



# Social Welfare Policy for Prevention and Factors Influencing the Use of Tramadol by School Children and Adolescents in Thailand.

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## Abstract

Tramadol was originally an opioid pain reliever used to treat moderate-to-severe pain. Tramadol was first overused by children and adolescents all over the world to relieve mental health strain about 20 years ago, and it has since destroyed the users' mental and physical health. This article describes the findings of a study on tramadol misuse in Thailand, as well as the level of awareness about the penalties for dangerous drug misuse, legal measures to control dangerous drugs, and the factors that influence harmful drug abuse and its impact on drug users. Using quantitative research, data was obtained from young people and children. According to the data, the current situation of dangerous drug use among children and adolescents is on the rise. A poll of 257 children and adolescents found that 45.8% had limited knowledge of tramadol use, and 51.8% had a moderate grasp of legal measures. At a statistically significant level of 0.05, age, maternal order, substance use behavior, Tramadol drug selection channels (in the case of grocery shops), components chosen for use with addiction, and family ties were all factors that influenced hazardous drug misuse. Tramadol use has a harmful impact on addicts, their families, and society.

**Keywords:** children and adolescents, misuse of tramadol, prevention, social welfare policy

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## 1. Introduction

Tramadol was first used to treat moderate-to-severe pain nearly 20 years ago. Tramadol was later overused and misused by children and adolescents all over the world to relieve mental health strain which has destroyed the users' mental and physical health. Much Thai youth in the educational system used tramadol to relieve stress, which had a significant impact on their physical, mental, and educational quality, and future. To limit the spread of tramadol misuse, the Food and Drug Administration (FDA) and the Narcotics Control Board of Thailand have put many measures in place. However, the spread of tramadol misuse seems to be increasing amongst Thai youth.

Even though FDA issued strict measures in 2013 controlling the sale of tramadol to production licensees, licenses to import drugs, and pharmacists who are responsible for operating in such establishments, including those classified as "dangerous drugs" and must be sold in a licensed modern pharmacy. The medicine must be delivered by a pharmacist who has the duty to operate legally. Pharmacy licensees and pharmacists must jointly prepare a purchase and sale account that is accurate and up to date. Pharmacists must deliver medicines according to professional

ethics, without prescribing the drug to those who have no medical indication, and pay the right amount for the safety of the patient. If the pharmacy does not have a license to sell modern drugs, it is punishable by imprisonment for not more than 5 years and a fine of not more than 10,000 baht. In the case of failing to make an account for buying or selling drugs, the licensee is subject to a fine of 2,000–10,000 baht. Pharmacists are fined between 1,000–5,000 baht. In the case of tramadol pharmacy (which is a dangerous drug), while the pharmacist is not on duty, the licensee is guilty and is fined from 1,000 to 5,000 baht. [1]

However, the spread of tramadol misuse seems to be increasing among Thai youth. This paper investigates the factors that lead to its abuse, tramadol misuse situations, the level of knowledge about the punishment for dangerous drug misuse, and recommendations for controlling dangerous drugs.

## 2. Literature review

Tramadol acts as a serotonin releaser by inhibiting serotonin and noradrenaline reuptake, whereas the O-dimethyl metabolite of tramadol (known as M1 or ODT) acts on the opioid receptor. This implies that the mechanism of action of tramadol includes both non-opioid components—that is, noradrenergic and sero-

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tonergic components—and opioid components. Intravenous naloxone has been successfully used to reverse the opioid-related respiratory depressant effects of tramadol overdose.

Symptoms following tramadol intoxication are like those of other opioid analgesics. These include CNS depression, including coma, nausea and vomiting, tachycardia, cardiovascular collapse, seizures, and respiratory depression up to respiratory arrest. Moreover, in combination with serotonergic agents (for example, selective serotonin reuptake inhibitors and monoamine oxidase inhibitors), tramadol may induce serotonin syndrome. Hyperthermia in serotonin syndrome is potentially fatal. Because of the opioid agonist activity of O-desmethyl-tramadol, tramadol may lower the respiratory rate and potentially lead to severe respiratory depression. [2]

Tramadol is used to treat both acute and chronic pain of moderate to severe intensity. Tramadol is available worldwide as a medicine. It is mentioned as a step-2 analgesic in the WHO guidelines for cancer pain relief. Tramadol is listed on several national essential medicine lists, but it is not listed on the 20th WHO Model List of Essential Medicines or the 6th WHO Model List of Essential Medicines for Children.

There is growing abuse of tramadol in some African and Western Asian countries, as evidenced by large seizures, predominantly of tablets, in North and West Africa. Abuse of tramadol has become a serious problem in several Middle Eastern countries. Data provided by the UNODC (July 2017) on global tramadol seizures show a steady rise in seizures between 2007 and 2015. Several countries have brought tramadol under some form of national legislation. [3]

Misuse of Tramadol can cause addiction, overdose, or death, especially amongst children or adults using the medicine without a prescription. Tramadol should not be given to a child younger than 12 years old or anyone younger than 18 years old who recently had surgery to remove the tonsils or adenoids. Taking tramadol during pregnancy may cause life-threatening withdrawal symptoms in the newborn. Fatal side effects can occur if you use this medicine with alcohol or with other drugs that cause drowsiness or slow breathing. [4]

Tramadol is known as “green yellow” amongst children and adolescents in Thailand because of its green and yellow capsule. They mixed Tramadol with coffee, Kratom juice, soft drinks, energy drinks, or alcoholic drinks to mimic the effects of narcotic substances. As a result, a quiet hazard of a surge in harmful drug usage among children and adolescents that is becoming a concern in Thai society. Leaving users unable to control their desires for narcotic substances. Particularly concerning is the mental health of drug addicts who need to take drugs all the time and require more. They will probably feel calm and cheerful right away, but if they take it too much or too of-

ten, it will have a direct effect on drug addicts, causing them to have deteriorating health, mood swings, and brain and nervous system damage. In addition to Tramadol, four categories of medicines are commonly misused by children and adolescents, including Prosody, Dextromethorphan, Dimetapp Elixir, and Alprazolam. Children and teenagers in Bangkok’s Juvenile Observation and Protection Center had a growing tendency toward dangerous drug usage, such as tramadol, prosody, cough suppressant liquid, and so on, according to reports from the Office of the Narcotics Control Board, Bangkok. [5]

Because harmful drugs are not classified as addictive substances, Thailand lacks a systematic or evident procedure for data collection. The amount of information provided regarding the effects of medicine misuse and the observation of behavioral symptoms among individuals who use harmful drugs is extremely limited, leaving parents of children and adolescents unaware of their children’s drug use. Dangerous medications, on the other hand, are inexpensive and can be obtained at any drugstore or on social media sites such as Facebook, LINE, Instagram, Twitter, or game shops. As a result of the circumstances, several Thai children and teenagers are at risk of abusing harmful narcotics.

Tramadol misuse occurred approximately 20 years ago, as evidenced by several studies in several countries, including Habib Ahmadi, Mansour Rezaie, and Jamal Hoseini. Tramadol is used. Misuse of the objective from 2005 to 2008, 294 deaths were reported with tramadol in the body, and between 2008 and 2010, patients were hospitalized due to the toxic effects of tramadol. As many as 1,023 people, most of whom use drugs to hope for suicide and use drugs. [6]

The results of an emergency patient study have been released by the United States Drug Abuse Warning Network (DAWN). Tramadol discovered that there were 15,349 emergency patients admitted to the emergency department for drug-related reasons in 2009, 16,251 in 2010, and 20,000 in 2011 (Drug Enforcement Administration. 2014). In addition, the National Survey on Drug Use and Health (NSDUH) reported that 1.8 million American youth aged 12 and older took tramadol in 2017. In 2018, 1.5 million people were counted. [7]

Elliason EK et al. [8] looked at the use of Tramadol in Ghana. 84.0 percent of the perverted adolescents in Wassa Amenfi West knew tramadol via friends and colleagues, and 69.3 percent knew tramadol. Tramadol is widely available, and 30% of people use it for sexual pleasure and enhancement.

Chikezie, U.E., and Ebuonyi, I.D. [9] did a study on tramadol use in Nigeria. The great majority of tramadol abusers in the Niger Delta were determined to be young guys. According to the information they were given, Tramadol is an opioid analgesic used to alleviate pain and aid in the recovery of consciousness.

In the region, tramadol abuse among young males is an everyday occurrence.

Several nations, including the United States of America, Canada, Sweden, the United Kingdom, the Republic of South Africa, Australia, Singapore, and Hong Kong, regulate tramadol as a dangerous substance that can only be acquired with a prescription. (Only on prescription) [10]

Despite this, the misuse of tramadol is growing all over the world, according to the World Health Organization's 2019 Tramadol-Update Review Report, which states that North Africa, West Africa, and North Africa are the most affected. Tramadol is believed to have been misused across Europe and Western Asia, resulting in the deaths of between 70,000 and 100,000 people as a result of an overdose. [11]

Patchamon Santisetsin and Chuan-chom Thananithisak [12] conducted a survey in Thailand to gauge public opinion on tramadol sales control methods. Selling Tramadol prompted FDA to enact regulations on tramadol distribution, although it was discovered that many people still do not comprehend the regulations, seen more as a hindrance. There was a poor level of satisfaction with the measure, which made it difficult for individuals who need tramadol treatment to acquire it.

According to literature review, tramadol abuse occurs both in Thailand and overseas. It is mostly seen in young males who hurt themselves, their families, and society. Thailand, on the other hand, still has a long way to go in terms of preventing tramadol abuse among children and adolescents.

### 3. Methodology

This study employs quantitative research to gather personal characteristics of sample group. The widespread use of dangerous drugs among school age children and adolescents is alarming. These factors influence the use of dangerous drugs among children and young people of school age. The effects of dangerous drugs on drug users, their families, and society.

### 4. Research questions

1. How popular and widespread is the taking of dangerous drugs among children and young people of school age?
2. What factors influence the use of dangerous drugs among children and adolescents of school age?

### 5. Sample

The sample were children and adolescents who are under control by the Regional Juvenile Vocational Training Center (RJVCT) 1-11 during 2019–2020. The RJVCT has tasks and duties in controlling, supervising, correcting, treating, rehabilitating, preventing,

and developing behavior to support children and adolescents who have been sentenced or ordered by the court to receive training so that children and adolescents can return to a good people and can live a normal life in society. The inclusion criteria are children and adolescents who had been misused of tramadol behavior. The total population in the RJVCT at that time was 2,665.

By using purposive sampling to children and adolescents who had previously misused tramadol, the sample size in total were 257 children and adolescents under the control of RJVCT 1-11.

### 6. Measurement

The drafted questionnaire was developed based on a literature review, researcher objectives, and research questions including the experts on tramadol misused. Twenty drafted questionnaires were tested on Tramadol-addicted youngsters in Nakhon Sawan Province. The use of specific data with an estimation scale measurement is used to calculate the confidence value and use Cronbach's formula ( $\alpha$  - Cronbach's Alpha Coefficient). Then adjust the questions with low confidence values and according to the recommendations of the experimental sample. After that, the second experimental data collection was required to check the confidence value as close to 1 as possible. The conclusion is Cronbach's Alpha Coefficient, or all items are, more than 0.7, indicating that the questionnaire had an appropriate level.

### 7. Data analysis

The analysis includes descriptive statistics such as frequency, percentage, mean, and standard deviation. They are employed to explain personal variables, harmful drug behaviors and drug usage, tramadol knowledge, and tramadol purchase channels.

For details on life assets, upbringing characteristics, family relationships, friendship behavior, legal opinions, and health consequences, scores for each item were calculated by using the Likert scale, which was divided into five levels as follows:

- 1.00 - 1.80 = lowest level
- 1.81 - 2.60 = low level
- 2.61 - 3.40 = moderate level
- 3.41 - 4.20 = high level
- 4.21 - 5.00 = maximum level

### 8. Hypothesis testing

This research employed inferior statistics to test the hypothesis. The independent variables included gender, age, education, number of household members, number of siblings, order of being a child, parent's marital status, close care parents, offense, using behavior of drug substances, level of knowledge about

the dangers of taking dangerous drugs, level of knowledge of legal measures, life assets, channels for purchasing Tramadol, ingredients selected for tramadol use, family relationship. The dependent variable was the misuse behavior of the dangerous drug tramadol.

To test the research hypothesis, the researcher performed inferential analysis. As follows, the level of statistical significance was established at 0.05:

1) Using the T-test to compare the sample's differences means to test the hypothesis about personal characteristics such as gender and criminal background, substance use behavior, and purchasing channels.

2) Using the F-test and one-way analysis of variance (ANOVA), test whether the personal factors of age, education level, number of household members, number of siblings, marital status, parents and close parental supervision, level of knowledge of the dangers of drug misuse, level of knowledge of legal measures to control dangerous drugs, life assets, which ingredient was chosen for use with Tramadol, nature of family upbringing, and family relations

3) Compare the pairwise difference of the mean by Scheffe's method to test the pairwise difference of factors influencing tramadol misuse behavior.

## 9. Research ethics

The researcher received the certificate of research ethics from Huachiewchalermprakiet University on 24 October 2019. Before collecting data, the researcher requested permission from the Department of Juvenile Observation and Protection, Ministry of Justice, to collect data. Before interviewing the sample, the researcher used a consent form to ask whether they were willing to provide information or not. All samples are willing to provide information voluntarily.

## 10. Results

Most samples are males, ages 17 to 18 years, with low educational attainment. Most of their mothers are single moms. All samples were charged with narcotics offenses. They understood that tramadol was classified as a dangerous drug.

The sample first started misusing Tramadol at the mean age of 15 years old; the minimum age is 10 years. The maximum misused was 1 tablet/capsule per time, and the maximum was 160 tablets/capsule per time. Most of them use soft drinks as an ingredient. Tramadol use was at a moderate level. They had a habit of using drugs such as cigarettes, were experienced in substance abuse treatment, knowledge about the dangers of Tramadol is at a high level, 45.8% had limited knowledge of tramadol use, 51.8% had knowledge of legal measures to control Tramadol is moderate, and the channel for purchasing Tramadol is a group of seniors or junior friends.

Life Assets or basic costs are positive factors affecting the psychological, social, and intellectual development of children and adolescents to behave in accordance with social norms, and able to live in a strong society. It uses the essence of internal assets and external assets, comprising of 5 powers, self-power, family power, intellectual power, peer power and activity, and community power. The sample had life assets in terms of self-power, with an average of 3.35, which is at a moderate level. In terms of family power, the average was 3.56, which was high. In terms of intelligence building, the average was 3.00, which was at a moderate level. In terms of friend power and activity, the mean was 2.82, which is at a moderate level, and in terms of community power, the average was 3.09, which was a moderate level. (Table 1)

The sample had the caring care model with a mean of 3.90, which was at a high level; the control model with a mean of 2.48, which was moderate; the indulged model with a mean of 3.00, which was moderate; the abandoned model with a mean of 2.09, which was low; and the family relationship model with a mean of 4.03, which was a high level. (Table 2)

The other results were the sample exhibited moderate levels of friendship behavior, with an average of 2.99, opinions on the legal measure, with a mean value of 3.55, which was a high level, and the impact on their health condition during the use of tramadol, the mean was 3.25, which was a moderate level.

## 11. Result of Hypothesis test

The hypothesis test results are by comparing the sample mean difference with the T-test, One-Way Analysis of Variance (ANOVA), and F-test. The influences at the statistically significant level of 0.05 on tramadol misuse behaviors were age ( $p = .000$ ) as shown in Table 3,

The mean difference was then compared with Scheffe's test method. The differences between pairs are as follows:

The age difference was statistically significant at the 0.05 level. There were 3 pairs, namely, the sample aged 17–18 years had behaviors of taking tramadol in the wrong way. more than the sample of 15-16-year-old. The sample aged 19–21 years had more tramadol abuse behavior than the sample aged 15–16 years. The sample aged 19–21 years old had more misuse of tramadol-type drugs than the sample aged 17–18 years.

In terms of the order of the children, there was no difference in each pair.

In terms of ingredients selected with tramadol use that were significantly different at the 0.05 level, there were 5 pairs. There was more misuse of tramadol than in the mixed drink sample. The sample selected to mix with drinks and eat whole tablets or capsules (does not

**Table 1.** Life assets

| Life Assets               | X           | S.D.        | Interpretation  |
|---------------------------|-------------|-------------|-----------------|
| self-power                | 3.35        | .587        | moderate        |
| family power              | 3.56        | .610        | high            |
| intelligence building     | 3.00        | .552        | moderate        |
| friend power and activity | 2.82        | .746        | moderate        |
| community power           | 3.09        | .723        | moderate        |
| <b>Total</b>              | <b>3.16</b> | <b>.644</b> | <b>moderate</b> |

**Table 2.** Nurture

| Nurture                       | X           | S.D.        | Interpretation  |
|-------------------------------|-------------|-------------|-----------------|
| the caring care model         | 3.90        | .947        | high            |
| the control model             | 2.48        | 1.027       | low             |
| the indulged model            | 3.00        | .899        | moderate        |
| the abandoned model           | 2.09        | 1.036       | low             |
| the family relationship model | 4.03        | .861        | high            |
| <b>Total</b>                  | <b>3.10</b> | <b>.954</b> | <b>moderate</b> |

**Table 3.** One-way Analysis of Variance of Tramadol Abuse Behavior Classified by Age

| Source of variance | SS             | df         | MS     | F      | P      |
|--------------------|----------------|------------|--------|--------|--------|
| between groups     | 27.870         | 2          | 13.935 | 11.988 | .000** |
| within the group   | 295.251        | 254        | 1.162  |        |        |
| <b>Total</b>       | <b>323.121</b> | <b>256</b> |        |        |        |

The order of being a child in their family ( $p = .042$ ) as shown in Table 4

**Table 4.** One-way Analysis of Variance of Tramadol Abuse Behavior Classified by order of being a child

| Source of variance | SS             | df         | MS    | F     | P     |
|--------------------|----------------|------------|-------|-------|-------|
| between groups     | 10.283         | 3          | 3.428 | 2.772 | .042* |
| within the group   | 312.838        | 253        | 1.237 |       |       |
| <b>Total</b>       | <b>323.121</b> | <b>256</b> |       |       |       |

Behavior of using drug substances ( $p = .041$ ) as shown in Table 5,

**Table 5.** Difference with the T-test of controlled substance abuse behaviors and the misuse of the dangerous drug tramadol

| Controlled substance abuse Behaviors | N   | X    | S.D.  | t     | p     |
|--------------------------------------|-----|------|-------|-------|-------|
| use                                  | 218 | 2.89 | 1.124 | 2.051 | .041* |
| don't use                            | 39  | 2.49 | 1.073 |       |       |

The channels for purchasing Tramadol ( $p = .014$ ) as shown in Table 6,

**Table 6.** Difference with the T-test of channels for purchasing Tramadol and the misuse of the dangerous drug tramadol

| Channels for purchasing Tramadol | N   | X    | S.D.  | t      | p     |
|----------------------------------|-----|------|-------|--------|-------|
| yes                              | 17  | 2.18 | .951  | -2.487 | .014* |
| no                               | 240 | 2.87 | 1.122 |        |       |

The selection of ingredients for tramadol use ( $p = .000$ ) as shown in Table 7,

**Table 7.** One-way Analysis of Variance of Tramadol Abuse Behavior Classified by ingredients selected for tramadol use

| Source of variance | SS             | df         | MS     | F      | P      |
|--------------------|----------------|------------|--------|--------|--------|
| between groups     | 103.135        | 4          | 25.784 | 29.536 | .000** |
| within the group   | 219.985        | 252        | .873   |        |        |
| <b>Total</b>       | <b>323.121</b> | <b>256</b> |        |        |        |

The family relationship ( $p = .039$ ) as shown in Table 8.

**Table 8.** One-way Analysis of Variance of Tramadol Abuse Behavior Classified by family relationship

| Source of variance | SS             | df         | MS    | F     | P     |
|--------------------|----------------|------------|-------|-------|-------|
| between groups     | 10.470         | 3          | 3.490 | 2.824 | .039* |
| within the group   | 312.651        | 253        | 1.236 |       |       |
| <b>Total</b>       | <b>323.121</b> | <b>256</b> |       |       |       |

The family relationship ( $p = .039$ ) as shown in Table 8.

use other ingredients) more frequently misuses dangerous drugs like tramadol than the sample selected to drink mixed with beverages.

The sample selected for mixing with drinks and taking whole tablets/capsules (which do not use other ingredients) tended to misuse the dangerous drug tramadol more than the sample who took the pill/capsule. (Do not use other ingredients).

The sample selected all 3 types of drugs, namely: 1) mixed with beverages, 2) ingesting whole tablets or capsules (no other ingredients should be used), and 3) mixed with drugs. The behavior of taking tramadol in the wrong way was more than that of the sample that chose to mix it with beverages such as tea, coffee, or soft drinks. energy drinks, liquid cough medicine, etc. The sample selected 3 types of drugs, namely: 1) mixed with a drink, 2) ingesting whole tablets or capsules (no other ingredients), and 3) in combination with drugs. The behavior of taking the dangerous drug tramadol in the wrong way was more than the sample who took the pill or capsule. (Do not use other ingredients).

In terms of family relationships that differed statistically at the 0.05 level, there was 1 pair, i.e., the sample had family relationships at a high level. They had more misuse of the dangerous drug tramadol than the sample with family relationships at the highest level.

## 12. Discussion

The study found that 257 children and adolescents who were addicted to tramadol for the first time started taking tramadol at an average age of 15 years, and the youngest age was 10 years old, which is the initial stage in entering adolescence that is at risk of being persuaded or suggesting appropriate behavior or committing offenses more easily than other ages because they still lack good skills in life and want to try and take risks, in line with the concept of criminology, life-course theory. [13]. It is considered the most problematic age range compared to other groups and is the period with the highest number of offenses, especially among those aged 13–18.

Children and young people take tramadol in two forms: tablet or capsule and mixed with other ingredients. The main ingredients are carbonated soft drinks and liquid cough syrup, but there may be other ingredients depending on personal preference, such as Kratom 4 x 100, energy drinks, alcoholic beverages, beverages containing instant caffeine, etc. This is consistent with the data of the National Statistical Office [14], which found that "children and adolescents use various substances which are easy-to-find and mixed to act like narcotics, and they are tried because they think that it is a mixture of harmless substances regardless of its narcotic effect." From the results of the study, it was found that most of them were commonly mixed with soft drinks. Of the 202 subjects, 78.6%

had the habit of taking tramadol with a minimum of 1 tablet/capsule/time and a maximum of 160 capsules/time. Children and adolescents are at a growing age. They are inquisitive, imitative, and expressive; have a strong temper; little restraint; are weak and inexperienced; and are easily misled by others. This was in line with the theory of G. Stanley Hall, who is regarded as the father of adolescent psychology. He said adolescence is the age of storms and stress. [15] In a bad environment, these children and young people are more prone to deviant behavior and lead to wrongdoing, that is, behavior that deviates from the norms of society.

Therefore, if children and young people are habitually addicted to tramadol in large quantities and continue to use it regularly, it can lead to addiction. This is because tramadol has similar effects to morphine, which is a narcotic. It affects the development of the body, mind, and nervous system, or brain. Particularly in children and adolescents, at the critical stage of life, they experience rapid changes in their physical, mental, emotional, social, and intellectual development, facing new self-realization. It is a critical stage of life, so adaptation should be of high quality. Moreover, they must be protected and developed following the rights of the Convention on the Rights of the Child, to which Thailand is a party, and the Child Protection Act 2003, because children and adolescents are a vital force for the nation in the future. The group at risk of using Tramadol is mostly informal school students rather than formal school students because informal school students are more likely to use other drugs such as amphetamine, methamphetamine, ketamine (Ketarlar), etc. [16]

Tramadol's distribution channel is mostly from friends, seniors, or juniors, amounting to 207 people, representing 80.5%, because friends are very important to children and adolescent's society. Teenagers tend to be more trusting and intimate with their peers than their parents or family members. This is in line with the research by Tippa Chetchaowalit [17], which found that friends will become a new group of children and adolescents who are more closely connected because they spend more time at school than their family at home and are of the same age. For teenagers, friends become a whole new world where they talk, mourn, and express their feelings, dreams, and needs. It is a world that most people like and understand. Children and adolescents, therefore, focus primarily on building their identity among friends and consider acceptance from their friends important, so children and adolescents are easily influenced by their peers in their generation to lead them in the wrong direction. This is consistent with SuriyadewTrepatti's concept of life assets [18], who said, "Friends are very important to teenagers. If teenagers have good friends, it will increase the cost of living well. But if they have friends in the risk group who lead them to do bad activities, it

will result in problems in life. ”

The results of the study found that nowadays, buying and selling tramadol through social media is the most concerning issue because there are many private parcel delivery businesses and there are no strict checks, making it possible for children and young people to easily buy and consume tramadol. This is consistent with the study by WarangkanaChankong and PajareePhonprasert [19] on guidelines for immunization and drug prevention among children and adolescents outside the school in Kamphaeng Phet Province. It was found that “easy access to online media is an external factor that drives children and young people to drug addiction,” as children and young people are Generation Z populations. Most of them use text-based communication on a mobile phone or computer screen instead of talking.

Plus, smartphones have become the 33rd organ of Gen Z according to the Generation Z feature classification. [20] These people are the demographic that was born and grew up with the advancement of technology, making it easier and faster to learn and access information based on their interests. Therefore, the reason for the increase in the arrests of illegal manufacturers and smugglers of tramadol is that it follows a marketing mechanism when the demand for those who bring tramadol to market is increasing. As a result, the production, market for sale, and illegal sale of tramadol for profit have also increased.

In terms of knowledge, the results of data collection of 257 children and adolescents who had used Tramadol in the wrong way found that 115 people in the sample received a score of knowledge about the dangers of Tramadol use in the wrong way, not more than half, representing 45.8%. Of those, 133 people had a moderate level of knowledge of legal measures to control tramadol, representing 51.8%. The importance of educating children on the dangers of drug misuse and legal measures for the control of dangerous drugs for children and young people is consistent with the Convention on the Rights of the Child on Social Welfare Principles for Children to protect children and adolescents and to provide children and adolescents with information that is beneficial to the development of health care, proper behavior, and prevention of problems for children and adolescents from misusing Tramadol. It is also in line with the Child Protection Act 2003, which is a law that protects the welfare, development, and rehabilitation of children, with a child’s best interests in mind.

### 13. Conclusion and Recommendation

The study reveals that there is growing abuse of tramadol in Thailand. Tramadol is very common among children and teenagers. They mixed Tramadol with coffee, Kratom juice, soft drinks, energy drinks, or alcoholic drinks to mimic the effects of narcotic sub-

stances. As a result, a quiet hazard that is becoming a concern in Thai society is a surge in harmful drug usage among children and adolescents, leaving them unable to control their desires for narcotic substances. Particularly concerning is the mental health of drug addicts who need to take drugs all the time and require more. But this is the result of only one piece of research. More research is necessary to truly understand the impact of tramadol on Thai youth.

Based on the findings, the researchers would recommend the Thai government should have policies in place to prevent dangerous drug abuse of children and adolescents by strengthening the life assets of children and adolescents, which include self-power, family power, intellectual power, peer power and activity, and community power, as well as the designation of safe areas for children and adolescents that facilitate the psychological, social, and intellectual development of children and young people to be able to grow up in a society with quality, with appropriate behavior, and be an important force in the country’s further development.

The Drug Act 1967 should be amended so that it can be enforced in practice by increasing the rate of punishment for those who violate the law under the Drug Act 1967 following the current economic and social conditions of Thailand and increasing strict control measures on illegal drug distribution channels, especially the buying and selling channels through social media, which are the channels used by teenagers utilizing parcel delivery by post or private There must be a process that can check the items and the list of recipient-sender accurately, etc., to prevent illegal parcels from being transported. [21]

All agencies involved in the Drug Act of 1967 should formulate effective strategies and measures for supervision, investigation, and suppression to reduce the supply cycle that makes buying and selling dangerous drugs easy.

The Ministry of Public Health must be the primary source of information about the dangers of drug abuse and related legal measures, delegating authority to agencies such as the province’s public health office, which must be in charge of organizing training or creative activities to educate students and teachers within the school.

The Department of Children and adolescents Affairs must be the primary unit in charge of strengthening the lives of children and adolescents of all ages by defining a strategic framework in five areas, namely: self-power, family power, intellectual power, peer power and activity, and community power, as well as developing an annual operational plan, identifying clear project plans and activities, and setting indicators for monitoring and evaluating the opera’s success.

Family institutions must evolve to meet the needs of Generation Z populations that were born and raised in a technologically advanced era. Parents and guardians

must closely observe, monitor, and monitor their children's behavior, especially their access to social media because it is a medium that has a great influence on children and adolescents, as well as learn to understand children and adolescents in this era by using reasoning in cultivating and guiding them to be aware of the problems and effects of dangerous drug use.

#### 14. Limitation of Research

The sample was only those children and adolescents who are under the control of the Regional Juvenile Vocational Training Center (RJVCT) 1-11 and were willing to provide information voluntarily. In fact, there are a lot of young people in the educational system who misuse tramadol, but they do not want to draw attention to themselves. Thus, there was a limit to accessing a lot of samples.

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