

TRAMADOL ABUSE AND VALUE FOR LIFE AMONG YOUNG PERSONS: MODERATING EFFECTS OF MORAL IDENTITY

Steven K. Iorfa¹, Chuka M. Ifeagwazi¹, James E. Effiong² & Nsidibe F. Essien³

¹Department of Psychology, University of Nigeria Nsukka, Nsukka, Nigeria

²Department of Psychology, University of Uyo, Uyo, Nigeria

³Centre for Research and Information on Substance Abuse, Uyo, Nigeria

ABSTRACT

Burgeoning research has begun to question what the actual value for life is among drug using individuals. Why do they engage in acts they know undermine the quality and length of their lives? Can the use of drugs be directly linked to lack of value for their lives? Or does the repeated use of drugs make them value less their lives? What if, regardless of their drug abuse, they had high levels of moral self and integrity? Would the pattern of results still be the same? Interested in finding this out, we employed the snowball technique to recruit young persons ($n= 158$, 75.95% males, $M_{age} = 23$ years) with differing levels of tramadol abuse, and obtained data regarding their self-reported value for life and moral identity. Results revealed significant associations between tramadol use, dimensions of moral identity and value for life such that as the level of tramadol abuse increased, value for life decreased; while as moral integrity and moral self increased, value for life also increased. Moderation analysis further showed a buffering effect of moral self and integrity on the relationship of tramadol use and value for life. These findings question our already existing drug use policies, anti-drug use campaigns and intervention strategies. Will our efforts at combatting drug use become more effective if we dwell more on building moral identities in individuals rather than incarcerating them? We suggest in-depth investigation to further explore the roles of morality in the non-medical use of prescription drugs.

Keywords: Criminalization, Morality, Non-medical, Policy, Tramadol, Value for life

INTRODUCTION

Valuing life entails a wide range of actions which are geared towards the

preservation of life, at least to the ability of the individual. Specifically, to value one's life means such an individual deliberately and consciously disengages in activities

that undermine the length and quality of his/her life and at the same time engages in activities that strengthen the length and quality of his or her life (Iorfa, Ifeagwazi & Chukwuorji, 2019). The question of what makes individuals display low value for life by engaging in health risk behaviours (health-related actions which show less or no value for life) has remained an age long one. Besides sexual risk behaviours, the other most researched health risk behaviour is drug use. Researchers have examined this across various disciplines and they all seem to agree that a wide range of correlates of health risk behaviours exist. For instance, a longitudinal research by Levers-Landis et al. (2015) highlighted older age, male sex, non-Hispanic white race-ethnicity, lower grades, more depressive symptoms, and stressful life events as prominent correlates of health risk behaviours. Hale and Viner (2016) found out that having friends over often, being out with friends often, being bullied, living in single-parent households, not getting along with parents, etc., were significant correlates of health risk behaviours as well. These show that possible reasons and situations which predispose adolescents to the use of drugs and consequently antisocial behaviours may be on a continuum and range from personal to external factors (Nnadozie, Iorfa & Ifebigh, 2018). And therefore may seem to suggest that to wholesomely combat drug abuse, an integrative approach which incorporates personal and external factors needs to be advanced. However, while the individual may have control of the internal factors, external factors are often a challenge and remain outside the reach of the individual. Thus making it an endless cycle from abuse to rehabilitation and relapse.

While the control of external factors may be beyond the reach of the individual, certain factors still revolve around what the individual can control within his/her psychological resources. We opine therefore that value for life may explain some underlying reasons why this may be so. We opine also that it may be a hasty and unproven generalization to conclude that individuals abusing drugs have low value for life and as such we question; do individuals who engage in drug abuse have value for their lives at all? Or is it the other way round that prolonged abuse of drugs has depleted their value for life? Or is there no relationship at all between drug abuse and value for life?

The psychological study of value for life is relatively new and has based its initial empirical investigations on violence and aggression (see Iorfa, Ifeagwazi & Chukwuorji, 2019). However, it is logical to reason that continued and prolonged use of illicit drugs may have associations with the level of value drug users place on their lives and consequently the lives of others, especially when they are aware of the consequences of such drugs. Taking Tramadol for an example, a wide range of studies have shown that prolonged use of tramadol may have adverse effects on adolescents and other users in general such as sexual dysfunctions (Abdel-Hamid, Anderson, Waldinger & Anis, 2015), trauma, seizures and consequent injuries (Farajidana, Hassanian-Moghaddam, Zamani & Sanaei-Zadeh, 2012) which may occur in both overdose and within therapeutic dose range, miosis and a wide range of subjective effects (Zacny, 2005), serotonin syndrome (Beakley, Kaye & Kaye, 2015) and in extreme cases, coma and sometimes death especially in under aged persons (Anderson, 2018; Chukwuorji,

Nweke, Iorfa, Lloyd, Effiong, & Ndukaihe, 2020).

Tramadol is a synthetic analgesic (pain reliever). Researchers and doctors have not reported the exact mechanism of action of tramadol, but it is similar to morphine. Like morphine, tramadol binds to receptors in the brain (narcotic or opioid receptors) that are important for transmitting the sensation of pain from throughout the body to the brain and by so doing, relieves the taker of pain. When adolescents abuse tramadol, they do so for a wide range of reasons which mostly revolve around keeling pain and feeling good. However, it should be noted that the perception of good feeling that leads to abuse and misuse of tramadol can lead to long term consequences such as weakness, sleepiness, insomnia, panic attacks and other symptoms of opioid dependence. In some cases, overdose of tramadol may lead to difficulty in breathing and even death (Elliason, Sandow, Asechaab, Kpangpkari & Asiaktiwen, 2018). Addicts are aware of this, however, continued use of tramadol is on the rise and reasons may not be restricted to theories of addiction alone. We hope that findings from this study will culminate into a more concrete theory of drug use and value for life.

In Nigeria, a report on the National Survey of Drug Use (UNODC, 2019) suggested that approximately 4.6 million people abused pharmaceutical opioids of which tramadol was listed. This number doesn't seem to be decreasing because even though the government has placed sanctions on the importation or production and sale of some of these commonly abused drugs (e.g. codeine and tramadol), the long term effects of exposure to and abuse of these drugs are still evident in the Nigerian society (Iorfa, Ugwu,

Ifeagwazi & Chukwuorji, 2018). It is more troubling also because general levels of violence in the country are rising and it is possible that harm to others due to the intake of tramadol (and other psychoactive substances) may be rising as well. The Nigerian Drug Law Enforcement Agency (NDLEA) in November 2019 stated that it had arrested a police man and drug trafficker who were supplying 59kg worth of Tramadol to Boko Haram insurgents in Gwoza, Borno State (Vanguard, 2019). Since these insurgents are known for their notorious lack of value for life, there is reason to believe that the abuse of tramadol may further make engagement in these acts easier for them and that tramadol may be implicated in value for life. Thus, researchers, scientists, the government and policy makers may not have to battle with the effects of tramadol use on the user alone but its adverse effects on ordinary persons (non-abusers) and the society at large.

Because most people who would value life may do so based on their moral inclinations/morality, this study also sought to investigate the levels to which moral thoughts/cognitions (specifically moral identity) may influence people's value for life along their use of tramadol. Thus another important variable of interest which will also serve as a moderator in the present study is moral identity (self and integrity). To understand moral identity, it is important that we first look at the mother construct (moral cognitions) encompassing moral identity. And in defining moral cognitions as well, it is important to first lay a premise with morality. Morality involves right or wrong actions. The study of morality has focused on what one ought to do with reference to a given code of conduct (Casebeer,

2003). For absolutists, there is a single code according to which all people should live. For relativists, there are many different codes relevant to different societies or individuals. In both cases, morality is essentially social and depends upon communication and relationships between individuals. This therefore means that there may be different moralities worldwide.

However, according to Gert (2005), people tend to think of morality as normative, but it is often used as a descriptive term for the distinct standards that different groups of people use to judge behaviour. Thus an action may be seen as moral provided it follows prevailing moral codes of a specific group. Further, an action is good (moral) if more people benefit than are harmed. However, Colby and Kohlberg (1987) stated that the morality of an action is determined by the actor's interpretation and in this context therefore, morality may not be a definition of right and wrong but may however refer to how closely individuals follow their own ethical ideas. From this perspective, over-the-counter/non-medical use of prescription medication such as tramadol may be considered moral by individuals even when there are national laws prohibiting it. At such points, the target of awareness may have to be individuals' moral cognitions and specifically, identity. According to Black (2012), moral cognition refers to all the conscious and unconscious mental processes that determine whether a given action is right or wrong according to the prevailing moral paradigm. The moral paradigm mostly outlined by researchers revolves around the basic precept of avoiding harm to other persons within the community (Graham, Nosek, Haidt, Iyer, Koleva, & Ditto, 2010). Therefore, owing to the argument put forward by

Graham et al. (2010), we postulate that individuals, who abuse tramadol but have a high sense of morality may (because they desire to avoid harm to others), value life more highly than those who have a low sense of moral identity.

Black (2012) accordingly opined that moral cognitions are made up of four components; Responsibility, Identity, Cognition, and Community and subsequently developed the Moral Cognitions Inventory which focuses on responsibility and identity as aspects of cognition. In this study, we focus mainly on identity. Moral identity conceptualizes the level of importance individuals give to their moral principles and to acting accordingly. Moral identity has two subdomains of moral self and moral integrity. The moral self simply put, is how important morality is to an individual's self-concept while integrity refers to how important it is to act according to moral principles. Moral behaviour outspans the question of knowing what should be done. Knowing that something is morally right or wrong does not always result in corresponding action, neither does the intention not to do wrong always correspond to right actions. Blasi (1983) suggested that the sense of moral self is a primary motivating force for moral behaviour: once the necessary judgment of what is morally good is made, individuals want to do so in order to maintain self-consistency (Blasi, 1983) and this concurrence of thought (judgment) and action is seen as integrity. And according to Monin and Jordan (2009) integrity is seen as a social virtue. Thus an individual may be seen as having moral integrity when they judge and act in a morally good way. In line with our earlier postulations therefore, even though there is no guarantee

that cognitions may eventually translate into actions, we further hypothesize that persons abusing tramadol, but who have adaptive moral cognitions, may value life more than their counterparts with more maladaptive moral cognitive patterns.

The choice of young persons as the key population for this study is due to the fact that the abuse of tramadol and other substances has been shown to be peak among them (UNODC, 2019). And also that at this stage, issues of morality become a serious matter of conflict where the young persons struggle with identity crisis, knowing and accepting what is wrong or right and either inclining to the warnings of significant authorities or yielding to the persuasions of peers.

METHOD

Participants and procedure

A total of 158 (75.95% males, $M_{age} = 23$ years) persons who identified as using tramadol were recruited using snowball technique. The first participant, after being told about the study and how confidential their identity and responses would be treated, agreed to identify others whom he had either bought tramadol from/for and whom he knew used the drug quite frequently. These persons then recruited others they also knew into the study. Some whom the researchers could not have access to, responded to the questionnaires, took pictures of them and returned via WhatsApp through the participants who recruited them. For participants whom the researchers had contact with, average response time to the questionnaire was 7 minutes.

Instruments

Moral Cognitions Inventory (Black & Reynolds, 2016).

The Moral Identity domain of the Moral Cognitions Inventory was used in this study to assess and evaluate participants' patterns of moral thoughts and cognitions. The moral identity domain is broken down into two subdomains of moral integrity (MI) and moral self (MS). A refined version of the moral identity domain (Black & Reynolds, 2016) offers 12 items for the MI which are responded to on a five point Likert-type scale with response options ranging from strongly agree (1) to strongly disagree (5). Participants are instructed to read through the items (being statements) of how people feel and behave and indicate their level of agreement with each statement as honestly as possible. Sample items include "It is ok to do something you know is wrong if the rewards for doing it are great", "There is no point in going out of my way to do something good if no one is around to appreciate it", "If people treat me badly, I will treat them in the same manner", etc. The MS subdomain as reflected in Black and Reynolds (2016) consists of 8 items responded to on a five-point Likert-type scale. Response options range from strongly disagree (1) to strongly agree (5). Instructions are similar to the MI subdomain. Sample items include "I want other people to know they can rely on me", "I always act in ways that do the most good and least harm to other people", "Once I've made up my mind about what is the right thing to do, I make sure I do it", etc. The first eight items correspond to the MS subdomain while the other 12 correspond to MI (reverse code to be in direction of greater integrity). In an earlier version of

the scale, Black (2012) reported Chronbach's alpha reliability coefficients for the MIn and MS to be $\alpha=.87$ and $\alpha=.82$ respectively. Test retest reliability at 8 to 14 days of $r(97) = .90$ and $.77$ for the MIn and MS subdomains respectively. Black and Reynolds (2016) reported Chronbach's alpha reliability coefficients for the MIn and MS to be $\alpha=.87$ and $\alpha=.84$ respectively. In the present study, we found Chronbach's alpha reliability coefficients for the MIn and MS to be $\alpha=.88$ and $\alpha=.83$ respectively.

Value for Life Scale (Iorfa, Ifeagwazi & Chukwuorji, 2019).

The Value for Life Scale (VfLS) was used to evaluate and assess participants reported levels of value for life. It is a 30-item instrument encompassing five broad domains of value for one's life, value for the life of others, value for the life of plants, value for the life of animals and value for the life after death. Each of the five domains is made up of 6 items and responded to on a five-point Likert type scale ranging from Absolutely true of me (4); Mostly true of me (3); Can't say true or false (2); Mostly untrue (1) and Absolutely untrue of me (0). Participants are instructed to read 30 ordinary statements that may correspond to how they feel and think sometimes and to please respond to them accordingly and based on how true or untrue they are to them. Sample items on the value for one's life domain include "I think if there is anyone who should be alive then it's me", "I can give my life to prove a point or fight for a cause", "My life is very important to me", etc. Sample items on the value for the life of others domain include "I don't think any individual should be denied the right to life", "When I look around me, I can identify people who are better off dead", "I don't mind seeing

bloodshed", etc. Sample items on the value for the life of plants domain include "Plants are important to me", "I don't care if trees are all cut down", "I plant flowers and take time to nurture them to life", etc. Sample items on the value for the life of animals domain include "I feel pity when I see animals in pain", "I think laws prohibiting killing of animals should be scrapped", "I am concerned about animal species that are going into extinction", etc. Sample items on the life after death domain include "I believe there is some form of life after death", "Most of my actions are motivated by thoughts of life after death", "I ensure not to engage in acts that will jeopardize a happy life for me after death", etc. Twelve items (4,5,6,7,9,12,13,14,15,16,28,30) are negatively worded and therefore reversed scored. Subdomains are summed up individually to obtain an individual's score on each of the dimensions. A total (composite) score is possible and gives the individual's overall value for life. In the present study, the composite scores were used as sum values indicating individual's overall value for life. Iorfa, Ifeagwazi and Chukwuorji (2019) reported significant Cronbach's alpha reliability coefficients for the subscales of the VfLS ranging from .86 to .95. In the present study, we found a Cronbach's alpha reliability coefficients for the composite scale to be .91.

Tramadol Abuse.

To measure tramadol abuse, participants were asked to indicate the frequency of their intake of tramadol within the last 15 days. Response options ranged from 0= never, 1= less than five times, 2= more than 5 times but less than 10 times, 3= more than ten times but less than 15 times, and 4= 15 times and above.

Design/Statistics

Preliminary analyses were carried out using Pearson's correlations, while Hayes' PROCESS macro for SPSS was used to test the study's hypotheses.

RESULTS

Results from Table 1 show that value for life significantly negatively correlated with tramadol use but positively correlated with the dimensions of moral identity (integrity and self). Intercorrelations were also observed between moral integrity and moral self. Tramadol use was negatively correlated with moral integrity and self.

In Table 2, it was found that Tramadol abuse was significantly associated with value for life ($B = -11.00, p = .00$). This suggests that for every one unit rise in tramadol abuse, value for life decreased by 11

units. It was also found that moral integrity was significantly associated with value for life ($B = .92, p = .00$), again suggesting that for every one unit rise in moral integrity, value for life increased by .92. Moral self was also significantly associated with value for life ($B = .77, p = .00$) suggesting that for every unit increase in moral self, value for life young persons increased by .77 units. The interaction of tramadol use and moral integrity was significant ($B = -1.24, p = .00$), indicating that moral identity moderated the relationship between tramadol use and value for life. Slope of the interaction (see figure 1) indicated that tramadol use was not significantly associated with value for life among young persons with low moral integrity ($B = 4.43, p = .10$) but was highly negatively related to value for life among young persons with moderate ($B = -11.01, p = .000$) and high moral integrity ($B = -26.45, p = .000$). The model explained about 10.7%

Table 1. Means, Standard deviations and intercorrelations between study variables

Variables	M	SD	1	2	3	4	5
1. Age	23.00	3.89	1				
2. Value for Life	41.27	37.86	.12	1			
3. Tramadol use	2.33	.95	-.04	-.51**	1		
4. Moral integrity	22.59	12.50	-.13	.75**	-.46**	1	
5. Moral self	12.37	9.82	-.06	.75**	-.49**	.90**	1

*= $p < .05$; **= $p < .01$

Table 2. Hayes PROCESS macro results for tramadol use predicting value for life with dimensions of moral identity (integrity and self) as moderators

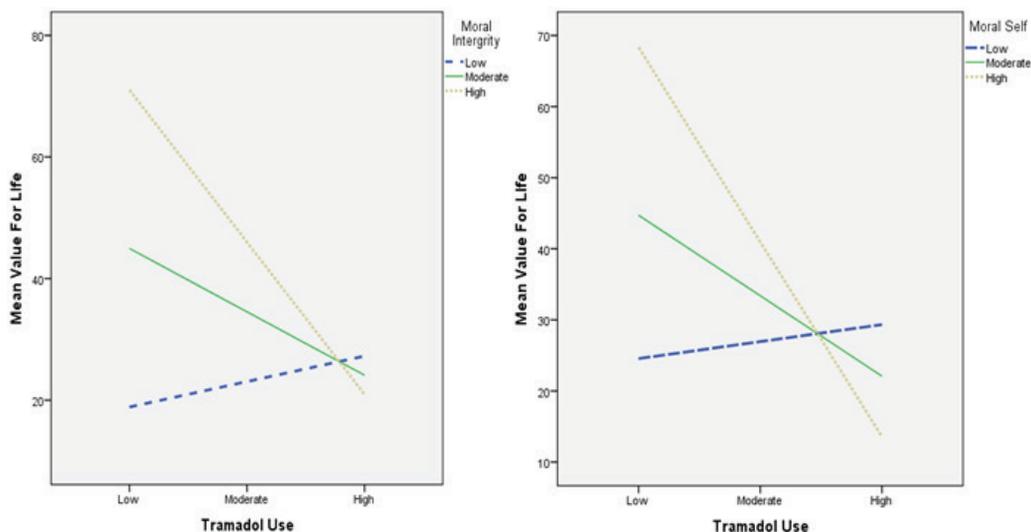
Variable	Value for Life			
	B	t	p-level	95%CI
Tramadol Use	-11.00	-5.43	.000	[-15.01, -6.99]
Moral Integrity (MIn)	.92	4.42	.000	[.51, 1.32]
Moral Self (MS)	.77	2.34	.000	[.12, 1.42]
Tramadol Use X MIn	-1.24	-7.37	.000	[-1.10, -.90]
Tramadol Use X MS	-1.73	-6.75	.000	[-2.23, -1.22]

of the variance in value for life of young persons, $R^2 = .1070$, $F(1, 154) = 54.27$, $p = .000$. The interaction of tramadol use and moral self was also significant ($B = -1.73$, $p = .00$), indicating that moral self also moderated the relationship between tramadol use and adolescents' value for life. Slope of the interaction (see figure 2) indicated that tramadol use was not significantly associated with value for life among young persons with low moral self ($B = 2.53$, $p = .33$) but was negatively related to value for life among young persons with moderate ($B = -11.95$, $p = .000$) and high moral self ($B = -28.91$, $p = .000$). The model explained about 9.5% of the variance in value for life, $R^2 = .095$, $F(1, 154) = 45.50$, $p = .000$.

DISCUSSION

Our study investigated the moderating effects of moral identity on the relationship of tramadol abuse and value for life among young persons. Already,

research has associated substance use in general with suicide ideation and behaviour (Breet, Goldstone & Banjes, 2018; Chukwuorji et al., 2020) which is an index of low value for one's life. Interestingly Zhang and Wu (2014) also established an association between use of specific illicit substances and suicide ideation. Specifically, Esang and Ahmed (2018) stated that opoid-related suicides have doubled in the last 15 years. Our finding that tramadol use is positively associated with low value for life confirms these studies. This finding may also mean that the increasing rate of tramadol abuse in some regions of the country and among some populations like young persons may be significant correlates of the increasing levels of interpersonal violence, crimes and suicides in such regions and among such populations. It would therefore go a long way to help, if the trajectories of substance (tramadol) abuse and its link to value for life are understood and interventions designed, specifically tailored to address



Figures 1&2. Interaction slopes showing the moderating effects of moral integrity and moral self on tramadol use and value for life

the effects of substance use (tramadol) on value for life. Thus, campaigns aimed at preventing drug use might employ the promotion of value for life among tramadol abusing persons. These campaigns may also help people avoid (or delay the initiation) of the use of psychoactive substances by laying emphasis on the effects of drug use on value for life. Among persons who have already initiated the use of substances, campaigns may be tailored to forestall the development of harmful use and or dependence also by emphasizing value for life.

More interestingly, our study found out that moral cognitions, specifically moral identity (self and integrity) moderated the relationship between tramadol use and value for life suggesting that among tramadol abusers, value for life was highest when moral integrity was high. This pattern of finding was replicated also for the moral self, albeit a bit lower. These findings agree with those of Abide, Richards and Ramsay (2001) who suggested that morality influences substance use and may form attitudes towards the use of substances. Put together, our findings also suggest the fact that independently, moral identity is associated with higher value for life among persons abusing tramadol and at the same time buffers the effect of tramadol abuse on value for life. These suggest that a high moral identity may mean that even in the presence of tramadol abuse, abusers may still value life. And if this is true, then it may become pertinent to revisit long existing theories and policies around drug use and abuse; and question how person-centered they have been. In other words, have these theories, laws and policies in any way taken into consideration the actual dynamics of the persons abusing drugs or are they

put forward for the good of society at large, and often neglecting the situations of the persons engaging in the non-medical use of prescription drugs? Already, there are debates on the issues of drug use and morality and consequently, the criminalization of drug use and these must be taken into consideration in further actions on drug use in Nigeria.

The high and negative significant associations between tramadol use and value for life may mean that tramadol abusers are prone to suicidal ideations and inter-personal violence. However, this may not be interpreted without consideration of other dynamics peculiar to the drug abusing individual. As was seen, tramadol use may have a negative association with value for life but this association could be moderated and buffered in the presence of other factors. The integration of moral cognition into the drug use debate and literature will help researchers and policy makers understand why despite the many information available on the side effects of drug abuse, young persons still initiate and sustain it. Again, since conventions for health behaviours are often age-dependent, early health-risk behaviour, i.e. initiation of drug use may often come as a means of demonstrating maturity and independence and repudiating conventionality and the norm among young persons. The targets of authorities and campaigns/intervention strategies at this points should be geared towards the building and development of more adaptive moral cognitive patterns. At the long run, in the presence of more adaptive moral cognition over and above maladaptive patterns of moral cognition, drug users may reduce or completely withdraw from the use of illicit substances.

Hale and Vinder (2016) drawing on Jessor's "Problem Behaviour theory"

suggest that behaviours which are socially-defined as problematic or unconventional (not moral) are endorsed by young persons as a manifestation of disregard for such social conventions and that the tendency for problem behaviour arises based on psychosocial protective and risk factors, with protective factors decreasing the likelihood of problem behaviour and risk factors increasing the likelihood. Drawing from this theory also, we opine that if morality in the form of adaptive moral cognitions become recognized as valuable options (protective factor) in the battle against illicit drug use, perhaps better outcomes may be achieved; and if it will be, then more emphasis need to be placed on building more moral individuals than criminalizing drug use.

This research has its limitations. It is a cross-sectional survey and therefore cause and effects relationships may not be easily drawn. It also has focused only on the non-medical use of tramadol. However, the findings may serve to inform further and more detailed experimental studies in the area of drug use, morality and value for life. Since tramadol is a synthetic analgesic and operating like morphine and other narcotics, these findings may be generalizable across morphine and other similar narcotics. Most importantly, notwithstanding the limitations of this study, the links established between tramadol use and value for life serve to inform that higher levels of tramadol use are likely to be associated with low levels of value for life among persons abusing tramadol.

CONCLUSIONS

In summary, our findings agree with previous research. UNODC report had

suggested that efforts to support the prevention and treatment of drug use also include providing people who use drugs with the necessary knowledge and skills to prevent overdoses (UNODC, 2019) and possibly stop the use. One necessary knowledge could be the awareness of the effects of tramadol use on value for life. A necessary skill would be teaching and training individuals on more adaptive forms of moral cognitions. Our findings show that restraint/self-control from drug use may better be achieved from internal belief rather than external control through sanctions, criminalization, threats and punishment. Thus as Abide, Richards and Ramsey (2001) stated, one way to discourage the use of substances is to encourage the belief in the wrongness in the use of substances and as Grayling (2016) also opined, criminalizing drug use only exacerbates the problems associated with drug use as well as the cost to society.

REFERENCES

- Abdel-Hamid, I. A., Anderson, K. E., Waldinger, M. D. & Anis, T. H. (2015). Tramadol abuse and sexual function. *Sexual Medicine Reviews*, 4(3), 235 – 246. doi.org/10.1016/j.sxmr.2015.10.014
- Abide, M. M., Richards, H. C. & Ramsay, S. G. (2001). Moral reasoning and consistency of belief and behaviour: Decisions about substance abuse. *Journal of Drug Education* 31(4), 367-384.
- Anderson, L. (2018). *Tramadol: Top eight things you need to know*. Retrieved on 10/10/2019 from <https://www.drugs.com/article/tramadol-need-to-know.html>

- Beakley, B. D., Kaye, A. M. & Kaye, A. D. (2015). Tramadol, pharmacology, side effects, and serotonin syndrome: A review. *Pain Physician, 18*, 395-400.
- Black, J. E. (2012). *Initial development and psychometric characteristics of the moral cognition inventory*. PhD Thesis, Humboldt State University.
- Black, J. E., & Reynolds, W. M. (2016). Development, reliability, and validity of the Moral Identity Questionnaire. *Personality and Individual Differences, 97*, 120-129. doi:10.1016/j.paid.2016.03.041
- Blassi, A. (1983). Moral cognition and moral action: A theoretical perspective. *Developmental Review, 3*(2), 178-210.
- Breet, E., Goldstone, D., & Bantjes, J. (2018). Substance use and suicidal ideation and behaviour in low-and – middle- income countries: A systematic review. *BMC Public Health 18*, 549.
- Casebeer, W. D. (2003). Moral cognitions and its neural constituents. *Nature Reviews Neuroscience, 4*, 840-846.
- Chukwuorji, J. C., Nweke, A., Iorfa, S. K., Lloyd, C. J., Effiong, J. E., & Ndukaihe, I. L. G. (2020). Distorted cognitions, substance use and suicide ideation among gamblers: A moderated mediation approach. *International Journal of Mental Health and Addiction*. doi:10.1007/s11469-020-00232-0
- Colby, A., & Kohlberg, L. (1987). *The measurement of moral judgment, Vol 1: Theoretical foundations and research validation; Vol2; Standard issues scoring manual*. New York, NY, US: Cambridge University Press.
- Elliason, E. K., Sandow, B., Asechaab, T., Kpangpkari, S. & Asiaktiwen, R. (2018). Abuse and Misuse of Tramadol among the Youth in the Wassa Amenfi West Municipality in the Western Region of Ghana. *Psychology & Psychological Research International Journal, 3*(7), 1-18.
- Esang, M. & Ahmed, S. (2018). A closer look at substance use and suicide. *The American Journal of Psychiatry: Residents' Journal, 13*(6), 6-8
- Farajidana, H., Hassanian-Moghaddam, H., Zamani, N. & Sanaei-Zadeh, H. (2012). Tramadol-induced seizures and trauma. *European Review for Medical and Pharmacological Sciences, 16*(1), 34-37.
- Gert, B. (2005). *Morality: Its nature and justification*. Revised Edition, New York: Oxford University Press.
- Graham, J., Nosek, B. A., Haidt, J., Iyer, R., Koleva, S., & Ditto, P. H. (2011). Mapping the moral domain. *Journal of Personality and Social Psychology, 101*(2), 366-385.
- Grayling, A. C. (2016). Morality and non-medical drug use. *The BMJ 355*, i5850.
- Hale, D. R., & Viner, R. M. (2016). The correlates and course of multiple health risk behaviour in adolescence. *BMC Public Health, 16*, 458. doi:10.1186/s12889-016-3120-z
- Ievers-Landis, C.E., Walders-Abramson, N., Amodei, N., Drews, K. L., Kaplan, J., Levitt-Katz, L. E... & Silverstein, J. (2015). Longitudinal correlates of health risk behaviours in children and adolescents with Type 2 Diabetes. *Journal of Pediatrics, 166*(5), 1258-1264.e3. doi: 10.1016/j.jpeds.2015.01.019.
- Iorfa, S. K., Ifeagwazi, C. M., & Chukwuorji, J. C. (2019). The value for life (VfL) hypothesis and the Value for Life Scale (VfLS): Conceptualisation, development and initial validation. *Nigerian Journal of Psychological Research, 15*, 14-22.

- Iorfa, S. K., Ugwu, C., Ifeagwazi, C. M., & Chukwuorji, J. C. (2018). Substance abuse among youths: Roles of psychoticism, social alienation, thriving and religious commitment. *African Journal of Drug and Alcohol Studies*, 17(2), 133-146.
- Monin, B., & Jordan, A. H. (2009). The dynamic moral self: A social psychological perspective. In D. Narvaez & D. K. Lapsley (Eds.), *Personality, identity, and character: Explorations in moral psychology* (pp. 341-354). New York: Cambridge University Press.
- Nnadozie, E. E., Iorfa, S. K. & Obikaeze, O. I (2018). Parenting style and religiosity as predictors of antisocial behaviour among Nigerian undergraduates. *Journal of Social Services Research*, 44(5) 624-631. doi.org/10.1080/01488376.2018.1476297
- United Nations Office on Drugs and Crime (2019). *Drug use in Nigeria 2018*. Vienna; UNODC
- Vanguard (November, 2019). *Police-man, trafficker arrested for supplying drugs to 'Boko Haram'*. Retrieved on 25/02/2020 from <https://www.vanguardngr.com/2019/11/police-man-trafficker-arrested-for-supplying-drugs-to-boko-haram/amp/>
- Zacny, J. P. (2005). Profiling the subjective, psychomotor, and physiological effects of tramadol in recreational drug users. *Drug and Alcohol Dependence*, 80(2), 273-278.
- Zhang, X. & Wu, L. (2014). Suicide ideation and substance use among adolescents and young adults: A bidirectional relation? *Drug and Alcohol Dependence*, 142, 63-73.