep will most likely keep them in their family members' good books and force them to intentionally or unintentionally neglect the drug use habit. On the other hand, most were secondary school leavers or university undergraduates at the time of the study; as such, their report of academic performance and school adjustment might be skewed. Moreover, the scale assessed previous years' experience, which could be distorted. Generally, respondents' overall problem density was very high. This finding shows that tramadol misuse is a major source of psychosocial health problems for emerging adults.

The continued misuse of tramadol in this population could reflect the poor economic status of the users. Many of the respondents reported that at above 200mg per dose, tramadol served to enhance their physical work performance (Madukwe & Klein, 2020), thereby enabling them to earn more money by working for longer hours. Hence, the higher the dosage consumed, the more work output and consequent wages. This network of users was not likely to quit usage.

Instead, more young people who would like to make more money for themselves would join them in this nonmedical use of tramadol. As such, nonmedical misuse of tramadol in this population would most likely continue, except their economic situation improves. However, continued use takes its toll on their health.

A significant association was also found between daily dosage and respondents' health status. This result agrees with most reports about tramadol dependence, withdrawal, or craving effects like restlessness, deep sleeping, depression, and headaches (Ahmadi, 2015). However, there is a lack of studies in this area. This finding relates to complaints like weight loss, stomach ache, and fever that most respondents complained about.

Limitation of the Study

Though only a few of the respondents reported concomitant use of cannabis and alcohol, the association between tramadol use and these psychosocial health problems might also be because of the drugs. However, this was not assessed in the present study.

Significance of Findings

Practically, non-medical and long-term Tramadol use is associated with severe maladjustments in the psychosocial health of emerging adults. The use of a high daily dosage of at least 200mg/day is associated with severe health problems.

Unlike most drugs of abuse, misuse and abuse of tramadol has socioeconomic implications. It is common among the poor, linked to the economic status of nonmedical users, and this poses a high risk to public health in the long run.

This finding and other reports on tramadol misuse and abuse across Africa point to the need for policies aimed at more stringent control of tramadol and other prescription opioids within the continent.

There is a noticeable lack of published scientific studies verifying the impact of tramadol on users' psychosocial health. Therefore, there is a need to encourage more social and medical research that addresses users' health.

Recommendations

Research on tramadol use in Africa should focus more on rural and young users, consequences of long-term and high-dosage use, and the economic value of tramadol use to users to inform further policy on tramadol distribution and use

More research is needed to provide further scientific clarification on the impact of tramadol on the psychosocial health of users, as this could help with the argument on international scheduling of tramadol.

Controlling agencies, including NAFDAC, NDLEA, and pharmacy council, should direct more efforts at tackling drug diversion and distribution problems by pharmacies and patent stores spread out in the rural areas.

There is a need to reduce the prescription of tramadol. It should only be prescribed for brief treatment, in small doses and preferably for older adults.

Policies that would address the provision of financial support in the form of grants and scholarships for emerging adults are important. At the same time, the mental health bill is being considered; provision must be made to make evidence-based mental health services readily available for young persons who suffer from substance use-related problems.

Psychologists, substance use professionals, psychiatrists and other mental health service providers should assess the psychosocial health status of long-term tramadol users to have a robust treatment plan.

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