

Research Article

Descriptive Cross Sectional Study of Tramadol Abuse Among Yelyelo Drivers in the Tamale Metropolis

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Abstract

Background: Tramadol use has become a major public health concern in Ghana, particularly among yeloyelo drivers in the Tamale metropolis. This study is set out to discuss the factors that contribute to the ustramadol among tricycle drivers in the Tamale metropolis Northern Region of Ghana. **Methods:** The study employed the quantitive method. The multi-stage sampling technique was used. The simple random sampling techniques wsa used to select 420 respondents from selected tricycle terminals in the Tamale Metropolis. The results were analyzed using the Statistical Package for Social Sciences (SPSS) version 26. **Results:** It was revealed that 2.9% respondants were using tramadol under physician prescription, 97.1% respondents were using tramadol without prescription from a physician which amount to abusing the drug. The study revealed that averagely, the daily milligram (mg) intake of tramadol among tricycle drivers in the Tamale metropolis was 155.5 ± 91.6 mg, with majority of respondents using tramadol by taking in various unapproved strengths/dosages of 500, 250, 200 and 150 dosages (mg) respectively. **Conclusion:** The study found out that the three most compelling reasons why tricycle drivers use tramadol are; to reinvigorate themselves and become physically active (38.1%), to relieve pains (20.0%) and peer pressure (14.5%). The study finally indicates that nausea, road accident, sleepingness and dizziness are possible effects of tramadol use. While, anxiety, depression, aggressiveness, seizures and inattentiveness and the inability to focus are the other side effects of tramadol use.

Keywords

Tramaldol: Painkiller Drug, Abuse: Over Use of Substance, Yeloyelo Drivers: Tricicle Operators, Sampling: Procedure for Selecting Population, Instruments: Tools to Gather Data, Terminal Point: Station of Tricycles

1. Introduction

Tricycle operations (yeloyelo) has become a serious business and has replaced public transportation system in several

countries. However, majority of these operators use substances, which put passengers, and other road users at risk

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[9]. Abiona et al., [1] indicates that psychoactive substance use is a factor in 59.5% of road traffic accidents involving commercial tricycle operators. This is confirmed by a report from the national road safety commission which revealed that the introduction and use of tricycles in the Tamale metropolis has contributed to an increased in traffic accidents in the Northern region [35].

A study conducted in Port-Harcourt, Nigeria, revealed a strong correlation between the use of psychoactive substances and accidents among commercial tricycle drivers [39]. Nelson et al., [36], espoused that psychoactive drugs, particularly tramadol is often recommended to new entrants into commercial tricycle operation as remedies for stress and fatigue.

In the late 1970s, the German pharmaceutical manufacturer, Grünenthal, launched and promoted tramadol under the brand name "Tramal" Sweileh et al., [45], and it has since been released in over 100 countries in different forms including drops, and oral preparations, rectal suppositories, and injectable [22]. Since 1980, it has been approved in several nations and has become the most often prescribed opioid on the planet [34].

Many scholars have defined tramadol in various ways. For example, tramadol is a pain medication that is commonly accepted for the management of pain that ranges from mild to severe, [15]. Grond & Sablotzki [22] asserted that, tramadol is a pain reliever that is both effective in treating labor pain, trauma, and renal or biliary colic, as well as persistent discomfort from infectious or non-infectious causes, especially neurological discomfort. Similarly, tramadol, like many other prescription painkillers, stimulates opioid receptors in the brain and interacts with the serotonin and norepinephrine neurotransmitter systems in a manner similar to that of several opioids Hassamal et al., [25], as cited in [6]. Tramadol, also known as Ultram, is a painkiller that is taken orally to help alleviate mild to severe discomfort [15]. Anzaku P. J. [2], explained that it belongs to the opioid analgesics class of medicines and is usually administered by a doctor to aid with pain management following surgery. Zhang & Liu [50] suggested that, tramadol is an opioid agonist drug with a potency estimated to be 10% compared to that of morphine. Tramadol was formerly thought to be the cheapest and safest medicine with a minimal risk of addiction [43]. However, in many circumstances, persons who require medical treatment and have been prescribed tramadol by a physician begin to use it in excess of the recommended medical dose, resulting in tramadol abuse. This is because, individuals who use tramadol may build a body tolerance to it with time, implying that they now require more tramadol than before, to have the same effects [32]. Tramadol has substantial medicinal advantages when used properly, but when used without medical supervision, in higher doses than recommended, or in conjunction with illegal substances, alcoholic beverages, as well as various prescribed or over-the-counter (OTC) drugs, it can have serious health implications

[7]. According to medical specialists, the abuse of tramadol, acts similarly to heroin and can create mental disorders as well as harm to important organs in the human body [50].

The United Nations Office on Drugs & Crime [48], defined drug abuse as the use of drugs to the point at which they endanger the user's social or medical well-being. Everything that individuals swallow, inhale, or absorb is included in this definition. Medicines, OTC medications, illicit substances, alcohol, cigarettes, flavor enhancers, chemical products, and even food, are all included.

The main reason advanced for tramadol abuse is that, it produces a wonderful surge of exhilaration, which is why most users abuse the medication from time to time [18].

Tramadol is sometimes taken in combination with other drugs, a practice known as polydrug abuse. Bassiony et al., [5] studied 204 high school pupils using drugs and discovered that 18 (8.8%) of them were taking tramadol, as evidenced by a urine test. 15 (83.3%) of those who used tramadol did so solely, while 3 (16.7%) used it in combination with another substance (marijuana, alcohol and tramadol).

Saapiire et al., [41], observed that, users frequently mix tramadol with other medications to heighten the user's euphoria or to self-medicate. Sedatives, alcohol, and other painkillers such as sleeping pills and benzodiazepines medications, and medications for cold are all regularly mixed with tramadol [42]. In Wassa Amenfi, Ghana, a survey of young people by Elliason et al., [14], found that the majority of respondents 62.3% take tramadol with an alcoholic beverage, while another 29% say they mix tramadol with an energy drink and consume. 8.7% indicated they swallow it with water. Interestingly, tramadol together with some other opioids may have pharmacokinetic and pharmacodynamic interactions that increase their toxicity and lead to death [26].

1.1. Study Area

The study area is the Tamale Metropolis. Tamale metropolis is located in the Northern Region of Ghana. It is the capital and the administrative center of the region. It is located between 9.16 ° and 9.34 °-degrees north latitude, and 00.36 ° and 00.57 °-degrees west longitude. It has a vast land area of 731km² and is around 180 meters above sea level. The Savelugu-Nanton District borders the metropolis to the north, the districts of Gonja Central and East to the south, the Yendi municipal on the east, and on the west is the Tolon District. The Tamale Metropolitan Assembly (TMA) is further subdivided into three sub-metros which includes the Tamale north, center, and south sub-metro.

The Tamale metropolitan area has a population of 293,881 people, with 146,979 males and 146,902 females, [19]. In 2012 and 2013, the Metropolis' population was estimated to be 383,205 and 404,609 people, respectively [20].

Despite the fact that native Dagomba make up the bulk of the population, there is ethnic variety. There are other ethnic groupings. There is also religious beliefs, with Islam being

the most prevalent.

1.2. Study Design

This study employed cross-sectional study design among yeloyelo drivers within the Tamale metropolis. Kesmodel [29], explain cross sectional studies as characterized by the gathering of relevant data at a specific moment. This design was regarded optimal because, variables are easy to identify at the same time that the investigator assesses the outcome and exposures in the research respondents [44]. The study employed quantitative approach. The rationale for quantitative approach is enough to capture required data of a phenomenon [13].

1.3. Study Population

The target population for this study consists of yeloyelo drivers, opinion leaders, and people who patronize yeloyelo services. A sample of 420 respondents were randomly selected, comprising 420 yeloyelo drivers. The yeloyelo drivers ages ranged 16 years and older in the Tamale metropolis who operate within the metropolis.

1.4. Sample Size Determination

The sample size for this study was calculated based on the Cochran formula,

$$n = (Z^2 pq)/d^2$$

Where;

n is sample size

Z is the z-score that corresponds with the 95% confidence interval (CI; 1.96)

p is the assumed proportion of tramadol abusing tricycle drivers (50%, = 0.50)

q = 1 – p, where p = (1 – 0.50) = (0.50) and

d is the margin of error, set at 5% (0.05).

Changing the pertinent parameters in the formula resulted in 384 as the required sample size. The sample size was estimated using a 50% prevalence rate with a 5% tolerable error margin.

Nonetheless, sample size of 420 people were employed for the quantitative data, in conjunction to a 9.5% nonresponse rate.

1.5. Sampling Techniques

This study employed the multi-stage sampling using the simple random sampling and convenient sampling techniques. Thus, four tricycle terminals were randomly selected for data collection purposes and questionnaires were administered. This was done by making a list of all the 8 tricycle terminals in the study area on pieces of paper, folded them and put them into a jar and hand pick one at a time. The 8 tricycle

terminals in the study area are; Aboabo terminal, Access Bank terminal, ADB terminal, Consolidated Bank of Ghana (CBG) terminal, Dakpema terminal, Guman terminal, Jisonayili terminal, and the TTH terminal. Four of the folded pieces of papers were randomly drawn after carefully shaking the papers in the jar. They included; ADB terminal, Access Bank terminal, Aboabo Terminal and the Consolidated Bank of Ghana (CGB) Terminal.

1.6. Data Collection Instruments

The quantitative data collection techniques was used for the study. The structured questionnaires were used for the quantitative data. Additionally, observation was equally used to watch the attitude of respondents and demeanor, body language and emotions concurrently during the data collection process. This furnished the researchers with a lead to deducing whether the respondent is being forthright or otherwise through the facial expression and both verbal and nonverbal signals (such as gestures, postures, among others).

1.7. Quality Control

Researchers had requisite training for two days to guarantee successful data collection.

The data instruments were pretested as a pilot study that was conducted at a random tricycle terminal within the Yendi Municipality. Challenges that sprang up during the pilot were noted down and fine-tuned to meet the highest level of effectiveness before the actual field work began. All ethical considerations were strictly adhered to during the pilot study.

Further, data collection tools were subjected to validity and reliability test using scale-reliability tests and a Cronbach alpha of 0.7 or more was considered.

2. Results

2.1. Socio-demographic Characteristics of Participants

From the analysis, the respondents were relatively young. The study respondents were 420 yeloyelo drivers from four tricycle terminals in the Tamale metropolis, with a mean (standard deviation) age of 24.1±5.5 years. Gender, age, educational level, religion, marital status, housing arrangement, and tramadol use for a number of years were utilized to determine socio-demographic characteristics. The oldest participant was 38 years old, while the youngest was 17 years old. The age ranges of 20–29 years accounted for the bulk of the 420 participants, with 234 representing 55.7%, followed by aged 10–19 years, with 100 participants representing 23.8%, and participants aged 30–39 years, with just 86 representing 20.5%. Most of the respondents were males. This is due to

the fact that tricycle driving is a male profession in Tamale. Females were not engaged in tricycle driving.

The educational background of the respondents ranged from no education to tertiary education, 38 respondents (9.0%) had tertiary education, 130 respondents (31.0%) completed secondary education while 172 respondents (41.0%) had basic education, and 80 respondents (20.5%) had no formal education.

In terms of religious affiliations, 401 (95.5%) of the respondents were practicing Islam, 19 (4.5%) of the respondents were Christians whereas no respondents identified with traditional and no religion respectively. Regarding marital status 55 people representing (84.5%) of the respondents were single, 38 (9.0%) were married, and 27 (6.4%) had previously married and divorced. In terms of living arrangements, the majority of respondents 96 (22.9%) live with their friends, 88 (21) live on their own, 79 (18.8%) live with a guardian and biological parents, 76 (18.1%) live together with both parents, and 44 (11%) and 35 (8.3%) live with only their mothers and fathers, respectively.

Regarding tramadol use, 259 (61.7%) of respondents have used it for one to three years, 100 (23.8%) have used it the last four years or more, and 61 (14.1%) have used it for less than one year (Table 5).

Table 1. Demographic Characteristics of Respondents.

Variables/Category	Number (n=420)	Frequency (%)
Gender		
Male	420	100.0
Female	0	0.0
Age		
10 -19 years	100	23.8
20 – 29 years	234	55.7
30 – 39 years	86	20.5
Educational Level		
No education	80	19.0
Basic Level	172	41.0
Secondary level	130	31.0
Tertiary level	38	9.0
Religion		
Muslim	401	95.5
Christian	19	4.5
Traditional Religion	0	0.0
No religion	0	0.0
Marital Status		
Single	355	84.5

Variables/Category	Number (n=420)	Frequency (%)
Married	38	9.0
Divorced	27	6.4
Living Arrangement		
Father	35	8.3
Mother	46	11.0
Both Parents	76	18.1
Guardian	79	18.8
Alone (by self)	88	21.0
Friends	96	22.9
Years of Tramadol Use		
<1 year	61	14.5
1- 3 years	259	61.7
4 years +	100	23.8

Source: Field data (2022).

2.2. Perceived Factors Influencing the Use of Tramadol

Tramadol use was defined in this study as inappropriate tramadol consumption or tramadol taking without a physician's approval. Tramadol dosage limits of 50 mg and 100 mg in tablets and capsules, as well as 50 mg/ml-2 ml in injections, have been approved by the food and drugs authority (FDA) for use in Ghana, therefore any intake over these levels was deemed to be abuse.

The findings revealed that, majority of respondents use tramadol with 160 (38.1%) respondents taking the tramadol for physical activeness, 84 (20.0%) respondents use the drug to relieve pain, 61 (14.5%) take tramadol simply because their friends or peers are taking tramadol, 60 (14.3%) engage in tramadol to gain euphoric effects, 30 (7.1%) take tramadol to enhance their sexual performance and 13 (3.1%) respondents stating reasons other than the aforementioned reasons which includes lose of weight and hair growth.

Table 2. Frequency Table Showing the Reasons for Taking Tramadol.

Variables	Frequency	Percent
Prescription	12	2.9
Physical activeness	160	38.1
To relieve pain	84	20.0
peer pressure	61	14.5

Variables	Frequency	Percent
sexual enhancement	30	7.1
Euphoria	60	14.3
others	13	3.1
Total	420	100

Source field data (2022).

It is worthy noting that, out of the 420 (100.0%) respondents using tramadol, only 12 people representing (2.9%) were identified as using the drug under physician prescription, the rest of the 408 (97.1%) respondents in a way abuse

the drug. The three most compelling reasons why they use tramadol are to reinvigorate themselves and become physically active (38.1%), to relieve pains (20.0%) and peer pressure (14.5).

The bivariate analysis, revealed that none of the independent variables showed a significant relationship with tramadol abuse among the respondents.

Several socioecological factors, including users' level of education ($\chi^2 = 0.181$, $p = 0.981$), an individual's religion ($\chi^2 = 1.041$, $p = 0.308$), individuals' marital status ($\chi^2 = 0.784$, $p = 0.676$), family history of drug use ($\chi^2 = 0.676$, $p = 0.411$), individuals living setting ($\chi^2 = 2.981$, $p = 0.703$) and an individual's age ($\chi^2 = 0.781$, $p = 0.677$) were not associated with tramadol abuse among the study participants (Table 7).

Table 3. Bivariate Analysis of Demographic Factors and Tramadol Abuse.

	FDA RECOMMENDED			
Variables	Approved Dosage	Unapproved Dosage	χ^2	p-Value
Level of Education				
No education	30 (37.0%)	50 (63.0%)	0.181	0.981
Basic Level	65 (37.0%)	107 (62.0%)		
Secondary level	49 (38.0%)	81(62.0%)		
Tertiary level	13(34.0%)	25 (66.0%)		
Religion				
Muslim	152 (38.0%)	249 (62.0%)	1.041	0.308
Christian	5 (26.0%)	14 (74.0%)		
Marital Status				
Single	134 (38.0%)	221 (62.0%)	0.784	0.676
Married	15 (39.0%)	23 (61.0%)		
Divorced	8 (30.0%)	19 (70.0%)		
Family History of drug use				
Yes	43 (34.0%)	82 (66.0%)	0.676	0.411
No	114 (39.0%)	181 (61.0%)		
Living settings				
Father	13 (37.0%)	22 (63.0%)	2.981	0.703
Mother	13 (28.0%)	33 (72.0%)		
Both Parents	32 (42.0%)	44 (58.0%)		
Guardian	29 (37.0%)	50 (63.0%)		
Alone (by self)	31 (35.0%)	57 (65.0%)		
Friends	39 (41.0%)	57 (59.0%)		
Age				

Variables	FDA RECOMMENDED		χ^2	p-Value
	Approved Dosage	Unapproved Dosage		
10 -19 years	41 (41.0%)	59 (59.0%)	0.781	0.677
20 – 29 years	84 (36.0%)	150 (64.0%)		
30 – 39 years	32 (37.0%)	54 (63.0%)		

χ^2 : chi-square,
Source: Field data (2022).

2.3. Knowledge, Attitude and Practice of Tramadol

The majority of the individuals in the research, aged 20 to 29, learned about tramadol via their acquaintances or peers. To better understand this occurrence, the researchers performed a cross-tabulation and chi-square test of independ-

ence to see if the age of tricycle drivers had any bearing on where they first heard about tramadol.

The research revealed a significant relationship between the age of tricycle drivers and where they first heard about tramadol ($X^2 = 161.514$, $p < 0.001$). None of the tricycle drivers from the age groups of 10 – 19 and 20 – 29 first heard about tramadol from a physician.

Table 4. The Association Between Age Groups and Where They Heard About Tramadol.

Variables	10 -19 years	20 – 29 years	30 – 39 years	Total	X^2	df	P-value
Information source							
Family	1(7.7%)	12(92.3%)	0(0.0%)	13(100%)	161.5	8	P<0.001
School	0(0.0%)	23(100.0%)	0(0.0%)	23(100%)			
Friends	99(28.2%)	199(56.7%)	53(15.1%)	351(100%)			
physicians	0(0.0%)	0(0.0%)	33(100.0%)	33(100%)			

df: degree of freedom, X^2 : chi-square.
Source: Field data (2022).

2.4. General Knowledge on Tramadol

The results showed that tricycle drivers within the Tamale Metropolis had a fair general knowledge on Tramadol. A high proportion of the participants correctly indicated that Tramadol is not an illicit drug, 348 (82.9), Illicit drugs cannot be prescribed by doctors and are not legal, 254 (60.5), Tramadol can have a negative effect on the user's health, 258

(61.4), and that an individual can be mentally challenged due to tramadol use, 325 (77.4). However, majority of the participants did not know that the handling and the use of illicit drugs are punishable by law, 274 (65.2).

This finding has been discountenanced by the key informant at the Motor traffic and transport unit, he established that the rising incidence of accidents is a result of high illiteracy among the riders, most of whom he said are into drugs and lack the knowledge of the effects of such drugs.

Table 5. Frequency Table Showing the Participants General Knowledge on Tramadol.

General Knowledge	Frequency	Percent
Tramadol is an illicit drug?		

General Knowledge		Frequency	Percent
Illicit drugs can be prescribed by doctors and are legal	Yes	72	17.1
	No	348	82.9
The use of illicit drugs is punishable by law	Yes	166	39.5
	No	254	60.5
Tramadol can affect user's health	Yes	146	34.8
	No	274	65.2
Tramadol use results in mental illness	Yes	258	61.4
	No	162	38.6
	Yes	325	77.4
	No	95	22.6

Source: Field data (2022).

Association Between Level of Education and Knowledge of Tramadol use

In a chi-square test to determine whether or not there was any association between participants' level of education and their general knowledge on tramadol, a significant association was found between educational status and their perception about whether or not tramadol is an illicit drug ($X^2 = 40.514$, $p < 0.001$). Further, a significant relationship was also found between the educational status of the respondent and their knowledge as to whether tramadol can have a nega-

tive effect on a user's health ($X^2 = 42.228$, $p < 0.001$). Also, educational level was observed to have a significant relationship with respondents' perception about whether a person can be mentally challenged as a result of tramadol use ($X^2 = 39.313$, $p < 0.001$). Also, educational status of the study subjects was significantly associated with their knowledge of the illegality regarding the handling and use of tramadol by ($X^2 = 95.027$, $p < 0.001$) (Table 6).

The table below illustrates the above narrations.

Table 6. Association Between Level of Education and Knowledge of Tramadol.

Statements	No education	Basic Level	Secondary level	Tertiary Level	X^2	df	P-Value
Tramadol is an illicit drug.							
Yes	19(23.8%)	15(8.7%)	19(14.6%)	19(50.0%)	40.514	3	P<0.001
No	61(76.3%)	157(91.3%)	111(85.4%)	19(50.0%)			
Tramadol can affect user’s health.							
Yes	61(76.3%)	95(55.2%)	64(49.2%)	38(100.0%)	42.228	3	P<0.001
No	19(23.8%)	77(44.8%)	66(50.8%)	0(0.0%)			
Tramadol use results in mental illness							
Yes	61(76.3%)	110(64.0%)	116(89.2%)	38(100.0%)	39.313	3	P<0.001
No	19(23.8%)	62(36.0%)	14(10.8%)	0(0.0%)			
The use of illicit drugs is punishable by law.							

Statements	No education	Basic Level	Secondary level	Tertiary Level	X ²	df	P-Value
Yes	26(32.5%)	63(36.6%)	19(14.6%)	38(100.0%)	95.027	3	P<0.001
No	54(67.5%)	109(63.4%)	111(85.4%)	0(0.0%)			

df: degree of freedom, X²: chi-square.

Source: Field data (2022).

Sources of Tramadol.

From the results, it was noticed that fear of being persecuted or incarcerated accounts for why majority of the respondents opt to acquire the tramadol in the forest. One tricycle driving tramadol user reported that he always goes to the forest daily to get the tramadol because he felt he could be harassed or arrested if he dares go to the pharmacy without a prescription.

Table 7. Sources of Tramadol.

Variables	Frequency	Percent
Forest	139	33.1
Pharmacy	85	20.2
Drug Peddlers	68	16.2
Agents	76	18.1
Health workers	52	12.4
Total	420	100.0

Source: Field data (2022).

Data obtained from the table above found that 139 (33.3) respondents, making up for the majority of Tramadol users within the Tamale Metropolis obtains the drug from agents/suppliers in the forest, 85 (20.2) from the pharmacy, 76 (18.1) come by the drug from agents who brings it to them at their workplaces, 68 (16.2) obtain the drug from drug peddlers who peddle on the street of Tamale with the drug without license (mostly known as the ‘‘Abokyi’’ people) while 52 (12.4) acquire the drug from friends who are health workers.

2.5. Perceived Psychological Effects of Tramadol

Investigations revealed the effect of tramadol on vision. Two tricycle accident victims who were key informants at the Tamale teaching hospital's accident ward revealed that tramadol impairs a rider's capacity to visualize the road and safe riding. They emphasized that having a clear view of the road is crucial for safe riding, therefore a rider with impaired

vision runs a significant risk of being in an accident since the rider will not be able to navigate effectively under this condition. They shared their personal experiences, commenting on how tramadol or other psychoactive substances may impair a rider's ability to perceive road signs, pedestrians, or oncoming vehicles. A key informant opined:

Table 8. Reporting perceived psychological effects of Tramadol.

Psychological Variables	Frequency	Percent
Remembering Events		
Yes	165	39.3
No	255	60.7
Distorted Vision, Hearing and Coordination		
Yes	283	67.4
No	137	32.6
Impaired Judgement		
Yes	351	83.6
No	69	16.4
Reduced ability to perform task		
Yes	192	45.7
No	228	54.3
Altered Perception		
Yes	326	77.6
No	94	22.4
Blackouts		
Yes	325	77.4
No	95	22.6

Source: Field data (2022).

From the table above, 255 (60.7) indicated that when under the influence of tramadol, your ability to remember

events is not interrupted while 165 (39.3) believe that tramadol truly interrupts with an individual's ability to remember events. 283 (67.4) indicated that tramadol distorts and individuals' vision, hearing and coordination levels and 137 (32.6) indicated otherwise.

With the ability to issue out a fair sense of judgement, 351 (83.6) believes tramadol impairs an individual's fair sense of judgement while only 69 (16.4) do not think so.

While 228 (54.3), 94 (22.4) and 95 (22.6) participants do not agree that tramadol does not reduce the user's ability to perform task, does not alter his perception and does not trigger blackouts respectively, 192 (45.7), 326 (77.6) and 325 (77.4) participants contested these claims respectively.

2.6. Perceived Effects of Tramadol

The five-point Likert scale is considered as an interval scale thus the mean is very significant. From this study, a perceived effect with a mean from 1 to 1.80 implies strongly disagree, from 1.81 to 2.60 identifies as disagree. From 2.61 to 3.40 means Neutral, from 3.41 to 4.20 signifies agree and 4.21 to 5 means strongly agree.

From the Table below, Respiratory failures has a mean of 1.54 signifying that majority of the participants strongly disagree that the intake of tramadol is a trigger of respiratory failure. Also, Anxiety and Depression has a mean value of 2.58 implying that majority of the participants disagree that Tramadol intake has a bearing to the user's state of depression and anxiety.

Aggressiveness, Seizures and Inattentiveness or the inability to focus had mean values of 3.04, 3.18 and 3.26 respectively meaning that majority of the participants are indifferent and are neutral of tramadol being a trigger of aggressiveness, seizures and a user's ability to focus on an activity.

Also, majority of the respondents agrees that, tramadol use can result in dependence on the drug, Nausea and road accident given their mean values of 3.72, 3.99 and 4.07 respectively.

Lastly, many respondents strongly agree that tramadol use is a key trigger to sleepiness and dizziness given it mean value of 4.37.

It was found that, individuals who use tramadol were not aggressive people, even in circumstances of a justified aggression, they resort to non-aggression.

3. Discussions

3.1. Demographic Characteristics of Respondents

Respondents' religion, educational level, and gender were

investigated as socio-demographic factors. Religion is an important factor in life and has a bearing on how people lead their lives. The study revealed that 95% of respondents of the study were Muslims. This is consistent with the Ghana Statistical Service [2014] population and housing census results that revealed that Muslims forms 87.6% of the population of Tamale metropolis, giving Muslims a lopsided majority position.

While the study revealed that, 172 respondents (41.0%) acquired a basic level education with 80 respondents (20.5%) having no educational background, the 2010 population and housing census inversely identified that for males' population in the Tamale metropolis with age 6 years and above, 27.7% never attended school with 15.1% acquiring basic level education [19]. This finding is clearly contrary with the 2010 population and housing census.

3.2. Factors Responsible for the Use of Tramadol by Tricycle Drivers

Assessing the primary reasons why respondents use tramadol, the findings revealed that a swath majority of respondents use tramadol with 160 (38.1%) of them taking tramadol for physical activeness. This was arrived at after asking tramadol users to list the reasons that triggered them to taking tramadol, with a subsequent follow up question of further stating the three most compelling reasons out of the above stated reasons were giving. This is consistent with Fuseini et al., [17], who reported that tramadol energizes most users, and as a consequence, they frequently use the drug to either de-stress after a long day hard work or to gain the energy to go on with their regular activities without being tired. In line with this conclusion, [27] revealed that tramadol improves task performance in a randomized controlled study.

Nonetheless, the findings sharply contrast with Lehman [31], who revealed that tramadol causes much dizziness and sleepiness with a lower risk of chronic depression. Similarly, Hassamal et al., [25] cited that tramadol, particularly when used in high dosages would result in tiredness and dizziness rather than activeness.

The findings also revealed that 84 (20.0%) respondents engaged in the use of the drug as a pain killer to relieve them from pains. This conforms with Subedi et al., [46] who stated that people take in tramadol to relieve off acute and long-term pains. He reported that, tramadol, is utilized by clinicians as a powerful therapy for both acute (including post-surgery or post-trauma) and long term (cancer, for example) pain. A systematic study confirmed the unquestionable result tramadol has on relieving pains by two cases where respondents saw a considerable improvement in their mood following the consumption of tramadol for pain treatment [40]. Similarly, De La Peña et al., [8] reported that patients in regular wards that are without intensive continuous monitoring clandestinely take in tramadol at the blindsight of the physician to avert labor discomfort, and catastrophic pain.

This study also revealed that respondents were engaged in the use of tramadol because their peers are into the tramadol use. In agreement to this finding, a qualitative research conducted by Tam and Foo [47] highlighted peer influence as a crucial driver in tramadol usage. They reported that the influence of peer is a significant factor in many teens' tramadol use and is critical in the formation of behavior. Additionally, Fuseini et al., [17] in their study observed that individuals who had friends who took tramadol had a greater risk of abusing tramadol than those who did not have such friends. The study also agrees with a study in Egypt about the causes of addiction, which reported that, half (50%) of the respondents analyzed were addicted as a result of peer influence. Also, in Saudi Arabia, it was discovered that tramadol dependence began as a result of users acting under the influence of their friends [23].

The study showed that taking tramadol has a bearing on enhancing user's sexual performance. The West African Epidemiological Network agrees with this assertion when they stated in their report, that aphrodisiac effect of tramadol is the principal desired effect that accounts as one of the reasons for its continued use by addicts and abusers in West Africa [41]. This finding also agrees with [49]. They reported that tramadol improves the mean intravaginal ejaculatory transmission delay and companion sexual fulfillment scores.

Contestable, [24] disapproved the finding based on the fact that there isn't enough data to back up tramadol's favorable effects in sexual enhancement. Similarly, based on evidence drawn from several trials (817 subjects), it was beautifully summed up by [33] that a much more adverse effect, such as sexual dysfunction is highly associated with tramadol use. Also in contravention is a fascinating study by [16] that confirmed that male tramadol addicts had a reduced sperm density, motility, and vitality.

3.3. Perceived Effects of Tramadol Use

The findings of the study indicate that tramadol use can result to respiratory failures, with majority of respondents strongly disagreeing that the intake of tramadol is a trigger of respiratory failure. This finding does not agree with [30], whose study indicates that tramadol use does not cause respiratory depression in neonates when administered intramuscularly, and would cause far less respiratory depression when the mode of administration is intravenous. In addition, [42], explained that tramadol use does not produce clinically meaningful respiratory depression at recommended therapeutic dosages.

The study also found that when tramadol is used appropriately it does not result to anxiety, depression, aggressiveness, inattentiveness and seizures. This finding agrees with [11] that the above mentioned symptoms only shows up when a tramadol user tries to avoid the drug for some time. The authors reported that anxiety, despair, agony, extreme mood fluctuations, aggression, seizures as well as tremors and fa-

tigue are just a few of the symptoms' study subjects are faced with during withdrawal.

One of the findings also agrees with a number of literature that debates about the possibility of tramadol causing seizures. Few among such literature includes [21] who reported that, tramadol can only cause seizures in people when administered in high dosages to patients with epilepsy or in tandem with additional seizure-inducing medicines. Similarly, Gardner [18] asserted that with the range of the occurrence of seizures among tramadol users, seizures has only <1% chance of occurrence.

The study again found that tramadol use is a key trigger of sleepiness and dizziness. This finding agrees with [12]. They asserted that dizziness (5.3%) and sedation (2.4%) recorded as the most prevalent adverse effects.

Additionally, the finding is similar to [31] and [10] who both reported dizziness and sleepiness as possible adverse effects of tramadol use.

3.4. Knowledge, Attitude and Practice of Tramadol Use

The research showed that tramadol users had a fair general knowledge on tramadol. A high proportion of the respondents correctly indicated that tramadol is not an illicit drug, 348 (82.9%), illicit drugs cannot be prescribed by doctors and are not legal, 254 (60.5%), tramadol can have a negative effect on the user's health, 258 (61.4%), and that an individual can be mentally challenged due to tramadol use, 325 (77.4%).

Again, from further probing, it was concluded that some respondents misconstrue all painkillers to be the same as tramadol. The finding agrees with a survey conducted by [3], where it became obvious that many people who abuse the drug cannot appropriately characterize tramadol. He further suggested that many of the respondents are unfamiliar with tramadol-classified drugs and may be unable to distinguish them from other abused substances.

It was observed that quite majority (65.1%) did not have adequate knowledge on the dangers/consequences associated with tramadol abuse. A study on adolescence abuse of the drug conducted by [5] supported this finding reporting a limited knowledge of participants and the consequences of the tramadol abuse. Contrarily, [3] disagreed with the finding of a study showing majority of the respondents (78.4%) being aware of its abusive effect.

The research also found that tramadol users aged 20 to 29 years, learned about tramadol via their peers. This finding is consistent with that of [2], who used tramadol as a case study to analyze the critical appraisal of knowledge, attitude, and prevalence of drug addiction among adults and teenagers in Lagos State, Nigeria. He stated that 84% of the respondents between the ages 21-25 years said they got information from their friends and peers.

Again, findings from the study indicate that 42.4% of re-

spondents take in tramadol powdered content into energy drinks. This is consistent with a study in Wassa Amenfi, Ghana, which indicates that 29% of respondents said they mix tramadol with energy drink and consume it [14].

Nonetheless, Hom [28] disagrees with our result indicating that licking, snorting and injecting tramadol increases the perceived intensity of the effects. According to him, while tramadol pills are intended for oral use, it ought not be crushed and utilized for inhalation or injection. Inhaling and injecting it increases the perceived intensity of the effects, thereby resulting in high amounts of it entering the circulation, making it more effective for overdosing and potentially producing bad consequences including seizures.

The study found that, the majority 33.3% respondents who use tramadol within the Tamale metropolis obtained the drug from agents/suppliers in the forest, 20.2% from the pharmacy, 76 (18.1%) do supply the drug from agents to workplaces, 68 (16.2%) obtain the drug from drug peddlers (mostly known as the "Abokyi" people). Fuseini et al., [17] similarly pointed out that tramadol is readily available in pharmacies, chemical shops and the black market in Ghana and can be acquired without a prescription due to the fact that the drug is not on the list of controlled substances regulated by the Food and Drugs Authority in Ghana, because it is believed to have a low misuse potential. Peprah et al., [38] supportes the finding of the study adding that, though the drug is a prescription drug, participants emphatically indicating that they acquire the drug without any prescription note at an affordable cost mostly between 5 and 10 Cedis.

A study on the insurgence of tramadol abuse among Jirapa municipality's most active population also confirmed that the majority 81.5% of respondents supported "yes" for licensed chemical shops and pharmacies as the main and reliable source of tramadol. Not surprisingly, nearly 61.1% of respondents chose black markets from agents and suppliers as the second most reliable source, while 36.7% chose drug peddlers (abokyi) as the third most primary sources of tramadol [41].

The study also revealed the average daily dosage (milligram) intake of tramadol among tricycle drivers in the tamale metropolis being 155.48 ± 91.6 mg. This contravenes and infracts the dosage limits of 50 mg and 100 mg in tablets and capsules, as well as 50 mg/ml-2 ml in injections, approved by the FDA for use in Ghana, establishing the abuse of tramadol by tricycle drivers in the Tamale metropolis. This finding is consistent with the findings of [41], who reported a daily average milligram intake of tramadol of $100\text{mg} \pm 42.6$ mg.

3.5. Perceived Psychological State of Tricycle Drivers Regarding Tramadol Abuse

The study found that when under the influence of tramadol, the user's ability to remember events is not interrupted. Tramadol does not reduce the user's ability to perform task.

This finding is consistent with [37], who reported that respondents stay in the practice for a variety of psychological and physical fulfillment, including attentiveness and high energy levels. Sapiire et al., [41] reported similar results on memory, concentration and attentiveness, as well as a sense of hope. He came to the conclusion that few respondents mentioned alertness and attentiveness as another reason for their constant tramadol use. The drug causes the respondents to become more focused, alert, and attentive to their daily activities. Again, this finding is consistent with [4] who demonstrated in a randomized control trial that tramadol has an impact on stimulus processing related to sustained attention.

3.6. Conclusion

This research has brought to light the reasons for tramadol use among the tricycle drivers in the Tamale metropolis. Consistent with findings from other countries, this study discovered that the need to reinvigorate themselves and become physically active (38.1%), to relieve pains (20.0%) and peer pressure (14.5%) as the three most compelling factors that often usher tricycle drivers into the practice of tramadol use.

Tricycle drivers who use tramadol had a fair knowledge about the drug, also, the higher the educational level of the respondents the more informed and knowledgeable he is about tramadol.

Averagely, the daily dosage (milligram) intake of tramadol among tricycle drivers in the tamale metropolis was 155.48 ± 91.6 mg.

Nausea and road accident, sleepiness and dizziness are possible effects of tramadol use. While, respiratory failures, anxiety and depression, aggressiveness, seizures and inattentiveness or the inability to focus are all side effects of tramadol use. The psychological effects associated with tramadol includes vision, hearing and coordination distortion and also user's ability to issue out a fair sense of judgement is impaired.

3.7. Recommendations

Based on the findings of the study, the researchers recommends the following:

1. It is recommended that the government should prohibit the sale of tramadol and other lethal drugs over counter. Through its regulatory agencies, the appropriate authorities should strictly enforce tramadol abuse laws.
2. It is recommended that the GHS should organized health education programmes in the Tamale metropolis to help tricycle drivers out of tramadol abuse.
3. It is equally recommend that: Community-based outreach programs be organized by Social Welfare Organizations with support from Non-Governmental Organizations to sensitize tricycle drivers to control their desires towards tramadol use.

4. It is recommended that the Narcotic Control Board (NCB) fund anti-tramadol campaigns through the media (television, internet, and radio) in order to achieve a tramadol-free metropolis.
5. Drug peddlers in the forest serve as agents and primary source of this drugs, the Metropolitan Assembly should come out with regulatory mechanism to ensure that individuals discouraged from distributing the drug.
6. The Metro health educatorate should increase and consolidate their education on the negative effects of tramadol use on tricycle drivers, passengers, pedestrians, and the nation as a whole.
7. The National drug laws must also consolidate their anti-drug campaigns in order to achieve a tramadol-free society, with a particular emphasis on the incarceration of people in possession of tramadol without a prescription.

Abbreviations

FDA	Food and Drug Authority
NRSC	National Road Safty Commission
OTC	Over the Counter
GHS	Ghana Health Service
TMA	Tamale Metropolitan Assembly

Author Contributions

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Conflicts of Interest

The authors declare no conflicts of interest.

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