SCHOOL OF PUBLIC HEALTH

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PREVALENCE AND FACTORS ASSOCIATED WITH THE ABUSE OF TRAMADOL AMONG COMMERCIAL MOTORCYCLE (OKADA) RIDERS IN THE ELLEMBELLE DISTRICT IN THE WESTERN REGION OF GHANA.

BY

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DECLARATION

Ackah-Tanoeh Blay, do hereby declare that the findings of this study presented here are the result of research carried out by me, under the supervision of Dr. Prudence Tettey, School of Public Health, University of Ghana, Legon. All references made from other researchers and writers have been duly acknowledged.

30/06/2021

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DEDICATION

I dedicate this work to my lovely daughters Marian Anthoinette Blay, Kathleen Ackah Blay, Anna Ackah Blay and Marion Maame Ntriwaa Adwoba Blay. Thank you all for the motivation and inspiration from you.

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LIST OF ABBREVIATIONS

GHS	Ghana Health Service
GPS	Ghana Police Service
FDA	Food and Drug Authority
DVLA	Driver and Vehicle Licensing Authority
PPE	Personal Protective Equipment
NRSC	National Road Safety Commission
WHO	World Health Organisation
DHIMS	District Health Information Management System
MPH	Master of Public Health
DDHS	District Director of Health Service
DCE	District Chief Executive
NGO	Non-Governmental Organisation
GSS	Ghana Statistical Service
MTTU	Motor Traffic and Transport Unit

ABSTRACT

Introduction: In recent times, Tramadol has been named among the most commonly abused drugs among the youth in Ghana. Most studies have revealed that the long-term use of Tramadol has negative consequences such as addiction, dependence, and mental instability. Research on Tramadol abuse among commercial motorcycle riders (Okada) in Ghana is however limited.

Objective: The aim of the study was to investigate the prevalence of Tramadol abuse and factors associated with its abuse among Commercial motorcycle riders in the Ellembelle District in the Western Region of Ghana.

Methods: A cross-sectional study was conducted using a total of 424 Okada riders from 5 sub-districts in the Ellembelle District. Using a well-structured open and closed-ended questionnaire, study participants were conveniently selected to assess Tramadol abuse. STATA version 15 was used to analyze the data. A Chi-squared test and logistic regression model were used to determine the factors that are associated with the abuse of Tramadol. The prevalence of Tramadol use was determined by the proportion of respondents who used Tramadol to the total number of respondents.

Results: The mean age of respondents was 25.1± 5.3 years. The prevalence of Tramadol use among Okada riders was 24.3%. Higher prevalence was found among respondents in the age range of 23-28 years (35.9%) and 18-22 years (33.0%). A proportion of 27.3% of respondents used Tramadol alone, whereas 73% used Tramadol with other substances such as alcohol, marijuana cocaine and energy drinks. The main factors that contributed to Tramadol abuse among Okada riders were socio-demographic factors such as the age, marital status, educational level, previous occupation, and cultural influences.

Many people abuse Tramadol for various reasons such as for pain reliever, energy boosting for hard work and sex and for euphoric effect.

Conclusion: Tramadol abuse was high among Okada riders. Being of a younger age less than 29 years, being single, having low level of education, having easy access to Tramadol, history of drug and alcohol use, strong influence from friends, religious and family background of respondent served as contributing factors of Tramadol abuse.

Keywords: Tramadol, Tramadol, Abuse, Okada, Ellembelle

Operational Definitions of some terms

Addiction: Is defined as a psychological and physical inability to stop consuming a chemical, drug, activity, or substance, even though it is causing psychological and physical harm.

Drug: Is defined here as any chemical substance which when taken into the body can affect one or more of the body's functions

Drug Abuse: Is defined as the excessive illegal drug use and or legal drug use without a doctor's prescription; and when a prescription drug is used for a purpose other than its intended purpose.

Drug dependence: Is defined as the repeated drug-taking that usually results in tolerance, withdrawal and compulsive drug taking

Hallucination: Is defined as a perception of having seen, heard, touched, tasted or smelled something that wasn't actually there.

Delusions: Is defined as a belief that is clearly false and that indicates an abnormality in the affected person's content of thought. (A false belief)

Withdrawal: Is defined as a group of symptoms that occur upon the abrupt discontinuation or decrease in the intake of medications or recreational drugs.

Drug Tolerance: This is defined as a state of reduced sensitivity of a drug to the body at a given regular or normal dose.

Okada: Is a motorcycle, (or tricycle)

Okada driver or Commercial motorcycle driver: This is defined as an adolescent or youth from 15 years old and above who are engaged in the commercial motorcycle transport business.

Permanent disability: Is defined as a lasting disability from work injury or illness that affects your ability to earn a living

Unproductivity: is defined as not effective in bringing something about, not yielding result, benefits, or profits. (Not productive)

Galamsey: is defined as illegal mining.

CHAPTER ONE

1.0 Introduction

This chapter presents the background information, problem statement, objectives, research questions, justification and limitations of the study.

1.1 Background

The abuse of Tramadol among Ghanaian youth has become a major public health concern in recent years which calls for attention and intervention (Elliason, Sandow, 2018; Fuseini et al., 2019). Tramadol has been defined as a centrally acting analgesic with low μ-opioid agonist properties of norepinephrine (NA) and serotonin reuptake (World Health Organisation, 2014). Tramadol a synthetic pain killer performs a similar function as morphine which binds to the brain receptors to block transmission of pain sensation from the body to the brain (World Health Organisation, 2014). Tramadol has different brands, forms, and strengths which may be tablets, capsules or injection. Tramadol is used for the treatment of moderate to severe pain but its long-term administration has negative consequences on the user (Subedi et al., 2019a).

Several studies have identified some socio-demographic factors to be associated with the abuse of drugs and other illicit substances (Bashirian et al., 2014). Factors found to be contributing to the abuse of Tramadol among the youth range from individual factors, socio-cultural factors and environmental factors (Abdu-Raheem, 2013; Whitesell et al., 2013). Specific factors include curiosity, previous drug use, emotional and social pressures, peer influence, family background, educational and occupation status of an individual and many others (Abdu-Raheem, 2013; Whitesell et al., 2013). Media publicity of information on Tramadol, its availability and its

relatively cheaper price and poor regulation of the use of the drug by law also contribute to its abuse (Fawzi, 2011a; Klein et al., 2018). Some motives behind the abuse of Tramadol by the youth have been found to be a pain reliever (Elliason, Sandow, 2018; Fuseini et al., 2019). Although Tramadol is used for the management of pain, most people who abuse it use it as an energy booster for hard work. Some also use it as a remedy for premature ejaculation and sexual booster, euphoric effect (to feel high) for psychological well-being (Elliason, Sandow, 2018). The negative effect of Tramadol has been found to be drug dependency, tolerance, drug abuse, emotional instability and sometimes death. Other negative effects of Tramadol are arrhythmia (irregular heartbeat), cramps and coma when it is taken overdose and long-term administration can lead to drug dependence, tolerance and drug abuse (Fuseini et al., 2019; Subedi et al., 2019b; World Health Organization Expert Committee On Drug Dependence, 2018). Recent data from previous studies show that drug abuse cut across different groups of individuals such as students, farmers, riders, traders, male and female and so on (Bassiony et al., 2018; Carmel Adjogbe Gagnon et al., 2019; Peprah et al., 2020; Phing & Aslam, 2020). Nevertheless, studies in this area is limited in Ghana. The Food and Drug Authority (FDA) has stated that the approved strength of Tramadol in the Ghanaian market is the 50mg and 100mg tablet or capsule (Klein et al., 2018). However, there are other higher doses of the drug which is trending on the ‘‘black market’’ by drug peddlers which are 150mg, 200mg, 250mg and 300mg, being unapproved dosages which is mostly abused by the youth (Elliason, Sandow, 2018).

1.2 Problem statement

The sudden increase in the abuse of illicit drugs among the youth in the Western Region as reported by most findings of recent studies have become a major public health concern (Elliason, Sandow,

2018). Available information sourced from the office of the Food and Drugs Authority indicates that about 5,490 tablets/capsules of Tramadol was seized from three shops at Asankragwa in the Wassa Amenfi West District on 2nd November 2017. In 2018, about 2,180 tablets/capsules of Tramadol were seized from 8 shops in Sekondi-Takoradi, in the Sekondi-Takoradi Municipal Assembly, (STMA), Enchi in the Aowin Swame District and Wassa Akropong in the Wassa Amenfi East District. Eleven (11) Licensed Chemical shop owners were handed over to the Pharmacy Council in 2017 and 2018, to effect sanctions on them for illegal possession and sales of unapproved higher dosages of Tramadol. The unapproved higher dosage of Tramadol in the market were 125mg, 150mg, 200mg and 225mg tablets/capsules. Additionally, the 2017 Western region Food and Drugs Authority (FDA) report indicated increased rates of Tramadol abuse and misuse among the youth in the Western region. Though Tramadol is a prescription-only medicine used to treat moderate to severe pain, there has been a diversion of its intended purposes which has led to increased access to the drug by many people. It has become a very serious public health concern which calls for immediate intervention since this phenomenon has been associated with a high incidence of armed robbery, youth vandalism, road traffic accidents, truancy and many other unwanted social behaviors among tramadol users (Elliason, Sandow, 2018) The youth including students reportedly take the drug to increase their desire during sexual intercourse with their partners and helps them to study overnight while Okada riders take Tramadol as an energy booster. This abuse and misuse of tramadol by Okada riders is alleged to have been contributing to the high road traffic accidents rate among motorcycles, cars and other heavy-duty trucks resulting in injuries of passengers, pedestrians and Okada riders themselves in Ghana and particularly Ellembelle district. Although a lot of studies have been conducted on tramadol abuse elsewhere

in the world, there has not been enough research on tramadol abuse among Okada (Commercial motorcycle) riders especially in the Ellembelle district of Ghana. It is based on these reasons that this study aimed at investigating factors associated with the misuse and abuse of tramadol among Okada (commercial motorcycle) riders in the district.

1.3 Conceptual Framework

Presented below is a conceptual framework which explains the relationship between the misuse and abuse of Tramadol and socio-demographic factors such as age, marital status, religious background, occupation, educational status, accessibility, history of alcohol and drug use, reasons and effects of misuse and abuse of Tramadol drug.

The abuse of Tramadol has a psychological effect such as emotional disturbance, over-dependence on drug use and addiction which can cause accidents among Okada riders leading to various types of injuries leading to permanent disability and death of victims cause unproductivity as an economic effect (Elliason, Sandow, 2018). From relevant literature review on same studies revealed that marital status of males also influences the misuse and abuse of tramadol such that people who are not married are more likely to misuse and abuse tramadol and many other substances(Fawzi, 2011b; Saapiire et al., 2021). While religious people mostly adhere to religious teachings and practices making them less vulnerable to misuse and abuse of tramadol than people who are not religious and do not adhere to any religious teachings and practices. Previous occupation and educational status of Okada riders also serve as a contributing factor to the misuse and abuse of tramadol. People whose previous work involved a lot of muscular activities and physical strength such as footballers, miners, farmers, masons, truck pushers, riders, auto mechanics, heavy-duty machine operators, and many others are more likely to experience general

body pains, waist pains, headache which may call for the use of pain killers such as Tramadol resulting to its misuse and abuse. The environment where one lives and access also pave way for tramadol misuse and abuse. History of smoking, drug and alcohol use by an individual also serves as a contributing factor for an individual to misuse and abuse tramadol(Anzaku, 2013). The main reasons underlying the use of tramadol indicated as pain reliever, energy booster for hard work, sexual booster, psychological well-being and euphoric effect (To enhance mood or feel high)(Danso & Anto, 2021). The effect of Tramadol misuse and abuse could be psychosocial problems such as emotional disturbance, over-dependence on drugs, addiction, and economic problems resulting in unproductivity due to Okada accidents which lead to injuries, permanent disabilities and sometimes death of victims(Anzaku, 2013; Saapiire et al., 2021).

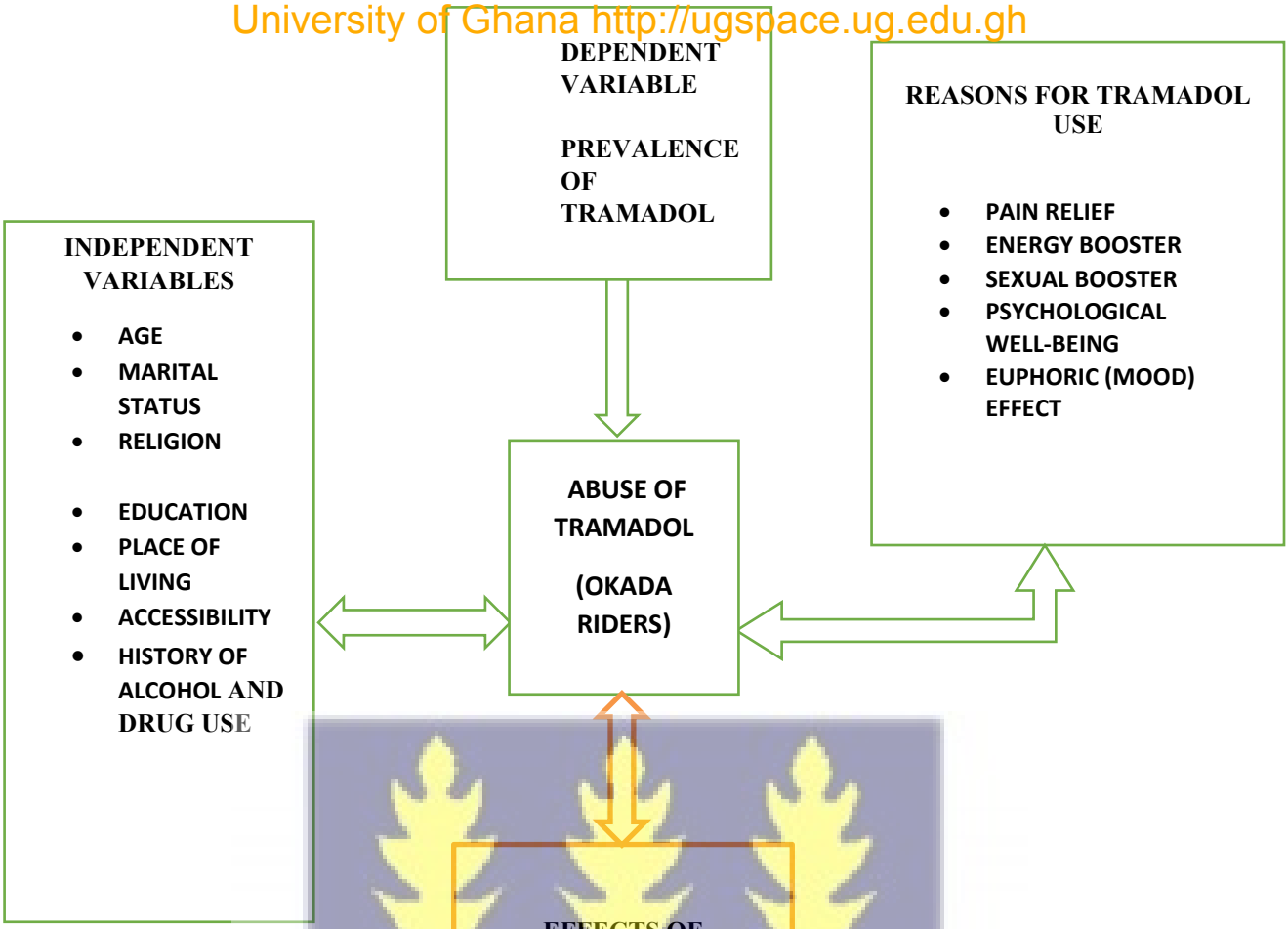

Figure 1: Conceptual Framework on factors associated with the abuse of tramadol

(Author's construct, 2019)

1.4 Research questions

- What is the prevalence of Tramadol use among Okada riders in the Ellembelle district?

- Is there an association between demographic characteristics and tramadol abuse?
- What are the sources of Tramadol in the Ellembelle district?

1.5 Objectives of the study

1.5.1 General objective

The aim of the study was to investigate the prevalence of Tramadol and factors associated with Tramadol abuse among Okada (Commercial motorcycle) riders in the Ellembelle District.

1.5.2 Specific objectives

i. To determine the prevalence of Tramadol use among Okada riders in the Ellembelle District.
ii. To determine the socio-demographic characteristics associated with the use of Tramadol among Okada riders in the Ellembelle District
iii. To identify sources of Tramadol in the Ellembelle District.

1.6 Justification of the study

There has been an increase in reported cases of Road Traffic Accident (RTA) among Okada (Commercial Motorcycle) riders in recent years in the Ellembelle District which has become a major public health concern. Available data sourced from the District Health Information System (DHIMS 2: July 2019) indicated that reported cases of Road Traffic Accidents, (RTA) were about 1156 in 2016, 851 in 2017, 692 in 2018 and 403 in 2019 (for the half-year from January to June 2019). Although the report did not differentiate between Okada accidents and other motor vehicles accidents but interview with three medical officers from three different major health facilities in the district confirmed that majority of the reported cases of RTA were Motorcycle accidents. The

2018 end of year report and information sourced from the Ghana Police Service in the District revealed an increase in reported cases of drug-related crime in the district which includes robbery, murder, rape, stealing, assault, causing unlawful damage to properties and violence. The District Police report 2018, indicated the most common drugs found during periodic police patrol checks from the 'Ghettos'' (a base for illicit drug users) were marijuana, Tramadol, and alcohol brand such as ''Adonko,'' "Opeimu'', ''Agya Appiah'' and many others. Records from the Motor Traffic and Transport Unit of the Ghana Police Service in the district found that 33 and 16 Okada riders were arrested and arraigned before court and fined in 2018 and 2019 respectively.

According to the Ellembelle District Motor Transport and Traffic Unit, (MTTU) report 2018, found that majority of Okada riders do not adhere to Road Traffic rules and regulation such as using unregistered motorcycles and not having a valid license for riding a motorcycle. Prior to the increase in accident cases among Okada riders, drug, alcohol and many other substances used are possible predictable factors contributing to most of the accident cases in the District. The banning of galamsey (illegal mining) activities in 2017 by the government of Ghana caused many of the youth who were engaged in galamsey work in the District to divert into Okada transport business as an alternative job for a living. The nature of galamsey work also requires physical strength which is alleged to be associated with drug and alcohol use to relieve pain. (Elliason EK, Sandow B, 2018) In view of this, we predict that most of the Okada riders who have previously been involved in galamsey activities might have used a drug such as Tramadol, alcohol and other illicit substances. Okada riders are also known for their reckless driving, non-adherence to safety rules and regulations, overloading and many others. Findings of this study will inform appropriate government institutions such as the Ministry of Health, Ghana Health Service, Pharmacy Council of Ghana and the Food and Drugs Authority to initiate effective and preventive health promotion

and educational campaigns on the effect of Tramadol abuse. The Ghana Police Service, Ministry of Roads and Transport, National Road Safety Commission, Driver and Vehicle Licensing Authority will also use the findings of this study as a guide to strengthen law enforcement to prevent drug abuse and road traffic accidents in Ghana.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter presents literature on prevalence, factors influencing the abuse of tramadol, reasons for Tramadol use and the effect on users. Google scholar, Jstor, PubMed and other publications were some of the sources used.

2.2 Tramadol abuse

Tramadol is an opioid analgesic indicated for the treatment of moderate to severe pain. In the case of long-term administration, it leads to drug dependency, tolerance and drug abuse.

Tramadol is a centrally acting opioid analgesic with weak u-opioid agonist properties, and is a weak inhibitor of norepinephrine and serotonin uptake. Tramadol has low abuse potential which made the US Drug Abuse Advisory Committee recommend to the Food and Drug Administration FDA in the US to approve Tramadol as a non-scheduled analgesic(Zabihi et al., 2011).

Bashirian et al., (2014) found an estimated number of people who abuse or misuse various types of drugs to be around 149 to 279 million people from the age of 15 to 64 years and indicated opioid analgesics abuse starts from its recreational use. Tramadol has been brought to the market by Iranian pharmaceutical companies as an alternative analgesic prior to the announcement on prohibiting of injectable diclofenac, and no legal restriction was imposed on its sale and distribution though the drug is an opioid (Bashirian et al., 2014). Therefore, its consumption spread in the society as fast and symptomatic pain relief resulting in a challenge in its use among patients, physicians, particularly general practitioners to treat patients. Hence, unrestricted

prescription of tramadol in Iran by The Office of Controlled Drugs and Substances during 1999–2007 in retail pharmacies made tramadol most widely dispensed analgesics among Iran's essential drugs list. The abuse of Tramadol 5% increase in the society in recent years (Taremian et al., 2008). The long-term use of Tramadol may result in drug dependence although it seems to have a very low drug dependence. A study by Fawzi, (2011) conducted in Egypt reported alarming phenomenon of Tramadol (Tramal, Amadol, Tramax, Contramal, Trama SR, Ultradol, and Tramundin) abuse that have been demonstrated heavily in the recent years in the country. Olsson et al, 2017 found substantial increase in the use and abuse of prescription drugs during the past two decades in the US and in the European Union. Zozel et al., (2013) investigated and identified more than 16,000 cases of adolescents (age13–19years) abusing prescription drugs in the US between 2007 and 2009, where the most frequent opioids were hydrocodone (32%), oxycodone (15%), and tramadol (11%)(Zosel et al., 2013)(Olsson et al., 2017).Tramadol, classified as a weak opioid, with an analgesic effect similar to that of codeine, has evoked increasing concern for the risk of developing tramadol dependence and a risk of serious adverse reactions, including epileptic seizures and fatal intoxications (Zosel et al., 2013) . Olsson et al, 2017, also indicated that Tramadol which is primarily a prescription drug, has now been described to be associated with more traditional illicit drugs, including cannabis where data from the UK have associated tramadol misuse with risk-taking behaviour rather than with marginalization and other addictive disorders. They also reported on a study in Sweden by Richert and Johnson, (2013) they investigated the illicit use of buprenorphine and methadone among adolescents and young adults which found benzodiazepines and tramadol use among adolescents to be high indicated increase in tramadol misuse during the past few years (Richert & Johnson, 2013). Data from police records in Sweden authorities identified tramadol as the second most commonly seized pharmaceutical drug on the

drugs list nationwide (Olsson et al., 2017). Fawzi, 2011, reported again that in Gaza the youth in their thousands have become addicted to prescription-only painkillers used for the reason to relieve their stress of living in the environment of Palestine. The results revealed professionals, students, and laborers buying tramadol in large quantities though a synthetic opioid painkiller like morphine is considered on the black market as milder(Fawzi, 2011c). An estimated figure of up to 30% of males between 14 and 30 use it regularly, and that as many as 15,000 are addicted (Fawzi, 2011). Reports from Israel indicated smuggling of the drug by some suppliers of Tramadol from Egypt into Gaza through tunnels, tramadol being the mostly used one (Fawzi, 2011; Adms et al.,2006). Elliason et al..2018 reported an increasing rates of tramadol misuse and abuse in Wassa Amenfi West District of Ghana and in general, tramadol is now a common and potent prescribed painkiller that have been widely used for long-term management of severe pain. This was reechoed by Pharmaceutical Society of Ghana which stated that "The strength of approved tramadol by the Food and Drug Authority (FDA) is 50mg and 100mg oral capsules and not the 200mg and 250mg as is found circulating in the markets of the Ghana"(FDA, 2018). Zhang & Liu, (2013) indicated the sale of Tramadol started by Grunenthal in Germany since 1977 for the treatment of acute to severe pain due to its a weak μ-opioid agonist properties and inhibition of norepinephrine (NA) and serotonin reuptake. They also stated that tramadol was marketed in Europe for roughly 20 years before its authorization in the United States (US) in 1995, with little proof of abuse and the likelihood of abuse of tramadol in the United States was 2-3/100,000 and then decreased to 1/100,000(WHO, 2017; Zhang & Liu, 2013). They noted that the World Health Organization (WHO) attached excellent significance to tramadol abuse and reliance, and four estimates were given.

According to the 2018 Food and Drugs Authority (FDA) Western Region report indicated that the approved dosage of Tramadol in the market is the 50mg and 100mg tablets/capsules depending on the brand and company. The unapproved dosages of Tramadol found on the market are 125mg, 150mg, 200mg and 225mg tablets/capsules (FDA Western regional Office, 2019). Tramadol is approved to be sold only in pharmacies and not to be sold by Licensed Chemical Shops or Over the Counter Medicine Sellers (Klein et al., 2018). The laws that govern the sale of Tramadol is Section 126 of the Public Health Act, 2012, ACT 251 regulation of narcotic and psychotropic substances and are enforced by conducting of periodic market surveillance to ensure that only registered brands and strength of Tramadol are stocked and sold by approved facilities (Republic of Ghana, 2012). Available records on how unapproved dosage of Tramadol gets into the country is by smuggling through unapproved routes, for example, the bushes, rivers or sea, porous borders and so on (International Narcotics Control Board, 2017; USDOS, 2013). The law enforcement agencies responsible for the regulation of the sale of Tramadol in the country are the Food and Drugs Authority and the pharmacy council of Ghana. Records of seizures of Tramadol in the Region indicated that in 2017, (5490) tablets/capsules were seized from three shops at Asankragwa in the Wassa Amenfi West District on 2nd November 2017. In 2018, (2180) tablets/capsules were seized from eight shops in Sekondi-Takoradi, in the Sekondi –Takoradi Municipal Assembly, STMA, Enchi in the Aowin Swame District and Wassa Akropong in the Wassa Amenfi East District. Records of Tramadol offenders in the hands of the law indicated that in 2017 and 2018(FDA Western regional Office, 2019), Licensed Chemical shop owners were handed over to the Pharmacy Council to effect sanctions on them. The punishment for Tramadol traffickers is conviction to a fine not less than Seven Thousand Ghana Cedis (GHS 7,000.00) penalty units and not more than Fifteen Thousand Ghana Cedis GHS (15,000.00) penalty unit or a term of

imprisonment of not less than Fifteen (15) years and not more than Twenty-five (25) years or both as determined by the court(FDA Western regional Office, 2019).

2.3 Factors Influencing Tramadol Abuse

In the United State (US), illicit prescription of tramadol as for pain relief has become a continuous public health problem (Eldin et al., 2016). In the same study more individuals over the age of 12 were found to have reported within the past month non-medical use of prescription tramadol as pain relievers, (5.1 million people) then cocaine (over 5 million people) or heroine (200,000) people in 2010 (Eldin et al., 2016). Tramadol and Tilidine (combination with naloxone) were used as weak opioid analgesics in Germany (Pergolizzi et al., 2012). Tramadol use for deliberate self-poisoning among Patients with acute poisoning in Iran has increase in recent years (Seyed Kazem et al., 2018). Bashirian et al., (2014) reported that although Tramadol is an opioid drug yet there were no legal restrictions which led to a wide sale, distribution and its consumption due to its fast and symptomatic relief of pain effects. Therefore, physicians apparently compete in the prescription of tramadol which has led to its misuse and abuse. Tramadol was a drug which was easily obtained and used as unscheduled medication which made it to be accessible online, later diverted from clinical settings and purchased outside the United States (Stoehr et al., 2009).

Among the youth and middle-aged groups, tramadol usage is popular and massive for premature ejaculation purposes an extended orgasm to enhance pleasure during sex. This is aggravated by its promotion in many online drug stores and media (Fawzi, 2011a).

Stoehr et al., (2009), indicated that Tramadol abuse rate was as high as 26.5% because of its easy access because parents do not consider its consequences and also due to the lack of serious effort for preventive programs. Peer pressure, curiosity, lack of parental control and problems of personality for conditions known to be socio-economical, an energy booster for hard work for a

longer period, drug availability, prevention of withdrawal symptoms occurrence as factors contributing to substance use among adolescents(Bassi AP, et al.,, 2017) Lower price and easy accessibility of tramadol without prescription make tramadol very popular and the belief of faster relief from pain, headache, abdominal pain, nervousness and depression is considered as psychometric symptoms (Fawzi, 2011c). In the Egyptian society, there is a wide range of tramadol use due to its unlawful transaction which has been linked with abuse, making it easy to be accessed and readily provided drug at a cheaper price (Fawzi, 2011). In Egypt, the wide range of tramadol consumption has been contributed greatly to its popularity as a remedy to obviate rapid ejaculation, prolong intercourse duration, and augment sexual enjoyment, especially among youth and middle-aged people (Eldin et al., 2016); The selling of tramadol in an unlawful manner has been on the rise in the United Arab Emirates. Tramadol is popularly smuggled into Gaza from Egypt through tunnels owing to its lower price and availability without prescription. He also found an estimated number of 15,000 males addicted to tramadol in Gaza of which 30% were males between the ages of 14 and 30 years old and Tramadol been used to relieve psychosomatic symptoms related to stress such as headache and abdominal pain, depression and nervousness (Fawzi, 2011).

2.4 Effects of Tramadol and Psychotic drug abuse on health

"Bassi et al., (2017)" indicated that an estimated number of 162 and 324 million people, representing between 3.5% to 7.0 % of the world population from 15-64 years of age, have previously used illicit drugs and prevalence of intravenous substance abuse globally was around 0.27 % and 0.17% in Africa. They found drug use and abuse becoming most worrying health problem among adolescents in Nigeria and some parts of the world indicating continues use of the drug by adolescents has become one of the most disturbing health-related situations in Nigeria and other parts of the world. Hence, continuous use of the drug has a significant effect on valuable

human lives and productivity. They also reported that death in relation to drugs recorded in 2012 has been estimated at 183,000 (range: 95,000-226,000) as compared to a mortality rate of 40.0 (range: 20.8-49.3) deaths per million among people from 15-64 years with increased substance abuse to become a fast-growing phenomenon globally. Bassi et al., 2017 also reported that about 70% of young people would have attempted taking alcohol while half of them would have taken an illegal drug and about 40% would have also smoked a cigarette, those who have also used non-prescription drug for non-medical reason as reason for the years in senior high school years also account for 20%. In their study, they stated the prevalence of the use of illicit drugs by High School students to have been on the increase in the United Kingdom, Canada, Ontario, Trinidad and Tobago, the United States of America and Africa as well, having high index of alcohol use, smoking of cannabis and cigarette in Rwanda and Ghana. In the view of Bassi et al (2017), the consequences resulting from the abuse of drugs among adolescent, youths and adults are problems with academic performance, physical health impairment, stigmatization, family and socio-economic problems, delinquency and unemployment. The most common side effects of tramadol abuse and misuse are independent convulsion especially with excessive ingestion, bradycardia apnea, headache, dysphoria and even coma in addition to convulsion(Stoehr et al., 2009). More so, the main complications of Tramadol misuse and abuse are apnea (shortness of breath) and consequently death as a result of cardiorespiratory arrest(Taheri et al., 2018). Tramadol tablet abuse effects are brain disorders, psychosis, double personality, and inability in decision-making, lack of coordination in walking and dried mouth withdrawal symptoms and physical dependence are also linked with the tramadol and tramadol/acetaminophen abuse in many reports, including published case series, medical watch reports, and retrospective reviews (Stoehr et al., 2009). They also reported atypical withdrawal symptoms resulting from the dependence of Tramadol as

delusions, confusion, peripheral numbness, paranoia, and hallucination. They argued intoxication of Tramadol is accompanied by euphoria, sedation and/or excitation, nausea, and miosis, behavioral withdrawal symptoms are typically the opposite and are associated with depressed mood, craving, and drug-seeking. The analgesia associated with tramadol is also believed to result from its ability to block the reuptake of synaptic norepinephrine and serotonin in the Central Nervous System(Shipton, 2000).

Liu et al., (2015) reported in a study conducted among adult motorcycle riders on hospitalization due to alcohol related cases found motorcyclist as vulnerable road users who is exposed to severe and often fatal injuries. They also argue that the regular drinking behavior of motorcyclist are strongly related to the higher frequencies of visit and hospitalization at the emergency department.

In their view, illicit drug use, risk-taking behaviors, roadside environment and non-helmet use contribute to motorcycle crash or accidents, with the severity of the motorcyclist injuries(Rossheim et al., 2014; Yousif et al., 2020).

Fawzi 2011, reported an increase in the observed co-presentation with abuse cases presented to the emergency ward as well as Tramadol abuse and Tramadol related death in Iran, in which biological samples from an autopsy of studied cases analysis found 249 cases alone or with other drugs with majority being young male adult. Thus, Tramadol related deaths in 2008 were 32.5 times more frequent than in 2005 indicating high increases in tramadol related fatalities. Ibrahim et al., 2017 have also reported that Nigeria in the 21st century is faced with the problem of the use and abuse of psychoactive substances which has become a national public health concern due to its association with psychosocial, economic and medical complications(Ibrahim et al., 2017). In their view, the most prevalent psychoactive substance used nationwide especially in the northern parts

of Nigeria is alcohol as a result of its lower price. In the south which is attributed mainly to the influence of t Islamic religion faith in the north have positive influence on the use of alcohol, however, there is others are found using psychotic drugs and cannabis. According to Ibrahim et al. (2017), Tramadol use among drug users in the northeast region of Nigeria within the past years show significant records of drug use events in the sub-region. They indicated that, initially, Tramadol was reported to have a reduced potential of addiction than other opioid analgesics but was later found to be contrary. It was not previously in the country's essential drug list but was regularly prescribed for acute and moderate pains when other non-narcotic analgesics by clinicians could not. Ibrahim et a., (2017) also indicated that Tramadol is also often used off-label for other purposes such as premature ejaculation and for its euphoric effects. They stated some of the negative effects of Tramadol such as the development of seizures, classical opioid withdrawal syndrome and psychiatric symptoms such as aggressiveness and hostility(Ibrahim et al., 2017).

2.5 The Emergence of Okada (Commercial Motorcycle) Operation

"Okada" is a motorcycle or bike used for commercial transport in Nigeria. This idea of using motorcycle/bike to carry passengers/commuters in Nigerian communities came up in the 1980s during the time the country experienced an economic downturn(Isiaka & Saliu, 2014). This local motorbike commercial transport is also commonly used in some other West African Countries like Benin Republic, Burkina Faso, Liberia and Sierra Leone(Odidi, 2012). Jobless youths began to use motorcycles to earn money by transporting passengers on narrow or poorly maintained roads to faraway cities and villages. This type of transportation quickly became popular and its acceptance has increased steadily. Okada is now one of the primary modes of transportation in African countries because of its cheap and adaptable transportation system(Kumar, 2011). Even

in remote villages, they arrive at regular intervals. It has become a means of transportation regularly used by the young and the old and men and women(B., 2019; Jones et al., 2016; Kumar, 2011).” In a normal situation, “Okada” bike carries one or two passengers at a time. While in an abnormal situation, it carries more than two passengers at a time, that is, three to four or even five passengers at a time (Kumar, 2011). A study by Oladipo (2012), found that motorcycle as a means of commercial transportation has the highest percentage for intercity transport in Nigeria(Oladipo, 2012). He also reported that in Nigeria the use of motorcycles by private individuals had existed for a long time and many used it for private purposes to transport farm produce and hawk their goods like bread, medicines, newspapers etc. Oladipo again stated also that, the commercial use of motorcycles began in Calabar which is the capital of Cross River State in Nigeria in early 1970. In addition, He cited that apart from Calabar, documentary evidence also shows that motorcycles transport was first introduced for public transportation in the north Nigerian towns of Yola in 1970. However, today the use of motorcycles for public transport has gradually spread across almost all African countries (Kumar, 2011).

2.7 Factors Contributing to the use of Motorcycle for Commercial Transport Business

A lot of factors have been identified to be the reasons for motorcycles use as a means for intra-city transport in African(Isiaka & Saliu, 2014; Jones et al., 2016; Kumar, 2011). A country like Ghana has one important reason as a result of the fast rate of urbanization in the face of inadequate means of transportation. It is often difficult to get conventional means of transportation to move more people into and out of urban areas to rural areas. Commuters even often struggled at peak periods for commercial vehicles to convey them in /out or within urban areas due to traffic congestion (Kumar, 2011). The inadequacy of the transport system in African countries like Ghana has been handled with the emergence of motorcycles for commercial purposes on the streets of Lagos gave

birth to Okada business. Secondly, the high unemployment rate in African countries like Ghana acted as an easy and simple way of employing the unemployed of recent. Therefore, the lucrative nature of the Okada business as a result of its reasonable profits from their operations became easily sought jobs in African countries (Kumar, 2011).

2.8 The Economic Benefit of Okada Transport Business

The economic importance of the Okada business as reported by Chalya et al., (2011) revealed that motorcycles can reach areas where commercial vehicles may not reach due to bad road. Thus, there is no fear that the road is too narrow and there is no area that is too remote for motorcycles to reach. They are able to take passengers to their doorstep; they are faster and saves time than other means of transport. Their ability to maneuver their ways through traffic congestion and cheaper to maintain a motorcycle that a taxi or a bus. Registration and licensing of motorcycle boost revenue generation for the growth of a country's economy. Festus and Nzokuru (2014) study found that Commercial motorcycle business was embraced by many youths in Nigeria due to its perceived benefits such as flexibility to take people to their destinations, the quick generation of income to meet the basic need of life and its cheaper way of maintenance(Festus & Nzokuru, 2014). He also indicated that many unemployed youths have found Okada transport business as gainful employment and has also contributed to government revenue generated from monies paid for motorcycle registrations and motorcycle driver's licenses(Festus & Nzokuru, 2014).

2.9 Problems Associated with Okada Transport Business

RoSPA Road Safety Research, 2017 reported that the number of motorcyclists which were killed in road traffic accidents in 2013 were about 286,000 represented a quarter of deaths resulted from road traffic accidents that year which higher number of deaths were motorcyclist and occurred in

low and middle-income countries(RoSPA, 2017). This makes the safety of motorcyclist a global concern(WHO, 2007). The report also indicated that, about 19,297 motorcyclists were injured through road accidents in 2016 which 319 were killed and 5,553 were seriously injured in Great Britain(RoSPA, 2017). Thus vulnerable road users are motorcyclists because they have a higher rate of crash and injuries than other vehicles due to lack of other features of protection such as seat belts, airbags and other impact protection features making them 2.7 times more likely to have an accident when they are under the influence of alcohol than a car driver(RoSPA, 2017). The report also indicated that alcohol was present in 39% of 921 accidents cases reported a reduced ability to concentrate when under the influence of alcohol which creates over-confidence that sometimes leads to accidents(RoSPA, 2017). They also argued that, impairment by drugs (illegal or medicinal) been recorded in 2016 as a contributory factor in 81 severe cases of accidents with 336 been seriously injured(RoSPA, 2017). A study by Ibrahim et al., (2016) reported that commercial motorcyclists are among the most vulnerable road users and have the tendency to engage in drug abuse by the reports of codeine-containing cough syrup abused in many Nigerian states. They reported that about 90% of the world's fatalities on the road occur in low-and middle-income countries, with about half of them being pedestrians, cyclists and motorcyclist, and at the present rate road traffic accident are predicted to rise to become the seventh leading cause of death by 2030 (WHO,2016a). A motorcyclist is among the most vulnerable road users(WHO, 2007). A motorcycle driver is 24 times more likely to be killed or seriously injured per kilometer journey than a car drive(Konlan et al., 2020). Also, a motorcycle rider is eight times more likely than a car driver to be involved in a road collision; a motorcycle rider is 24 times more likely to be killed or seriously injured per kilometer traveled than a car driver(Konlan et al., 2020). Commercial motorcyclists constitute a large proportion of modern choice of commuters in many cities in Nigeria and these are mostly ridden by youths who are reckless on the road thus causing and being involved in multiple road

accidents(Festus & Nzokuru, 2014; Jones et al., 2016; Oluwaseyi et al., 2014). Study on motorcycle injuries as an emerging Public Health Problem in Tanzania reported that motorcycle injuries constitute a major but neglected public health problem in developing countries and contribute significantly 50% overall road traffic injuries (Chalya et al., 2011). According to Olubomehin (2012) Okada riders operate under harsh weather conditions which expose them to various illness which made some of them indulge in taking alcohol and other drugs to reduce the effect of the direct cold they are often exposed to as they operate in early mornings. This increases the number of road accidents resulting in minor and major injuries ranging from abrasions, sprains, bone fractures which results in permanent disability to victims and sometimes loss of lives. Okada riders are known to engage in reckless driving and refusal to comply with traffic rules have been the main cause of accident among Okada riders (Chalya et al., 2011). Festus & Nzokuru, (2014) also found some negative impacts of Okada (Commercial motorcycle) transport business such as accidents, crime, and the unsustainable nature of the Okada transport business in Nigeria. They indicated that the high rate of accident is attributed to lack of training and traffic education among motorcycle riders, impatience on the part of motorcycle riders, disregard for road traffic rules and regulations, and reckless riding by Okada riders. These effects lead to loss of lives of the Okada driver, passenger or pedestrians. Another negative effect of Okada business is the criminal activities which most Okada riders are involved in which include snatching of personal belongings such as bags, monies, mobile phones, abduction, killing and raping(Adetola, 2016; Ukwayi et al., 2013). (Festus & Nzokuru, 2014) found Okada business as unstable business in Nigeria and highly distracting to young youth and adult who should have been in skill training profession other than Okada business as a cheap source of livelihood. Therefore, it is difficult for them to be enrolled in specialized professional skilled training vocations such as auto mechanics repairs, brick laying,

(mason) plumbing, carpentry, painting, welding and fabrication, electrical installation and maintenance, agriculture, baking and many others. Though Okada business has many perceived benefits, however, the dangers associated with it outweighs its benefits which are just short term that can only sustain a young bachelor but cannot sustain a family. This also adversely affects the nation's economy because of its tendency to distract the youth needed in the productive sector as skilled trained workforce for economic growth.(Adetola, 2016; Asogun et al., 2016; Omolase et al., 2011), found a many difference of substances that are been used despite evidence of many serious health problems in connection to the administration of illegal psychotic substances. In their view, the increase in the use of these substances is as a result of their availability and their authorization for their usage. Asogun et al., (2016) also reported that in Nigeria, alcohol and other substance use seems to be the prevailing cause of death due to the use of alcohol by motorcycles (okada or kabukabu), (Asogun et al., 2016; Oteng-Ababio & Agyemang, 2015). They also stated an estimated 30% of road traffic accidents resulting from drug use with 32% of riders with license use alcohol and other substances in Nigeria(Omolase et al., 2011). Oteng-Ababio & Agyeman (2015) reported that due to government inactivity, prospective commuters are being forced to develop creative solution to address their daily travel needs as a result of socially unacceptable decline in organized public transport leading to a rapid growth in nonconventional transportation modes, such as the commercialization of the motorcycles popularly called Okada**.** They also indicated that though Okada has positively filled the gap left by a declining public sector, and provide easy maneuverability and demand-responsiveness but cannot escape blame for increasing road accidents, traffic management problems, and pervasive noise. Oteng-Ababio & Agyemang, (2015) noted that the growth of the Okada business is due to its low start-up capital, low maintenance costs, high youth unemployment, and general laxity in existing regulatory

frameworks, as well as its ability to provide door-to-door service to people with its easy access to poor roads, making it suitable for short distance trips that save time. Oteng-Ababio & Agyeman (2015) also stated that Okada transport system though has safety concerns however has not been regarded and adhered to by Okada riders making some governments to initiate various policies to deal with the issues and it related factors. They reported again that in Kenya, although the government gets taxes from imported motorcycles, there is a law that bans motorcycle from being used for commercial purposes in some areas in the capital. Also, in the national capital of Cameroon, apart from the outlawing of Okada, motorcycle taxi must be properly registered and licensed and operators should have a valid license, insurance and the use of the crash helmet as well as reflective jackets for both riders and passengers as a mandatory(Mason et al., 2004). Substance use is common among young people and commercial motorcycle operation widely(Mason et al., 2004; SAMHSA, 2009). hence there is the possibility that commercial motorcyclists are at a higher risk of substance use compared to the general population which might be because of competition among the motorcyclists to be able to pick as many clients as possible in a day, leading them to use substances that would alter their sense of danger to perform careless maneuvers, over-speed, and beat traffic. Isiaka & Saliu (2014) indicated that under normal situation, "Okada" bike carries one or two passengers at a time while in an abnormal situation, it carries more than two passengers at a time ranging from three to four or even five passengers at a time. Yakubu (2012) reported that motorcycle for commercial purposes which is also known as Okada; 'achaba', 'going', 'express' and many other names is an important business and a source of livelihood that generate income for the poor and which operators and their families depend on for survival(Crossa et al., 2010; Yakubu, 2012). Sanusi &Emmelin (2015) reported that road traffic injury is a great public health challenge

leading to the cause of disabilities and/or death globally with an estimate to be reduced by 30% in high-income countries by 2020, but increase significantly in low- and middle income countries (Department of Statistics and Informatics in Information, Evidence and Research Cluster of World Health Organization [WHO], 2008). They indicated that about 1.3 million deaths were recorded worldwide from road traffic injury in 2002, accounting for 41.2 million of all healthy life years lost and 2.7% of disability-adjusted life years (DALYs) globally (Cheng et al., 2015)They also reported that motorcycle crashes accounted for 54% of all road traffic injuries in Nigeria.

According to Mannering and Grodsky (1995) the chance of motorcycles being likely to be involved in road traffic accidents as five times higher than other vehicles and motorcyclists have about 20 times chance higher to have a severe injury than other automobile passenger(Mannering & Grodsky, 1995). They also stated Nigerian Highway Code, FRSC (2008) indicated motorcyclists have six times more risk of traffic injury and 80% likely to die or to be injured severely than motor vehicles passengers which over 90% of commercial motorcyclists do not have formal training and the required license. This do not make them comply with road rules and crash helmet law which contributes to accidents and injuries.

According to (Bambach et al., 2012) severe injuries and deaths caused by motorcyclists contribute considerably to road trauma in Australia, which was 30 times more probable to kill motorcyclists in 2007 and 37 times more probable to be severely injured than vehicle occupants by distance travelled(Henley & Harrison, 2015) . They also stated that there are a number of variables recognized that contribute to bike accidents, their severity and the severity of injury(s) caused by motorcyclists, including velocity, age, time of year, experience, alcohol, illicit substance use, time of day, conspicuity, behavioral risk, roadside environment and use of helmets(Cheng et al., 2015; Henley & Harrison, 2015; Lin & Kraus, 2009; National et al., 2017; RoSPA, 2017; Sheean et al.,

2008) .The rate of motorcycle use has been significantly increased in Australia, with an average annual increase in registrations of 7% between 1998 and 2007(Henley & Harrison, 2015). This increase rate was around 2.5 times higher than that for registrations of passenger vehicles which has led to an average annual increase in motorcyclist fatalities of 3% over this period.

CHAPTER THREE

METHODOLOGY

3.1 Study design

This study was a cross-sectional study carried out to determine the prevalence and examine factors associated with the abuse of tramadol among Okada riders in the Ellembelle District in the Western Region of Ghana.

3.2 Study Area

3.2.1 Population Size, Structure and Composition

This study was conducted in Ellembelle District in the Western region of Ghana with a projected population growth rate of 3.7 per cent based on the 2010 population census report from Ghana Statistical Service. The 2010 population and housing census of Ghana put the population of the Ellembelle district at 87,501 constituting 3.7 % of the total population in the Western Region. Males constitute 48.4 per cent and females represent 51.6 %. The 2013 population for the District is 92,857 projected from the 2010 census figures given an annual growth rate of 2 %. About 79.4 % of the population resides in rural and 20.6 % in urban areas. The district is located in the South part of the Western Region between longitude 2°05and 2°35 West and latitude 4°40 and 5°20 North. The district is bounded on the South by the Gulf of Guinea, North by Prestea Huni-valley, Wassa Amenfi West districts and North by Nzema East Municipality, East by the South of Nzema East Municipality and West by the Jomoro District. The indigenes are predominately Nzemas but other settlers notably, Fantes, Ashantes, Krobos, Ewes and Northerners are also located in the northern part of the district. The major occupations of the people in the district are farming, fishing and petty trading. Some others also are engaged in mining of kaolin, galamsey (small scale mining)

and coconut oil processing. Currently, many people have migrated to the district to work in the mining and gas processing companies. (Adamus Mining Resources, Ghana National Gas and ENI Gas Companies). The district has 2 major Nursing Training Institutions for the training of health professionals, 2 refugee camps for asylum seekers, 6 Senior High Schools, Technical and Vocational Training Institutions. The District has 4 major market days for trading which encourages the regular movement of traders and other people into the district. The District Health Administration (DHA) on behalf of the Ghana Health Service (GHS) has divided the administration of the district into 5 sub-districts for the purpose of health service delivery. These are Aiyinasi, New Aiyinasi (Aiyinasi North), Eikwe, Esiama and Nkroful Sub-Districts. The district has a District Health Director (DDHS) in charge of Health Service Administration and management for the Ghana Health Service. Political Administration in the district is headed by the District Chief Executive (DCE) and the Member of Parliament (MP) for Ellembelle constituency. The district has a director of education as the head of administration of educational activities for the Ghana Education Service, a director of fire service for Ghana Fire Service and district commander of police for the Ghana Police Service in charge of security issues and administration in the District. The district also has a district magistrate court with a presiding judge for legal administration(GSS, 2012).

3.2.1.1 Inclusion criteria

All Okada riders equal or who are 18 years and above living in the Ellembelle District.

All Okada riders of the age of 18 years or above who consent to be interviewed were interviewed for this study.

3.2.1.2 Exclusion criteria

All Okada riders below age 18 years living in the Ellembelle District.

All Okada riders who are 18 years or above but does not consent to be interviewed were excluded from the study.

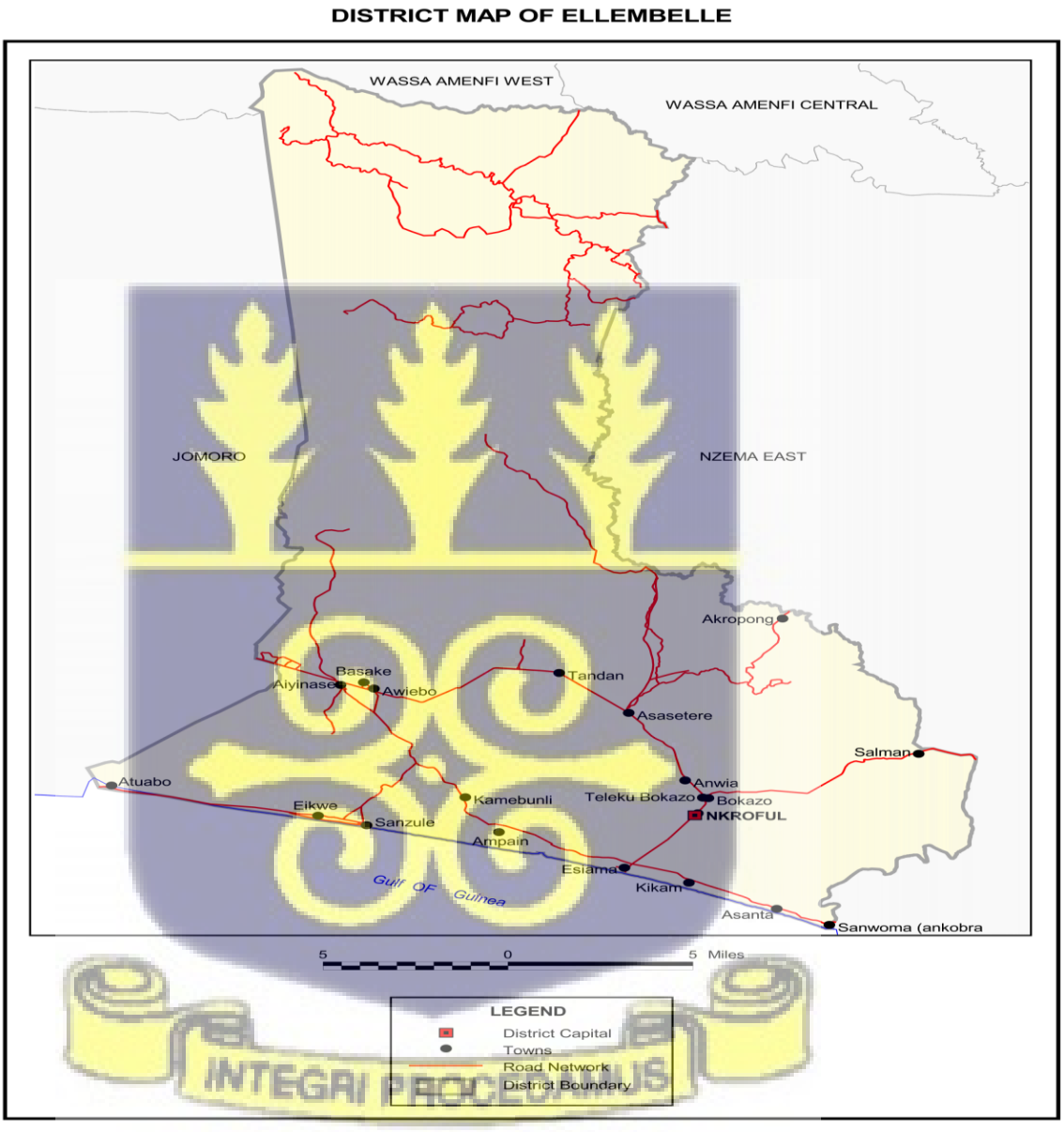

Figure 2: Map of Ellembelle District showing communities (Source: Ghana Statistical Service, GSS 2010)

3.2.2 Definition of Variables

Outcome variable: Prevalence of Tramadol Misuse or Abuse.

Explanatory variables include individual-related factors such as age, marital status, religion, environmental and accessibility of Tramadol. The reasons for tramadol abuse have been found to be pain reliever, energy booster, sexual enhancement and psychological well-being. The effect of tramadol abuse is emotional disturbance, drug addiction and unproductivity as a result of Okada accident leading to injuries, permanent disability and sometimes death of victims.

3.2.3 Sampling

3.2.4 Determination of sample size.

The sample size of the study was determined by adopting the formula Yamane as described below(Yamane, 1965).

$$n = \frac{Z^2_{1-\frac{\alpha}{2}} P_1(1 - P_1)}{(e)^2}$$

Where:

n = sample size

Z = Z statistic for a level of confidence (95% level of confidence used, therefore Z value is 1.96)

P = expected prevalence or proportion

e= precision: 5% margin of error (e=0.05)

$$= \frac{(1.96)^2\ 0.5(10.5)}{(0.05)^2}$$

= 384.16 (App: 385)

n = 384.16 (App: 385) respondents, the total sample size estimated to be 385 and considering 10% for contingency; (385*10%=38.5, App 39). Then, the sample size (n) = (385+39=424). The 10% non-response rate or refusal to participate due to unforeseen circumstances by respondents or may withdraw from the study, hence the need to cater for this margin. Therefore, a sample size of 424 Okada riders in the Ellembelle District will be selected for this study.

3.2.5 Sampling Method

Four Hundred and Twenty-four (424) Okada (Commercial motorcycle) riders were selected by proportional sample size allocation method from all the five sub-district divisions. For Administrative purposes, the Ghana Health Service has divided the district into five main sub-districts which are Aiyinasi, Nkroful, Esiama, Eikwe, and New Aiyinasi (Aiyinasi North) Sub-Districts. Firstly, the process began with a census in all communities known for Okada Transport business in each sub-district to know the number of Okada riders in each community since there was no available data on the population of Okada riders in the districts. A total of 424 participants were proportionally selected from a target population of 709 Okada riders in the district. The selection of respondents was by convenient (non-probability) sampling method where Okada riders were visited at their park or station at different days till all the 424 respondents were achieved based on the sub-district target distribution. The sampling method used was to ensure high response rate, time-saving and cost effectiveness. The study was conducted within a three months' period. Again, health facilities in the district were contacted to investigate available data on Tramadol and other drug-related cases and accident cases among Okada riders in the District. The Ghana Police Service of the Ellembelle District, National Road Safety Commission, Driver and Vehicle Licensing Authority (DVLA), and Food and Drugs Authority offices in the western

region were also contacted to review available data of drug-related crimes, violence, accidents and other relevant information for this study.

3.2.6 The selection of study population sample size distribution

This was by the use of simple proportion sample size allocation where the 424 participants were selected from a total of 709 Population of Okada in the Ellembelle district by proportion based on the result of the census conducted during this study. The total population of the Okada riders include those who were using motorcycle for Okada at the time of the study and those who served as spare riders. Based on the required size of 424, 60% of the total riders were expected to be sampled. There were five Sub-Districts (made up of different communities). Given the total number of Okada riders in the Sub-Districts, a 60% sample across was achieved.

Table 1: Target population and sampling size distribution

No.	Sub-district/Cluster	Number of Okada riders per sub-district (A)	Percentage of sample to be taken (B) B=(A/N*100)	Number of sample participants for each Sub-district (C) C=(N/A*B)
1	AIYINASI	208	59.6	124
2	NKROFUL	201	59.7	120
3	NEW AIYINASI	134	59.7	80
4	EIKWE	116	60.3	70
5	ESIAMA	50	60.0	30
	TOTAL	**709**	**59.8**	**424**

N=424

3.3 Data Collection Technique and Tools

An analytical cross-sectional survey was adopted using a well-structured open and closed-ended questionnaire as the major data collection tool. The questionnaire was administered by principal

researcher with the help of other recruited trained research assistants. The questionnaire was adopted from(Zabihi et al., 2011,) The questionnaire was pretested in Tikobo number 1 under Jomoro Municipality among 15 participants by four interviewers. All the issues that emanated from the pretesting were resolved before the actual data collection.

The interview was estimated to last for 30 minutes, however, some of them lasted more than the stipulated time due to busy nature of their work. There were a number of revisit or re-interviews. On average, participants took less than 30 minutes to complete the interview. Participants who were able to read and write were allowed to answer on their own. However, those who were not able to read and write were guided by research assistants who read and translated questionnaire information from the English language to Nzema, Fante or Twi.

3.3.1 Data Processing and Analysis

The questionnaire administered was retrieved, cleaned, coded and computed into Microsoft Office Excel 2016. The data was then exported to STATA Version 15 for analysis.

A descriptive statistical analysis was performed to describe and determine factors that contribute to the abuse of Tramadol among Okada riders in the Ellembelle District.

Cross-tabulation and Chi2 test association was employed to assess the factors that contributed to the abuse of Tramadol and reasons for tramadol use among Okada riders in the Ellembelle District. A Confidence level at 95% was observed, and $P<0.05$ (at 5% level of significance) was considered significant. Variables that were statistically significant were adjusted for in multiple logistic regression module.

The result of the study is presented in the tables, pie chart, and bar charts. Interpretation of all statistical analysis performed on all variables measured in the study and strength of association was tested on variables that were significant.

3.4 Ethical Clearance

Ethical clearance was sought from the Ghana Health Service Ethics Review Committee for approval of this study. Approval was also granted by the Regional and District Health Director of the Ghana Health Services, the Regional and District Police Commander of the Ghana Police Service, the Regional Director of the National Road Safety Commission and the Director of the Food and Drugs Authority in the western region for this study to be carried out in the district. Participants consent were sought for their approval for the study by using Informed Consent Forms which were signed by participants and used as a source of information for this study. Participants confidentiality and privacy was strictly assured and ensured in this study by considering and observing the need for confidentiality. This study was completely voluntary to participants own will and all participants were assured they were free to withdraw from the study anytime, before or during the course of the study. Participants were assured that their withdrawal from the study will not in any way affect them should any decide to decline from the study.

CHAPTER FOUR

4.0 RESULTS

4.1 Introduction

This chapter presents the results of the study on 424 Okada riders who were interviewed on tramadol abuse. It captures results of prevalence, factors influencing tramadol abuse, reasons for tramadol use and the association between some demographic characteristics and Tramadol abuse.

4.2 Socio-demographic Characteristics of Respondents

Table 2 presents results on Socio-demographic Characteristics of Respondents.

A total of 424 participants were interviewed with ages ranging from 17 – 40 years. The mean age was 25.1 (standard deviation, SD=5.3) and median age 24 years. The highest proportion of respondents were single 47.4% (n=201), whiles married respondents were 17% (n=72), 34.7% (n=147) were co-habiting, divorced and widows represent 0.5% (n=2) and 0.5% (n=2) respectively. With respect to education level, a higher proportion of respondents had attained Junior High School level education, 42% (n=178), whiles respondents with Senior High School level education was 33.3% (n=141). The proportion of Primary and tertiary education level of respondents were 14.6% (n=62) and 5% (n=21) respectively, whiles respondents with no education was 5.2% (n=22). Majority of the respondents were Christians 89.2% (n=378). Muslims accounted for 9.9% (n=42) whiles African Tradition was 0.9% (n=4). A total of 343 respondents were Nzema (80.9%), whiles Fante/Ashanti respondents were the second highest, (11.3%, n=48), and Ewes were 3.3% (n=14), Northerners and other ethnic groups were 1.9% (n=8) and 2.6% (n=11) respectively. With respect to previous occupation, 9.7% (n=41) were farmers, 4.8% (n=105) engaged in galamsey, 12% (n=51) were traders, 3.3% (n=14) were professionals, Artisans and

Security Personnel were 11.6% (n=49) and 3.5% (n=15) respectively whiles respondents who were unemployed was 35% (n=149).

Table 2: Socio-demographic characteristic of respondents

Variables	Frequency	Percentage
Age		
18-22	148	34.9
23-28	172	40.6
29-34	71	16.8
35-40	33	7.8
Religion		
Christian	378	89.2
Muslim	42	9.9
Traditionalist	4	0.9
Marital status		
Single	201	47.4
Married	72	17.0
Divorced	2	0.5
Widow	2	0.5
Co-habitation	147	34.6
Educational		
Never Attend	22	5.1
Primary	62	14.6
Junior high	178	42.0
Senior High	141	33.3
Tertiary	21	5.0
Ethnicity		
Nzema	343	81.0
Ashanti/Fante	48	11.3
Ewe	14	3.3
Northerner	8	1.8
Others	11	2.6
Previous Occupation.		
Farming	41	9.7
Galamsey	105	24.8
Trading	51	12.0
Professional	14	3.3
Artisan	49	11.6
Unemployed	149	35.1

Security	15	3.5
Period of Okada business		
1-5 months	31	7.3
6-11 months	94	22.1
1-2 years	155	36.6
3 years and above	144	34.0

4.3 Prevalence of Tramadol abuse among Okada riders

Figure 3 presents the prevalence of Tramadol use among respondents. The prevalence of tramadol abuse in the population under study is 24.3% out of the total of 424 Okada riders sampled. This means 24.3% (n=103) of the respondents have ever used Tramadol whereas 76% (n=321) have never used Tramadol. The highest proportion of Tramadol use was among the age group 23-28 years (35.9%, n=37) whiles those in the age group 17-22 years constitute the second highest proportion (33.0%, n=34).

Table 3 presents results on Tramadol abuse by socio-demographic characteristics of respondents. Respondents aged 35 years and above were the least users of tramadol with a proportion of 11.7% (n=12). Among non-Tramadol users, the highest proportion (42.1%, n=135) was age group 23-28 years and those aged from 17-22 years was 35.5% (n=144).

In terms of religion, the majority of the tramadol users 84.5% (n=87) were Christians, whiles the Muslim proportion was 14.6% (n=15). Also, the proportion of tramadol users among respondents who were single was 46.6% (n=48) whereas co-habitation (those living with fiancées or girlfriends) with 30.1% (n=31) whiles married respondents accounted for 21.4% (n=22) With respect to educational status, respondents who had attained Junior High School level of education had the highest proportion of tramadol abuse 36.9% (n=38) whiles respondents with Senior High School educational level was 33% (n=34). In terms of ethnicity, majority of the tramadol users were found to be Nzemas with 85.4% (n=88), followed by Ewes and Northerners with 4.9% (n=5)

each, and the least being other nationalities with 0.2% (n=1). In terms of ethnicity and non-tramadol users, majority 79.4% (n=255) of the respondents were Nzema whiles the second-highest percentage were Fanti/Ashanti with 13.7% (n=44) and Ewe and Northerners recording 2.8% (n=9) and 0.9% (n=3) respectively.

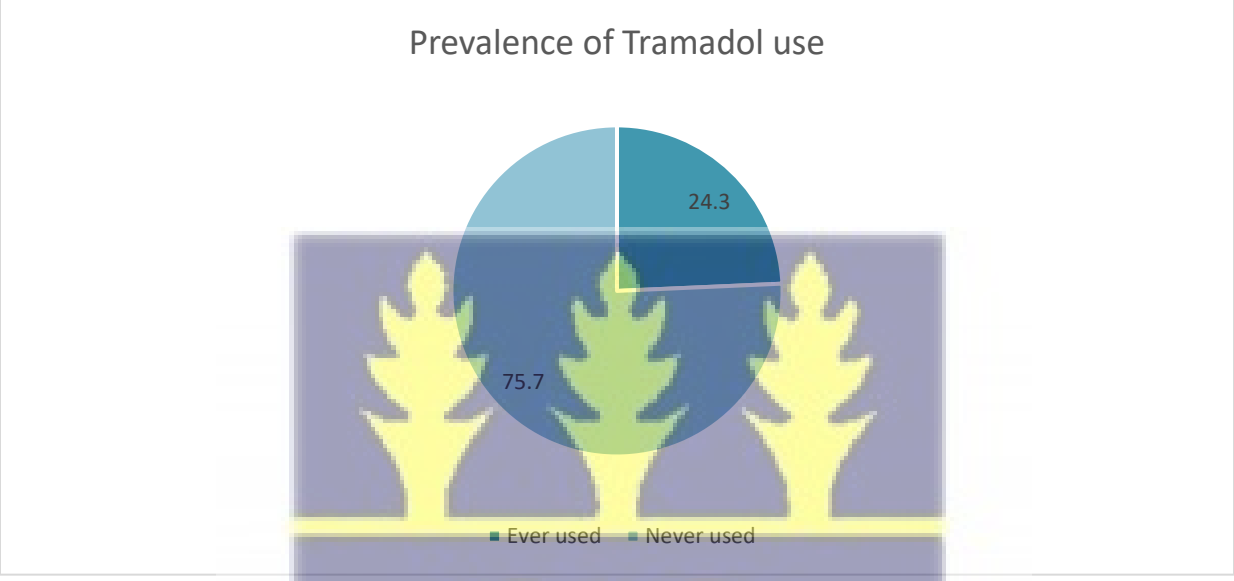

Figure 3: Prevalence of Tramadol use or misuse

Table 3: Socio-demographic characteristics and use of Tramadol

Variables	Frequency (%)	Tramadol use (%)	Non-Tramadol use (%)
Age			
18-22	148 (34.9)	34 (33.0)	114 (35.5)
23-28	172 (40.6)	37 (35.9)	135 (42.1)
29-34	71 (16.8)	20 (19.4)	51 (15.9)
35+	33 (7.8)	12 (11.7)	21 (6.5)
Religion			
Christian	378 (89.2)	87 (84.5)	291 (90.7)
Muslim	42 (9.9)	15 (14.6)	27 (8.4)
Traditionalist	4 (0.9)	1 (1.0)	3 (0.9)
Marital status			
Single	201(47.4)	48 (46.6)	153 (47.7)
Married	72 (17.0)	22 (21.4)	50 (15.6)
Divorced	2 (0.5)	1 (1.0)	1 (0.3)
Widow	2 (0.5)	1 (1.0)	1 (0.3)
Co-habitation	147 (34.7)	31 (30.1)	116(36.1)
Educational status			
Never attended	22 (5.9)	11(10.7)	11 (3.4)
Primary	62 (14.6)	16(15.5)	46 (14.3)
Junior high	178(42.0)	38 (36.9)	140 (43.6)
Senior High	141(33.3)	34 (33.0)	107 (33.3)
Tertiary	21 (4.9)	4 (3.9)	17 (5.3)
Ethnicity			
Nzema	343(80.9)	88 (85.4)	255 (79.4)
Fanti/Ashanti	48 (11.3)	4 (3.9)	44 (13.7)
Ewe	14 (3.3)	5(4.9)	9 (2.8)
Northerner	8 (1.8)	5(4.9)	3 (0.9)
Others	11 (2.6)	1(1.0)	10 (3.1)
Previous occupation			
Farmer	41 (9.7)	6 (5.8)	35 (10.9)
Galamsey	105 (24.8)	48 (46.6)	57 (17.8)
Trading	51 (12.0)	7 (6.8)	44 (13.7)
Professionals	14 (3.3)	3 (2.9)	11 (3.4)
Artisan	49 (11.6)	9 (8.7)	40 (12.5)
Unemployed	149 (35.1)	28 (27.2)	121 (37.7)
Others	15 (3.5)	2 (1.9)	13 (4.1)
Total	**424 (100)**	**103 (100)**	**321 (100)**

4.4 Association between background characteristics of respondents and Tramadol abuse

Table 4: presents results on the bivariate association between background characteristics of respondents and Tramadol abuse to determine the predictors of Tramadol abuse. Statistically, there was no association between age of respondents and Tramadol abuse. (X^2=4.0581, P=0.255). With regards to ethnicity, the highest proportion of tramadol use was among the Nzemas (85.4%, n=88) as compared to Ewes 4.9% (n=5), Fanti/Ashantis 3.9% (n=4) and Northerners 4.9% (n=5). This association was statistically significant (X^2 =7.74, P=0.003). With regards to the previous occupation of respondents, respondents who had worked in the field of galamsey were found to have recorded the highest proportion of tramadol use 46.6% (n=48) compared to farmers (5.8%, n=6), professionals (2.9%, n=3), and unemployed respondents (27.2%, n=28). The association was statistically significant (X^2=35.80, P=0.01). Additionally, respondents who got to know of tramadol through friends had the highest proportion of tramadol use 72.8% (n=75) compared to respondents who got to know tramadol through the media 16.5% (n=17) and through prescription 7.8% (n=8). The test of association was found to be significant (X^2=37.12, P=0.01). The respondents who knew of someone's usage of tramadol had the highest proportion of tramadol use (88.4%, n=91) compared to respondents who did not know anyone using tramadol 11.7% (n=12). The association was found to be statistically significant (X^2=24.57, p=0.01). The use of tramadol was found to be proportionately high among respondents who had tramadol from drug peddlers 63.1% (n=65) compared to respondents who got tramadol from licensed chemical shops 19.4% (n=20), hospital 10.7% (n=11), pharmacy 2.9% (n=3) and friends 3.9% (n=4). The test of association was statistically significant (X^2=381.39, P=0.01).

Furthermore, the use of tramadol was high among respondents who took it with alcohol 68% (n=70) compared to energy drinks 19.4% (n=20) and marijuana 3.9% (n=4). Lastly, the highest

proportion of tramadol use was found among respondents who had ever used an illicit drug 72.7% (n=75) as compared to those who have never used any illicit drugs 27.3 (n=28)

Table 4: Chi-square association between background characteristics of respondents and Tramadol Abuse

Variables	Frequency (%)	Tramadol use (%)	Non-Tramadol use (%)	X^2	P-value
Age					
18-22	148 (34.9)	34 (33.0)	114 (35.5)	4.0581	0.255
23-28	172 (40.6)	37 (35.9)	135 (42.1)		
29-34	71 (16.8)	20 (19.4)	51 (15.9)		
35+	33 (7.8)	12 (11.7)	21 (6.5)		
Religion					
Christian	378 (89.2)	87 (84.5)	291 (90.7)	3.3153	0.191
Muslim	42 (9.9)	15 (14.6)	27 (8.4)		
Traditionalist	4 (0.9)	1 (1.0)	3 (0.9)		
Marital status					
Single	201 (47.4)	48 (46.6)	153 (47.7)	3.8121	0.432
Married	72 (17.0)	22 (21.4)	50 (15.6)		
Divorced	2 (0.5)	1 (1.0)	1 (0.3)		
Widow	2 (0.5)	1 (1.0)	1 (0.3)		
Co-habitation	147 (34.7)	31 (30.1)	116(36.1)		
Educational status					
Never attended	22 (5.9)	11(10.7)	11 (3.4)	8.8849	0.064
Primary	62 (14.6)	16(15.5)	46 (14.3)		
Junior high	178 (42.0)	38 (36.9)	140 (43.6)		
Senior High	141(33.3)	34 (33.0)	107 (33.3)		
Tertiary	21 (4.9)	4 (3.9)	17 (5.3)		
Ethnicity					
Nzema	343(80.9)	88 (85.4)	255 (79.4)	17.7438	0.003
Fanti/Ashanti	48 (11.3)	4 (3.9)	44 (13.7)		
Ewe	14 (3.3)	5(4.9)	9 (2.8)		
Northerner	8 (1.8)	5(4.9)	3 (0.9)		
Others	11 (2.6)	1(1.0)	10 (3.1)		
Previous occupation					
Farmer	41 (9.7)	6 (5.8)	35 (10.9)	35.804	0.001
Galamsey	105 (24.8)	48 (46.6)	57 (17.8)		

Trading	51 (12.0)	7 (6.8)	44 (13.7)		
Professionals	14 (3.3)	3 (2.9)	11 (3.4)		
Artisan	49 (11.6)	9 (8.7)	40 (12.5)		
Unemployed	149 (35.1)	28 (27.2)	121 (37.7)		
Others	15 (3.5)	2 (1.9)	13 (4.1)		
Period of Okada business					
1-3 months	31 (7.3)	4 (3.9)	27 (8.4)	3.7202	0.59
6-11 months	94 (22.2)	23 (22.3)	71 (22.1)		
1-2 years	155 (36.6)	43 (41.8)	112 (34.9)		
3 years plus	144 (34.0)	33 (32.0)	111 (34.6)		
Heard of tramadol					
Yes heard	414 (97.6)	103 (100)	311 (96.9)	6.0312	0.11
Never heard	10 (2.4)	0 (0.0)	10 (3.1)		
How you know Tramadol					
Friends	233 (55.0)	75 (72.8)	158 (49.2)	37.1836	0.001
Curiosity	69 (1.4)	0 (0.0)	6 (1.9)		
Prescribed	13 (3.1)	8 (7.8)	5 (1.6)		
Media	165 (39.0)	17 (16.5)	148 (46.1)		
Others	7 (1.7)	3 (2.9)	4 (1.2)		
Somebody used/using it					
I know	291 (68.6)	91 (88.4)	200 (62.3)	24.5689	0.001
I do not know	133 (31.4)	12 (11.7)	121 (37.7)		
An additional drug used with tramadol					
Alcohol	294 (69.3)	70 (68)	224 (69.8)	14.5175	0.013
Marijuana	41 (9.7)	4 (3.9)	37 (11.5)		
Cocaine	13 (3.0)	4 (3.9)	9 (2.8)		
Energy drinks	47 (11.1)	20 (19.4)	27 (8.4)		
Others	29 (6.8)	5 (4.9)	24 (7.5)		
Ever used illicit drugs					
Yes used	270 (63.7)	75 (72.7)	195 (60.8)	4.91	0.027
Not used	154 (36.3)	28 (27.3)	126 (39.2)		
Total	**424**	**103 (100)**	**321 (100)**		

4.5 Source of Tramadol and length of use among participants

Majority (63.1%) of the participants got Tramadol from drug peddlers out of those who had ever used or abused the drug. Licensed chemical shops emerged as the second source where Tramadol

was sourced forming 19.4%. About 10.7% also accesses the drug from the hospital. It was interesting to know that about 4% of them had received Tramadol from their friends.

On how long they have or had used Tramadol, out of the 103 participants, 21% of had used Tramadol in the last seven days. This was followed by 4.9% participants who had used the drug in the past one to three months. However, there was about 34% of them who had not used it in the last six months to a year.

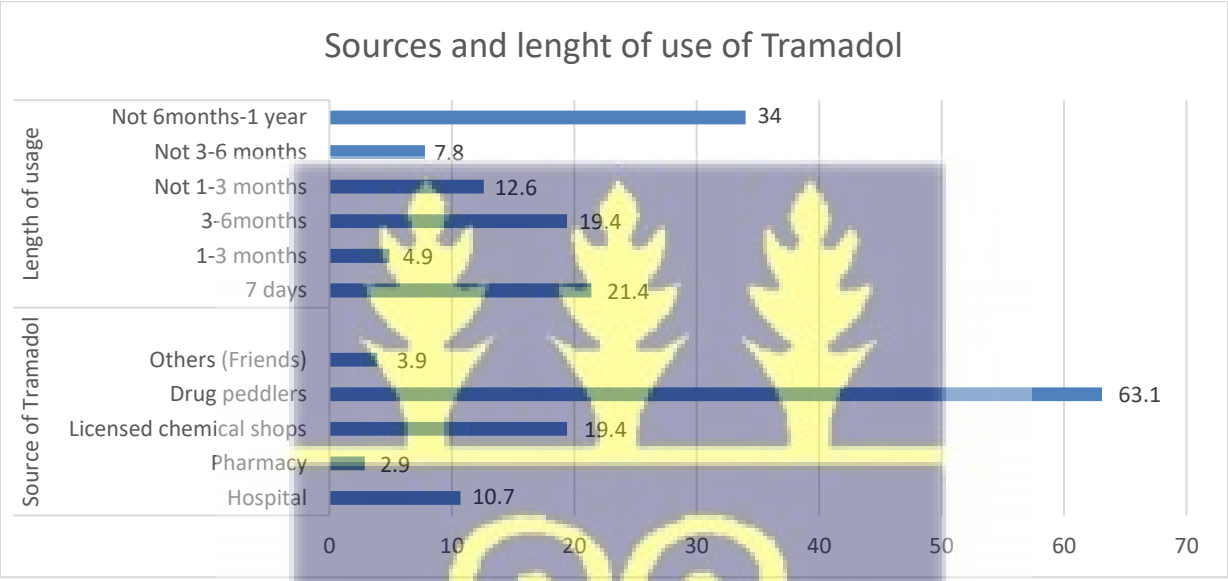

Figure 4: Sources and length of use of Tramadol

4.6 Multivariable analysis of background characteristics and Tramadol abuse.

This section presents analysis of multivariable association between background characteristics and Tramadol abuse (Table 5).

With regards to educational status, respondents who have had Junior High School education had a 62% reduced odds of tramadol abuse compared to those without any formal education. From the p-value, this is not statistically significant (OR=0.38, CI= 0.14-1.09, P=0.07). Senior High School

respondents had 71% reduced odds of tramadol abuse compared to none formal education respondents. From the p-value, this is statistically significant (OR=0.29, CI=0.12-0.75, P<0.01). After controlling for other factors, Senior High School respondents had 71% reduced odds of tramadol abuse compared to Junior High School educational level respondents. Although from the p-value, statistically, there is no significant association, however, there is a higher proportion of Junior High School level education respondents abusing Tramadol (AOR=0.66, CI=0.10-34.9, P=0.66). In terms of marital status, married respondents had 49% increased odds of tramadol abuse compared to single respondents. From the p-value, this is not significant statistically (OR=1.49, CI=0.79-2.80, P=0.22). Respondents who were Ashanti/Fanti had 56% increased odds of tramadol abuse as compared to Nzemas. From the p-value, this is not statistically significant. (OR=1.56, CI=0.48-5.12, P=0.46). Furthermore, Ewes were determined with 50% increased odds compared to Ashanti/Fanti. From the p-value, this is statistically significant. (OR=6.50, CI=1.52-27.9, P=0.012). Additionally, respondents who had engaged in galamsey had 25% increased odds of tramadol abuse compared to respondents who were farmer. (OR=4.25, CI=1.54-11.7, P=0.05). Previous occupation of respondents who had engaged in trading had 4% decreased odds of tramadol abuse compared to those who had engaged in galamsey. From the p-value, this is statistically significant. (OR=0.96, CI=0.27-3.40, P=0.005). Rather, professionals had 98% increased odds of tramadol abuse compared to those involved in trading. From the p-value, this is not statistically significant (OR=1.96, CI=0.40-9.56, P=0.40) From the P-value, this is not statistically significant. Thus, respondents who were professionals had 99% increased chances of abusing tramadol. Artisans had increased odds of tramadol abuse compared to professionals (OR=1.00, CI=0.28-3.57, P=0.99). This is not significant statistically. This means there is no difference between artisans and professionals in terms of Tramadol abuse. In terms of the source

of tramadol, respondents who had tramadol from the pharmacy had 94 increased odds of tramadol abuse as compared to those who had tramadol from the hospital. From the p-value, this is not statistically significant. (OR=6, CI=0.22-16.2, P=0.287). After controlling for other variables, respondents who had tramadol from the pharmacy had 98% reduced odds of tramadol abuse than those who had tramadol from the hospital. This is not significant (AOR=0.02, CI=0.00-1.26, P=0.07). Thus, respondents who had tramadol from the pharmacy are 98% less likelihood of abusing tramadol. Additionally, respondents who had tramadol from the licensed chemical shop had 91% increased odds of tramadol abuse compared to respondents who had tramadol from the pharmacy. From the p-value, this is not significant. (OR=9, CI=0.75-107.4, P=0.08). After adjusting for confounders, respondents who had tramadol from the licensed chemical shop had reduced odds of tramadol abuse compared to those who had tramadol from the Hospital (AOR=0.51, CI=0.06-4.04, P=0.53). Apparently, respondents who had tramadol from drug peddlers had increased odds of tramadol abuse compared to chemical shops (OR=14, CI=1.34-146.4, P=0.03). Thus respondents who had tramadol from drug peddlers had an 86% likelihood of abusing tramadol compared to those who had tramadol from the licensed chemical shop. Lastly, respondents who had tramadol from the ghettos had increased odds of tramadol abuse than those who had tramadol from drug peddlers (OR=3, CI=0.08-107.5, P=0.55). Thus, respondents who had tramadol from the ghetto have a 97% increased chance of abusing tramadol.

Table 5: Multivariable analysis showing association between socio-demographic and other factors of Tramadol abuse

Tramadol Abuse	Odds Ratio (95% Conf.)	P>z	Adjusted Odds Ratio (95% Conf.)	P>z
Age				
18-22	**Ref**	1	1	1
23-38	1.04 (0.58-1.86)	0.897	0.47(0.08-2.85)	0.414
29-34	1.54 (0.77-3.10)	0.217	0.94(0.04-23.26)	0.97
35-40	2.14 (0.90-5.05)	0.082	0.64(0.03-14.67)	0.783
Religion				
Christian	**Ref**	1	1	
Moslem	1.35(0.63-2.88)	0.435	0.21(0.03-1.44)	0.112
Traditional	1.44(0.15-14.06)	0.753	-	-
Education				
Primary	**Ref**	1	1	
Junior High School	0.38(0.14-1.09)	0.073	0.18(0.30-53.10)	0.182
Senior High School	0.29(0.12-0.75)	0.001	0.66(0.10-34.94)	0.662
Tertiary Education	0.34(0.13-0.13)	0.027	0.81(0.07-28.96)	0.805
Primary	0.24(0.05-1.07)	0.061	0.34(0.00-8.53)	0.339
Marital Status				
Single	**Ref**	1	1	
Married	1.49(0.79-2.80)	0.215	3.89(0.18-82.46)	0.383
Divorced	-	-	-	-
Widow	-	-	-	-
Co-habitation	0.81(0.46-1.42)	0.462	0.52(0.10-2.65)	0.434
Ethnicity				
Nzema	**Ref**	1	1	1
Ashanti/Fanti	1.56(0.48-5.12)	0.464	-	-
Ewe	6.50 (1.52-27.9)	0.012	-	-
Northerner	-	-	-	-
Other Nationalities	-	-	-	-
Previous Occupation				
Farming	**Ref**	1	1	1
Galamsey	4.25(1.54-11.7)	0.005	0.39(0.02-9.45)	0.561
Trading	0.96(0.27-3.40)	0.950	-	-
Professional (teacher, nurse, etc)	1.96(0.40-9.56)	0.403	-	-
Artisan	1.00(0.28-3.57)	0.994	0.37(0.01-19.05)	0.622
Unemployed	1.18(0.42-3.35)	0.754	2.12(0.08-54.84)	0.650
Others (Security)	1.11(0.19-6.43)	0.909	-	-
Other drugs used with tramadol				
Alcohol	**Ref**	**1**	**1**	**1**

Marijuana	-	-	-	
Cocaine	-	-	-	-
Energy drinks	1.35(0.45-4.08)	0.592	0.42(0.06-2.81)	0.020
Others	-	-		
Tramadol Source				
Hospital	**Ref**	1	1	1
Pharmacy	6.00 (0.22-165)	0.287	0.02(0.00-1.26)	0.065
Chemical Shop	9.00 (0.75-107.4)	0.082	0.51(0.06-4.04)	0.525
Drug Peddle	14.0 (1.34-146.4)	0.028	-	-
Ghetto Friends	3.00 (0.08-107.5)	0.547	-	-

P-value computed at 5% Confidence interval

4.7 Reasons underlying the use of Tramadol among respondents

Figure 5 presents results on reasons for Tramadol use among respondents. Out of 103 respondents of Tramadol users, a proportion of 42.7% (n=44) used Tramadol as an energy booster for hard work whiles 29.1% (n=30) also used Tramadol as a sexual booster to prevent premature ejaculation and to prolong sexual pleasure. The proportion of Tramadol used for pain relievers accounted for 17.5% (n=18) while Tramadol used for euphoric effect or 'to feel high'' was 7.8% (n=8).

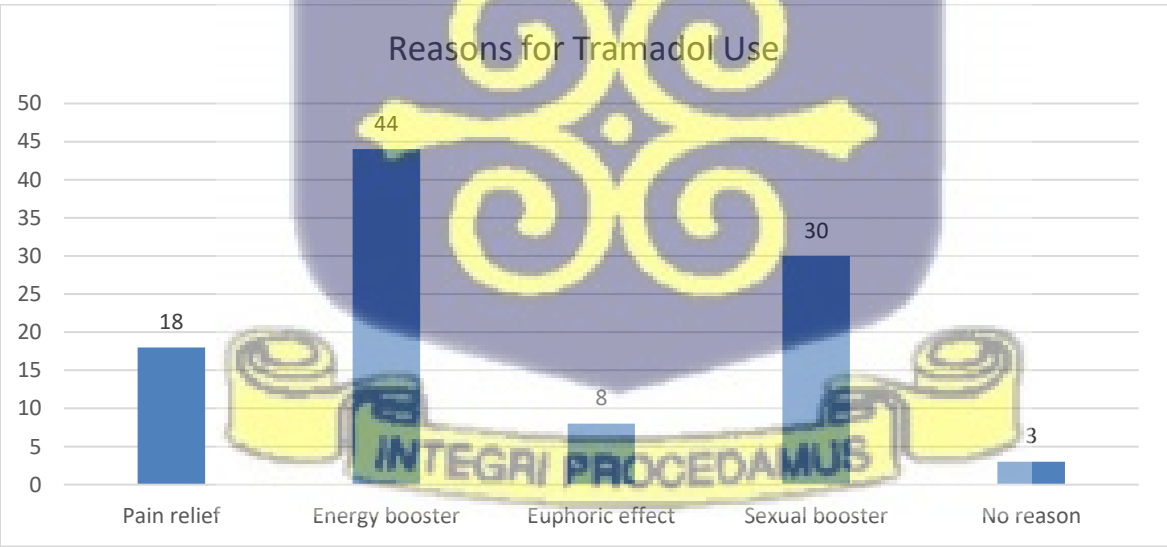

Figure 5: Reasons underlying the use of Tramadol among respondents

CHAPTER FIVE

DISCUSSIONS

5.1 Introduction

This chapter focuses on the discussion of the study findings and comparing the study findings with reviewed relevant literature in relation to the objectives of the study.

5.1.1 Prevalence of tramadol and associated demographic characteristics

The aim of this study was to investigate factors associated with the abuse of Tramadol among Okada riders in the Ellembelle District in the Western Region of Ghana. The prevalence of Tramadol use in the Ellembelle District was 24.3% among the Okada riders with the highest proportion within the age groups 18-22 years and 23-28 years. The finding from the current study supports a study conducted in Accra by Danso & Anto (2021), which reported 24.9% prevalence of Tramadol abuse among commercial drivers. This is consistent with a study Fawzi (2011) which reported that about 30% of young men aged 14-30 years in Gaza became addicted to prescribed painkillers like Tramadol which was used to alleviate the stressful life in the besieged Palestinian territory. The study by Hassan (2018) also strongly support this finding where he reported that in Kpandai District of Upper West Region of Ghana, the youth have become addicted to Tramadol by using it in large doses and also mixing it with some energy drinks such as Storm, 5star, Rush and many others to boost their energy without medical prescription. This study result found that many of the tramadol users were single and cohabiting with their sexual partners and with Junior High School level of education. This is in consistent with a previous study by Taremian (2005) conducted among students in Tehran, the capital city of Iran which predicted a 5% increase rate of tramadol abuse in the near future (Taremian et al.,

2008). Elliason et al. (2018) also argue that the abuse of Tramadol and other illicit drugs are common among students, other academicians or professionals due to academic stress, poor academic performance, social and economic deprivation. From the geographical background of the study, a large proportion of the tramadol users were Nzema followed by the Ewes and people from the Northern part of Ghana. This is also consistent with a study that was conducted in Nigeria which indicated people quite often begin to abuse drugs in their youthful age (Ikoh et al., 2019). This could be as a result of poverty, social changes, peer influences, economic activities of the local area, and cultural attitudes of the local communities towards the particular drug (Elliason EK, Sandow B, 2018). The Nzema are the indigenes of the Ellembelle district where Galamsey activities (Illegal mining), fishing, and farming take place. Galamsey and fishing attract many different people across Ghana and neighbouring countries. The activities involved in this illegal mining, fishing and farming require a lot of energy leading to fatigue. Hence the reason to depend on tramadol as a pain reliever which leads to continuous use, addiction and abuse.

5.2 Factors Associated with Abuse of Tramadol

The prevalence of Tramadol was 24.3% (103) having ever used or are using tramadol while 321(75.7%) of them have not used tramadol. In all, 98.5% of the Okada riders had heard about tramadol while a small percentage (1.5%) of these riders had never heard about tramadol. This is in accordance with other studies reviewed that people abuse drugs because of curiosity. Many of the respondents who were tramadol users (46.6%) were formerly working in Galamsey before joining the Okada business followed by 27.2% of them who were unemployed prior to joining the Okada business. Nearly half of the tramadol users (48.5%) do other activities like security services

in addition to Okada business with a high percentage (22.9%) of them doing farming in addition to Okada business.

The source of information on tramadol recorded a high proportion of respondents 72.8% who were using tramadol indicated they heard about the drug from their friends whiles the electronic media such as radio, television and the internet also contributed to Tramadol information dissemination. Consequently, these findings are in support of the study by Elliason and colleagues (2018), people abuse drugs for various reasons which range from curiosity, influence by advertisement or peer influence. Many of the Okada riders reported they have been using tramadol for the last six months but, less than a year while others confirmed using tramadol within one week. These findings are in connection with the study conducted by Fawzi (2011) in Egypt which found tramadol abuse and other drugs as not a new phenomenon in the Egyptian society and the trend appeared to be increasing.

5.3 Reasons for tramadol use among Okada Riders

This present study found that many of the Okada riders, who have ever used Tramadol, 42.7% used Tramadol as an energy booster for hard and longer period of time without being tired. Others too indicated they used Tramadol for psychological excitement. This also supports a qualitative finding from a study that was conducted in Kumasi among commercial vehicle operators by Peprah et al., (2020)), indicating that people abuse drugs because of stress or fatigue associated with day to day occupation or employment type (Peprah et al., 2020). Also, from the above study study, a participant asserted that "with Tramadol, I ride like a jaguar", This goes on to corroborate the finding from the current study on the use of Tramadol as sexual booster. In a recent study conducted by Danso & Anto, (2021) also reported that pain relief and sexual enhancement were the major reasons why drivers abused the use of Tramadol (Danso & Anto, 2021). In a related

study by Fawzi (2011), it also reported that people especially the youth and middle-aged groups massively use tramadol as a remedy for premature ejaculation and extended orgasm to increase sexual pleasure which is also in line with the findings of this study. The study found the majority, 68% of the respondents used tramadol with additional substances such as alcohol, energy drinks and marijuana which corroborates the findings from a study by Hassan (2018), which reported that the youth in Kpandai District of Upper West Region of Ghana use tramadol in large doses and they mix it with some energy drinks such as Storm, 5star, Rush and many others in order to boost their energy.

The study further found that the source of Tramadol supply to the youth were drug peddlers and licensed chemical shops usually called Over-the-counter which is also in support of a similar study by Bashirian et al., (2014). The above study argued that the release of tramadol by Iranian pharmaceutical market as an alternative analgesic to injectable diclofenac after it had been prohibited with no legal restriction on its sale and distribution made tramadol cheap and easily accessible among Iranians. Hence, its consumption spread fast in the society especially for symptomatic pain relief coupled with competition among physicians, particularly general practitioners to treat patients for moderate to severe pain.

This recent study also revealed that majority, 72.7% of Okada riders have ever used other drugs like alcohol and marijuana before they started to use tramadol while 27.3%. This agrees with a study by Bashirian et al., (2014) which indicated that substance abuse is a predictable process which sometimes begins with recreational use like alcoholic beverages, cigarettes, opioid analgesics which then progresses to addictive use like marijuana, cannabis and other stimulants. Young et al., (2014) also strongly support this finding where they reported among other things that majority of tramadol abusers (97%) had a history of other substance abuse like codeine, cocaine,

alcohol or marijuana. Hang-Tsong Liu et al. (2015), reported in a study conducted on alcohol-related hospitalization of adult motorcycle riders that Motorcyclists are highly susceptible participants in the street who suffer serious and often fatal injuries(Liu et al., 2015). They also stressed that dangerous drinking was regularly and strongly correlated with greater frequencies of visit and hospitalization to the emergency department. Heydari et al., (2016) revealed that alcohol and illicit drug use, risk-taking behaviors, roadside environment and non-helmet use contribute to motorcycle crash or accidents, their severity and the severity of the motorcyclist injuries (Heydari et al., 2016).

Among the 103 respondents interviewed who have ever used tramadol, this study found that a greater proportion (43%) used tramadol as energy booster for hard work which might have been as a result of the strength-absorbing nature of the Okada business as a result of sitting on the motorcycle for long hours and also plying the poor road network of the area. Furthermore 30% of the Okada riders who have ever used tramadol claim to use it for sexual enhancement and gratification. About 17% of respondent used tramadol as a pain relief which might have also been as a result of the difficult nature of the business and also for medical reasons resulting from a motorcycle accident. For the use of tramadol for euphoric effect and mood enhancement, this study found 8% of the respondents who have ever used tramadol, have used the drug for the purpose of feeling high and enhancing their personal ego. The study found only 1% of respondents who have ever used tramadol or using tramadol for psychological well-being.

5.4 Socioeconomic importance and effect of Okada business on the nation

Comparing this study to a study conducted by (Oteng-Ababio & Agyemang, 2015), the findings of this study confirm or collaborates with their findings which indicated that emergence of Okada business has served as a source of employment for the youth to earn their daily living due to lack

of available job opportunities for the youth in some parts of the world (Oteng-Ababio & Agyemang, 2015). In their view, although Okada business has served as an avenue for revenue generation for the government from registration of motorcycles and licensing for motorcycle riders, it has also caused a lot of harm with a negative impact on Okada riders themselves and the nation at large. The higher rate of reported accidents among Okada riders has a negative impact on the nation's economy by providing medical treatment for causalities.

This study found that 24.8% of respondent were previously working as 'galamsey' or illegal mining operators, and 35.1% been unemployed but only 3.3% and 11.6% were working as professionals such as teacher, nurse etc. and artisan (carpentry, maison etc). These findings indicated that majority of the youth are engaged in fast money-making jobs such as galamsey and Okada business and do not want to learn a vocation which is a lifetime guarantee for gainful employment in the future. This supports a study reported by Oteng-Ababio & Agyeman, 2015; which stated that Okada business is an unstable business in Nigeria which is highly distracting to young youth and adult who should have been in skill training profession other than Okada business as a cheap source of livelihood which makes it difficult for them to be enrolled in specialized professional skilled training vocations such as auto mechanics repairs, bricklaying, (mason) plumbing, carpentry, painting, welding and fabrication, electrical installation and maintenance, agriculture, baking and many others. Though Okada business has many perceived benefits, however, the dangers associated with it outweighs its benefits which are just short term that can only sustain a young bachelor but cannot sustain a family. This also adversely affects the nation's economy because of its tendency to distract the youth needed in the productive sector as skilled trained workforce for economic growth. The youth are the pivot of development for every nation

and as most of the youth in the Ellembelle District are distracted by this Okada transport business implies the future of the country skilled and vocational; the workforce is at stake.

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This section presents a summary of the findings of this study and recommendations for necessary interventions to curb the increasing menace of illicit drug use among the youth in Ghana.

6.2 Conclusion

The study found the prevalence of Tramadol use in the Ellembelle District at 24.3% out of the sampled population. In addition, the factors that contribute to the misuse and abuse of Tramadol are related to some socio-demographic characteristics such as age, marital status, religion, educational background, and previous occupation. 103 of the respondents representing 24.3% of Okada riders were found using or have ever used tramadol with the highest proportions recorded within the age group of 23-28 years, singles, Christians by religion, Nzema by tribe and had attained Junior High school educational level.

Many of the Okada riders heard and others subsequently learnt to use Tramadol from their friends. Okada riders who use Tramadol, have been using it for the last six months but less than a year. The main supply of tramadol is drug peddlers followed by licensed drug shops. It is also observed that most Okada riders use tramadol as an energy booster, sexual enhancement and a pain reliever. Additionally, most Okada riders who had ever used tramadol had also used other drugs like alcohol, marijuana and other substances.

Based on the findings of this study indicated an increased rate of Tramadol and other substances abused in Ghana by the majority of the youth as a result of access to tramadol without medical prescription. The study concludes that the misuse and abuse of Tramadol in the Ellembelle District a combination of modifiable and non-modifiable socio-demographic and community-level factors affect. Therefore, interventions should be targeted at these modifiable factors (e.g. education) that influence the youth in using Tramadol.

In this regard, specific recommendations are made below could be averted by considering all the recommendations presented based on the study findings.

6.7 Recommendation

Findings of this study recommend:

- In partnership with community leaders, the Ellembelle District FDA, and the local Pharmacy Council should restrict the sale of Tramadol by drug peddlers in the communities and ensure to enforce this as a law and punish those who would be found as culprits.
- Leveraging the partnership mentioned above, restrictions should be placed against the display of Tramadol on the shelves of Community Pharmacies and Over-the-counter drug outlets and ensure strict enforcement and distribution as control measure.
- Access to Tramadol from Community pharmacies, and Over-the-counter shops should be strictly upon prescription by a medical officer.
- The label on Tramadol products should be changed and the addictive tendencies should be provided to caution and ensured that it would only be sold with prescription.
- The Ghana health service specifically the psychosocial/mental health departments of the Ellembelle District in partnership with the local information service department should

educate the youth on the effect of Tramadol on the mental health of the people. The education should also tackle the negative effects of using sexual and energy boosters as formed the apex of the reasons for using Tramadol in the population under study.

Those abusing the drug may not be aware of the dire consequences or effects of the substance. Providing the necessary education and awareness may help curb the situation.

- Finally, this study recommends government intervention for youth development programs aimed at training the youth who are engaged in Okada business.

6.3 Limitations of the study

The limitation of the study was that information sourced from respondents may not reflect the real issues on the ground, hence the possibility of information bias. The study admits that combining a qualitative approach would have improved the quality of the survey in understanding the contextual issues that underpins the use of Tramadol among the population under study.

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APPENDIX

QUESTIONNAIRE

PREVALENCE AND FACTORS ASSOCIATED WITH THE ABUSE OF TRAMADOL AMONNG 'OKADA' (COMMERCIAL MOTORCYCLE) RIDERS IN THE ELLEMBELLE DISTRICT IN THE WESTERN REGION OF GHANA

(Questionnaire Adopted from Zabihi et al 2011, Bambach et al., 2012, Hand-Tsung Liu 2015 and modified by author 2019)

Section A: Socio-demographic characteristics

1. **What is your age? (Respondents years)**
   a) Date of birth……..
   b) Age……
2. **What is your Religion?**
   a) Christian ( )
   b) Muslim ( )
   c) African Traditional religion ( )
   d) Others (specify)……..
3. **When was the last time you attended Church/Mosque/Worship/Service?**
   a) Last 7 days/one week ( )
   b) Last one month ( )
   c) Last 3-6 months ( )
   d) More than six months ( )

Section B. Individual-related factors

4. What is your level of Educational?

a) Never attended school. ( )

b) Primary ( )

c) Junior high school. ( )

d) Secondary education. ( )

e) Tertiary education. ( )

5. What is your marital status?

a) Single. ( )

b) Married. ( )

c) Divorced. ( )

d) Widow. ( )

e) Co-habitation (girlfriend or fiancée) ( )

6. What was your previous occupation?

a) Farming. ( )

b) Galamsey ( )

c) Trading. ( )

d) Professional (teacher, nurse, etc ( )

e) Artisan

f) Unemployed ( )

g) Others……

7. **What other occupation in addition to Okada driving are you engage in?**

   a) Farming. ( )

   b) Galamsey

   c) Trading. ( )

   d) Professional (teacher, nurse, etc. ( )

   e) Artisan

   f) Others ( )

Section C: Community and family-related factors

8. **What is your ethnicity?**

   a) Nzema. ( )

   b) Fanti/Ashanti. ( )

   c) Ewe. ( )

   d) Northerner ( )

   e) Others (specify)……..

9. **Where do you normally stay or live?**

a) Family house ( )

b) Rented house ( )

c) Friend's house ( )

d) Others……..

Section D: Tramadol Misuse and Abuse factors

10. **Have you heard of a drug called Tramadol?**

   a) Yes ( )

   b) No ( )

11. **How did you get to know about tramadol?**

a) Through friends (peer influence) ( )

b) Curiosity ( )

c) Prescribed by health worker ( )

d) Mass media (TV, radio, Internet, etc.) ( )

e) Others ( )

12. Have you ever used Tramadol?

a) Yes ( )

b) No ( )

13. A. How long have you been using Tramadol?

a) in the past 7 days 1month ( )

b) the past 1-3 months ( )

c) in the past 3-6 months ( )

d) used but not using in the past 1-3 months

e) Used but not using in the past 3-6 moths

f) Used but not using in the past 6 months-1year and more

14. Do you know somebody who has used or is using Tramadol?

YES ( ) NO ( )

15. What do you use tramadol for?

a) Acute or Chronic pain

b) To relieve tiredness

c) To prolong sexual intercourse

d) To improve mood (euphoric effect or feel high)

e) Compulsive urge (craving)

f) Others (socialization, no specific)

16. How many dosage of Tramadol do you use per day?

a) 50mg per day

b) 100mg per day

c) 200mg per day

d) 200-300mg per day

e) 300-400 and above per day

17. A. Have you ever been given tramadol without prescription?

a) YES ( )

b) NO ( )

18. Where did you or do you get tramadol from?

a) Hospital ( )

b) Pharmacy ( )

c) Licensed Chemical shops ( )

d) Drug peddlers ( )

d) Others (specify)……

19. Where do you think others get tramadol from?

a) Hospital ( )

b) Pharmacy ( )

c) Licensed Chemical shops ( )

d) Drug peddlers ( )

d) Others (specify)…….

20. What did you or do you use tramadol for?

a) To reduce acute or chronic pain ( )

b) Energy boaster for hard work ( )

c) Psychological well-being ( )

d) To improve mood (feel high or euphoric effect) ( )

e) Sexual enhancement ( )

f) Others……..

21. What do you think others use Tramadol for?

a) To reduce acute or chronic pain ( )

b) Energy boaster for hard work ( )

c) Psychological well-being ( )

d) To improve mood (feel high or euphoric effect)

e) Sexual enhancement ( )

f) Others……..

22. Have you ever used drugs such as alcohol, marijuana, and any other types of opioids before?

(a) Yes ( )

(b) No ( )

23. Have you ever try to stop the use of Tramadol?

a) Yes ( )

b) No ( )

24. What other drug or substances did you /do you use in addition to Tramadol?

(a) Alcohol ( )

(b) Marijuana ( )

(c) Cocaine ( )

(d) Energy drinks ( )

(e) Others……

25. What other drug or substances do you think others use in addition to Tramadol?

(a) Alcohol ( )

(b) Marijuana ( )

(c) Cocaine ( )

(d) Energy drinks ( )

(e) Others……

26. What are some of the problems caused by tramadol abusers?

(a) Stealing ( )

(b) Road accidents ( )

(c) Act of violence/Fighting ( )

(d) Others……

Section E: (a) Unsafe Practices by Okada Drivers

27. How long have you worked as an Okada driver?

a) 1-3 months ( )

b) 6-11 months ( )

c) 1-2 year and more ( )

d) 3 years and more ( )

28. Do you have helmet for passengers?

a) YES

b) NO

29. Do you drive with helmet?

a) YES ( )

b) NO ( )

30. Have you ever carried more than two passengers on your motorcycle before?

a) YES ( )

b) NO ( )

31. How many passengers or people do you carry or see others carry on the motorcycle at a time?

a) 2 passengers/people ( )

b) 3 passengers/people ( )

c) 4 passengers/people ( )

d) 5 passengers/people ( )

32. Have you ever ride or think others ride motorcycle under the influence of Tramadol, Alcohol or any other psychoactive drug before?

a) YES ( )

b) NO ( )

(b) Okada accidents and injuries

33. What type of injuries have you been involved in as a results of Okada accident?

(a) Abrasions/Lacerated wound ( )

b) Head injury ( )

c) Bone fracture ( )

d) Joints dislocations ( )

e) Cerebral Spinal injury (Paralysis) ( )

f) Death

f) Others……

34. What do you think are some of the causes of Okada Accidents in the Ellembelle District?

1……..

2……

3……

4……

35. Have you ever had accident with a motorcycle yourself?

a) Yes ( )

b) No ( )

36. What do you think should be done to prevent people from getting access to tramadol to prevent Okada or motor cycle accidents in the district?

a)……

b)……....

c)……

e)……

37. Do you have a valid license for driving Okada?

Yes ( ) No ( )

38. Is your motorcycle registered by DVLA?

Yes ( ) No ( )