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Objectives

The ONCB Journal is an academic journal on narcotics. It aims to be a medium of dissemination and exchange of narcotics control information among scholars, practitioners, and the general public. In addition, it is also intended to facilitate the collaboration and implementation concerning narcotics control as well as encouraging public involvement in illicit drug monitoring and control.

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Editorial

The ONCB Journal has entered its 39th year, which is a transitional period of the government. Moreover, the ONCB has formulated a national policy and plan on the prevention, suppression, and resolution of drug problems (2023-2027) according to the Narcotics Code to determine the direction of how to drive solving drug problems in an integrated way. In this regard, the ONCB focuses on the reduction of the severity of the drug problems until they do not affect administration and development of the country by aiming to concretely and sustainably solve drug problems. There are five articles in this issue of the ONCB Journal as follows. The first article was titled "Drug Agenda; A National Agenda : 12 Issues for Review and Recommendations to Effectively Overcome the Drug Problem within 4 Years." This article is a policy proposal from the author's perspective that hopes to drive solving drug problems in a comprehensive, balanced, precise, and efficacious manner. The second article was titled "The Effect of Kratom Plant Use on the Nervous System of Methamphetamine and Heroin Dependence." The article points out that kratom can be used to reduce methamphetamine and heroin addiction. It is an advancement in the development of knowledge of utilizing addictive plants. The ultimate goal is that Thailand can produce medicines used to treat drug addiction by herself. The third article was titled "Cocktail Drugs on Social Media." It exhibits the changing patterns and behaviors of drug use. The trend of the drug use has obviously increased for three years. The fourth article was titled "Substances Use among Thai Teenagers, 2022." This article shows the types of drugs that teenagers in each sex and age group commonly used and the situation of cannabis use after the revision of law. Finally, the fifth article was titled "Risks Associated with Substance Abuse among the Youth in Schools." The article finds that drug abuse posed risks that affect juveniles' lives in terms of learning, violence, quarrels, and physical and mental health.

The ONCB Editorial Team hopes that the ONCB Journal is another channel for disseminating academic works and research on narcotics, expanding knowledge, as well as being a part of the development of policy proposals to solve drug problems. If any readers have any comments or suggestions, the ONCB Editorial Team will graciously accept them to continue improving the ONCB Journal. Finally, the ONCB Editorial Team would like to thank all the faculty members and authors who have participated in the ONCB Journal and all readers who always pay attention.

(Mr. Tipamest Sungkhawanna)
Executive Editor and Publisher

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Drug Agenda; A National Agenda : 12 Issues for Review and Recommendations to Effectively Overcome the Drug Problem within 4 Years

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Introduction

When mentioning the words "National Agenda", it always refers to one of the current problems which is quite serious and the government needs to declare it as a significant agenda or a national agenda to show its earnest to tackle that problem or to make its less severe or to eradicate it by mobilizing all national resources and forces.

The drug problem has been continually defined as a national agenda starting in 2003, since then every government has declared that tackling drug problem is a national agenda. Some governments even declared as their policy during their election campaigns, some declared as their policy during their statement to the Parliament, some declared it after running the country.

If considering the drug problem in general, it is found that the problem is distressing as it has been defined as a national agenda for over ten years but it still has not been alleviated as expected. What is the root cause and how it should be addressed. It is believed that the new government which will come in to run the country from now on, drug agenda will be once again declared as a national agenda.

The following 12 issues are policy recommendations based on a hopeful expectation to effectively address the drug problem, they may be more or less, useful to those who are responsible in tackling the problem at different levels to drive this national agenda to be mobilized all-around, in a well-balanced manner, and right to the point which will be beneficial to community, society, and the country as a whole.

The 12 Issues for Drug Agenda; A National Agenda

If aiming that the drug tackling policy will be effectively carried out, it should not be carried out like burning hay, 12 policy issues should be taken into consideration as follows;

The 1st Issue : The Assessment of Drug Problem in Thailand which Needs to be Clear Before Doing,

It is found that several parties have different views depending on their stances, the impact of each party makes it difficult to find solution, for example, the political parties which run the country as the government and the others which are the opposition side; those who are responsible for addressing the problem and the people who receive the impact from the problem etc. In this case, the data and statistics which will be presented hereafter will serve as indicators of the problem rather than just showing a feeling. They are the data on drug seizures which are used worldwide in addressing drug problem, the data are from 2003-2022 to look at the drug problem in the country during

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20 years whether it has been accelerated or alleviated. They are as the followings;

1. The statistics during the past 20 years, considering the total population of the country which has increased at 4.90%, but if considering the number of the arrested persons during the same period it increased as high as at 84.48%, comparing to the arrested persons per 1,000 population, it comes out that from the ratio of 2.29% per 1,000 population in 2003 it increases to 4.03% per 1,000 population in 2022, which indicates the accelerating of the problem as appears in the following chart;

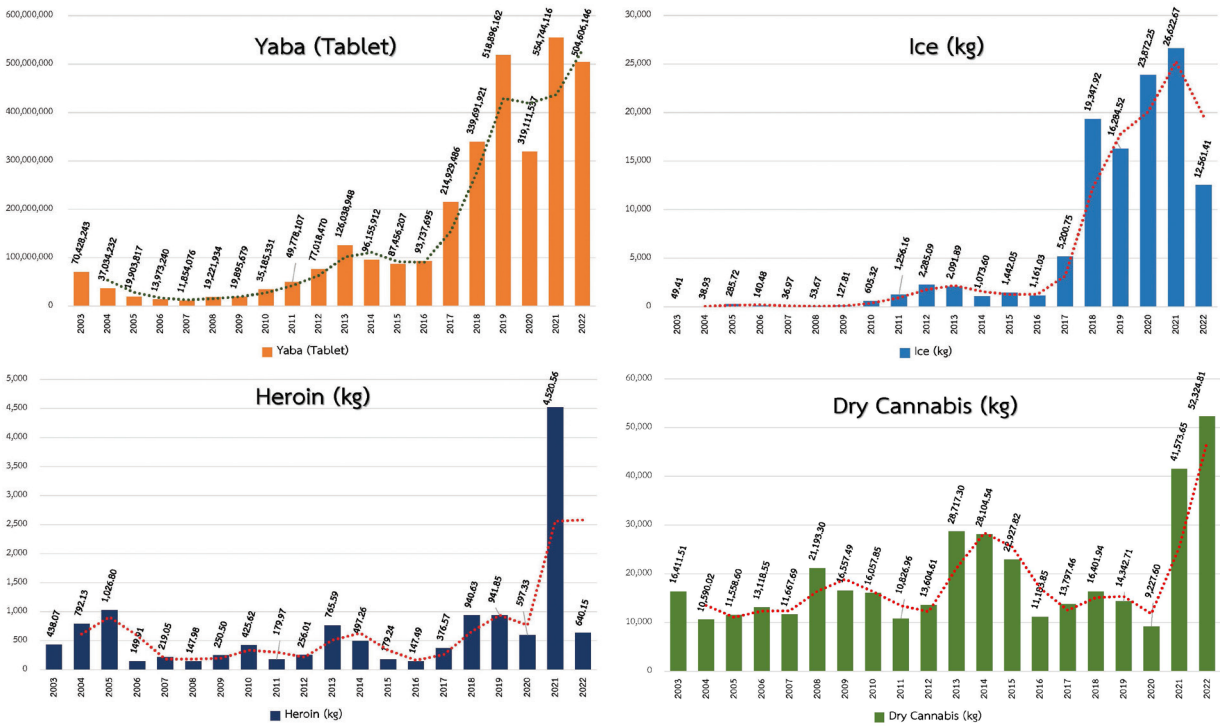
The Chart Compares the Statistics of the Arrested Persons during 20 Years per Thousand Population

Fiscal Year	Population		The Number of Arrested Persons		Ratio per Population
	Number	% Increase	Number	% Increase	
2003	63,079,765	-	144,580	-	2.29
2022	66,171,439	4.90 %	266,726	84.48 %	4.03

Data Source : Operational Center ONCB

2. Drug, when considering the increase of types of drugs in the past 20 years, it is found that the seized drugs include Ya-ba, ICE, heroin and dry cannabis have tendency to increase as followings; Ya-ba increases 616%, ICE 25,322%, heroin 46% and dry cannabis 218%. This indicates that during the past 20 years all types of drugs increase as appearing in the following chart;

The Chart Shows the Amount of the Seized Drugs during the Past 20 Years



Source of Data : Operational Center ONCB

3. The UNODC data showing that during the past several years, drug production sources in the Golden Triangle Area have greatly increased their products both Ya-ba, ICE and heroin leading to the increasing of the large volume of drugs within and outside the region, with no exception to Thailand.

Accordingly, it can be assumed that the drug condition in Thailand has been accelerating during the past 20 years, so this is the proposition that all parties concerned should consider it as a national agenda.

The 2nd Issue : the Policy on Safe Society from Drugs - Policy-based Target should be Newly Set by the Government

If considering the policy-based target on drug of each government, it can be found that several governments aim at drug free or no drug at all, so they often use the strategies and activities to achieve that target. Anyway, it is found that their target seems to be far from success. This is not only for Thailand but the same situation occurs in many countries worldwide, leading to the change of the target framework in overcoming drug problem of many countries. The new framework focuses more on building safety from drug problem, in other words drug problem cannot cause any impact. This is the new tendency in setting the drug target into different level.

This new target framework is not only beautiful words but it means the changes of conception, vision, target, measures, activities, operational system which are completely different from previously in order to achieve the target with the following significant idea bases.

1. Drug should not be considered as a hideous substance that should be completely eliminated as it is impossible to achieve this target.

2. Withdraw the conceptual framework of getting rid of drug to zero.

3. Drug users will be classified into 2 main types comprising those who cause impact and those who do not cause any impact. Most drug users are those who do not cause any impact, as for those who cause impact are those who have addiction symptoms, those who have psychiatric symptoms and those who have tendency to commit violent behavior etc. The set target should give priority to those who cause impact, the implementation should not be generalized like casting a nest.

4. Causing impact means impact towards family, community, society in terms of violence, crimes and safety towards life and assets etc.

5. Classifying the types of drugs, making more use of drug in different ways, appropriately adjusting the relation between human and drug to become more flexible etc.

The national drug agenda of the new government should provide the clear signal towards policy-based target to build safety from drug and prevent any impact towards family, community and society. If the target is achieved it will help prevent violent crime caused by drug, the society will be safe and the people will have confidence. If the policy signal is set under this framework it will lead to the change in implementation of the whole system.

The 3rd Issue: the Operational Pattern of the National Drug Agenda Is a Repeated Cycle - the Trap that may Lead to a Quagmire.

The national drug agenda which has been continually set during the past 20 years forces all the concerned agencies both at policy and operational levels to drive forward their drug overcoming plans to the point that it can be seen as a pattern or the collective practices which have been inherited for a long time until they become permanent practices in every drug operation. If they are still being carried out in this way, it can be believed that when there is another national drug agenda, the same operational pattern will come back again and become a repeated cycle as follows;

1. The cycle in addressing the problem has 5 circulated issues;

1) At the beginning of each operation, suppression activity always leads other activities since it can be driven rapidly with clear result and it is often proclaimed in public media easily. This creates the images of using operational force

such as setting up a line, making arrest, raid, blockade, risk factors, entertainment places, setting up checkpoint/inspection point, urine test, seizure of drugs, asset confiscation etc. Such images can be seen in every province, during those operations, there were a large number of arrests of drug offenders both users, those who have in possession, and small-time drug dealers were put into the prisons all around the country leading to the problem of congested prison.

2) The mobilization of the work in community would start with survey, community-based implementation measures which were set in the working manual, those implementation measures were repeatedly carried out till the villagers knew the technique of the officials or even knew that they mainly focused on quantity.

3) The treatment of drug users in community area started with bringing them to treatment camp or behavior adjustment camp, during the promotion of the implementation plan, more drug users were mobilized to undergo treatment and the number would gradually drop after the implementation plan was over. This has become regular practices. During the pandemic of COVID, the number of drug users who were sent to behavior adjustment camp dropped, only treatment at clinic was available.

4) In overcoming drug problem in later years, the government agencies always played leading roles, whereas the roles of community/people were less, leading to unbalancing and the public sector had to bear the burden on working for the success, the community became claimant rather than the owner of the problem, or they had the roles that were requested by the government sector. The roles of the government sector had limitation as when their mission was complete, they considered it as a success without truly considering the quality of the outcomes, whether or not they could really overcome the problem.

5) The issue of unity in policy commanding when the drug problem was declared as a national agenda, the government agencies in the central area at ministerial and department levels often issued implementation orders to their subordinated agencies in the area for further implementation such as handling of drug users, and setting implementation target etc. In many cases, the implementation measures had disparity led to operational problems of each agency on how they should implement for example some agencies set the target on the number drug users, some set the target on the number of arrests which caused the problem in using the number of drug users which was already managed by another agency but bringing these number of users to be the target of their agencies.

6) The target was set as quantitative counting unit, outcome-oriented determination or impact-oriented determination is very rare. The work of the government agencies, therefore, aimed at achieving quantitative target. There was even a saying that their missions achieve all the set targets, still the problem remains serious.

2. The Result of the Cycle

1) In every implementation of the national drug agenda, at the start, there were riotous operations from the government agencies especially drug suppression, using the large number of forces in every province, the media proclaimed the news with high frequency and after that it would drop down to normal condition.

2) The result of the implementation of the national drug agenda in urgent period, every time when drug wiping out operations were mobilized to create the clear result within a short period of time. These kinds of operations usually had easy target, with no complications such as drug addicts/drug users, drug couriers, small-time drug dealers who were also drug addicts, drug dealers, those who have drug in possession, drug traffickers, drug users in various risky places etc. Those people were the labor or victims of drug, which were the lowest structure of the pyramid which could always be replaced by new successors.

3) The operators in overcoming drug problem at different levels may have fatigue or became apathetic to the operational pattern of the national drug agenda until it became their limitation to initiate or create new ideas to address the problem. So, they kept on adhering

to the old practices, so there were still important problems which could not be solved or could be solved in a vey small scale and the problems still existed, they were such as the followings;

- The area which still has continual severe problem of trade, import or export of drug for ten years.
- The area where there is still the severe or high epidemic of drug continually.
- The drug syndicate/large drug-dealers group which have developed to commit other crimes.
- The group of drug users/chronic drug addicts.
- The group of drug users/drug addicts who have developed psychiatric symptoms and are risk of committing violent crimes.
- The group of people who are involved in drug and have repeated behaviors.
- The group of government officials who has behaviors relating to drug.

4) The areas and those groups of people mentioned above have not been addressed completely, making the drug problem remains serious at both area and the overall picture. This shows that the declaration of the national drug agenda in the past did not cause any impact towards those drug problems. Some problems have changed greatly and caused impact on violent crimes towards family, community and society more than normal level. Thus, the significant issues which should be taken into consideration are those groups of problem which remains serious and how they can escape from the national agenda on drug throughout the past years. This may be the answer that all the implementation measures of the national drug agenda have not enough depth to exterminate these groups of problem.

In conclusion, the national drug agenda in this new round, if the processes are carried out as previously, the outcomes will be the same as in the past. There may be the images of riotous operations at the onset depending on the weight of policy pressure, when coming to a certain level when the pressure is alleviated, everything will come back to the old condition like a circulated cycle and leaving those serious problem to be existed in such cycle.

The 4th Issue : the Core Policy to Enhance International Cooperation - the Policy which Needs to be Carried Out, Though It is Beyond Control

The Golden Triangle Area remains the area for production, trade and export of drugs to many countries globally for more than half a decade, it is considered to be 1 of the 3 main drug production areas of the world. During the past 20 years, more synthetic drugs have been produced including Ya-ba, ICE, heroin etc., these drugs have been trafficking into Thailand. It can be assumed that almost all the drugs which are trading and spreading in Thailand come from the production sources in the Golden Triangle Area. So, there is a concept that if more drugs are intercepted before being trafficked to Thailand, the more drug problem in Thailand will be alleviated.

If time can be turned back to the past half of decade, the concept of intercepting drugs from the Golden Triangle Area especially from Myanmar and Lao PDR. to Thailand is still far from success. This is due to the facts that the Golden Triangle Area has many dimensions of combined problems, it is not only drug problem, it includes international politics and ASEAN politics , the problem of geo-politics, the conflicts between ethnic groups in Myanmar, the roles of the armed forces in Myanmar, poverty, modern international crimes, the special administration area of ethnic groups in Myanmar etc. Even at present, the political situation in Myanmar becomes more complicated with serious conflict, the Myanmar government has to deploy all its forces to overcome the political problem, as security is considered its first priority, not drug problem. From the mentioned limitations, more drugs are produced in the Golden Triangle Area, the more the political conflicts Myanmar has, the more gaps or conditions to increase the drug production in the Golden Triangle Area.

The Policy Recommendations on International Cooperation to overcome drug problem is one of the most significant points by

1. Playing the core role, the Royal Thai Government should play the core role in enhancing the international cooperation level both from outside the region and within ASEAN Member States especially the sub-regional countries which suffer from the impact of drug from the Golden Triangle Area.

2. The roles of the government leaders, push forward the government leaders of the countries which suffer from drug problem from the Golden Triangle Area to have agreement and commitment to enhance cooperation on drug control in various formats to build up the strategy on interception of drugs from the Golden Triangle Area.

3. The 5 Year Cooperation Plan, drive for the 5 Year Cooperation Plan on the interception of drug from the Golden Triangle Area, by improving cooperation in all vital measures, setting up clear mechanism and joint operational forces.

4. Improve cooperation with some countries, drive for the improvement of various formats of cooperation with the main countries in the Golden Triangle Area such as Myanmar, Lao PDR, China etc. to keep up with the drug situation in the Golden Triangle Area.

5. Provide assistance, the Royal Thai Government will serve as the core in coordinating with various countries to provide assistance to the countries in the Golden Triangle Area in order to strengthen their fight against drug problem and other related problems in the drug origin countries.

6. Integrated missions, the Royal Thai Government will seek cooperation from the related countries to jointly suppress and overcome drug problem as well as related crimes such as on-line gambling, money laundering etc.

However, it should be aware that there is still large volume of drug in the Golden Triangle Area which are ready to be smuggled into Thailand continually. Those drugs cannot be eliminated and still caused the serious epidemic problem in various areas in the country.

The 5th Issue : Proactive Policy to Cope with the New Form of Drug Crimes to Prevent Them from Causing Impact towards Security, Safety of Community and Society - New Proposition, New Problem

Some few years ago, new form of drug crimes have emerged which is different from the past, though the national drug agenda has been implemented for many times, the problem does not alleviate, on the contrary, it has dimension of more violence and complication to the point that it causes impact more than the normal way of living, the crimes can be classified into 3 types, namely;

The 1st type, the violent crimes which affect life, human-body, community and society which is over the normal level such as committing of crimes by the group of drug users who has mental symptoms or psychiatric symptoms has been increasing both in terms of frequency and violence level. In the past, the government has not set the systematic and clear proactive measures to effectively cope with the problem, only the normal system of the concerned agencies has been carried out.

The 2nd type, organized crimes which link into network, many types of crime are committed and they are connected both domestically and internationally such as money laundering, entertaining places, on-line gambling, drug, corruption of officials, aliens etc. Thus, several acts need to be enforced in order to cope with those organized crimes. At present, the government still lacks of integrated design to enforce several acts effectively, it still focuses on the roles and authority of each agency rather than the real integration. Those organized crimes play a huge role towards grey business structure in Thailand.

The 3rd type, drug crimes which use advanced and modern technology such as the progress of transportation and logistics and the advance of on-line system. Both technologies have brought changes in format, commanding,

coordinating, transport, trafficking of drugs as well as trading contact etc. towards their destinations. This has changed the cycle of drug trading and smuggling, the new technologies have played increasing roles leading to the convenience, safety and intimacy in drug supply chain and can reach out to all consumers thoroughly. By this new technologies, it becomes much more easier than using the direct network of the drug related persons.

All 3 types of crimes, which are currently faced by both the government and the concerned agencies, but they still use the old conceptual framework, mechanism and strategies so they cannot keep up with the change of crimes. These crimes increase their violence, the national drug agenda of the new government if it does not put more weight on those crimes and adhere to the old conception framework, then the problem will not be solved. It is necessary to prepare for readiness in mechanism, tools, personnel, legal authority, and to strengthen the integration to be clearer. The following are the legal recommendations;

1. Towards the Violent Crimes

Readiness to cope with the violent crimes which affect life, human-body, community and society should be built up. The government should design the structure, mechanism and system to cope with psychiatric drug users and its related causes to reduce the violent crimes in the area. The government should also set roles, mechanism, structure, clear assignment of responsibility, assessment the size and the volume of the problem and the potential to cope with it. Moreover, the government should urgently prepare for the effective development plan, building up prevention system for those violent crimes both by conducting survey and making assessment on the high-risk group, arranging for intervention measures to prevent, to forward, to give warning and to suspend any incident, providing for sufficient treatment of the drug users group who have psychiatric symptoms from drug or from other causes, preparing for returning back to society as well as continual tending, following up, vocational development, acceptance of community and surveillance etc. It should include the evaluation on effectiveness of the system, it should not be carried out as according to fate.

2. Towards the Syndicate Crimes

Building up readiness on the suppression of the syndicate crimes which have connections with various types of offences, which are considered modern crimes and have grown quickly. It is necessary that the concerned government agencies need to organize the system to support high-level integration, each agency should not work separately as the way they do currently. The government should consider reorganize all government agencies which can be condensed and are different from the format of working group integrating mechanism, tools and the use of legal authority in several acts. This should include the operational units of the concerned agencies to jointly work together in a systematic and unity way and can enforce several acts of various agencies. This kind of integration has never clearly existed in Thailand, the interesting model is in the USA which can integrate the enforcement of the laws in the area where there is intensifying drug problem and it cannot be solved by normal force. This integration is known as HIDTA/High Identifying Drugs Trafficking Area, which should be applied in the new drug national agenda.

3. Towards the Crimes Which Use Technologies in Transportation and Communications

Building up readiness to cope with the crimes which use logistics and on-line technologies which have tendency to change the structure of drug supply chain in Thailand both in terms of format, trading structure, communications, selling, smuggling, finance of the modern drug business which replaces the former drug dealing and creates direct communications between producers or dealers and users, reducing the roles of intermediary. This means that the drug distribution structure is no longer a vertical structure, it becomes a horizontal structure. Therefore, it causes the extensive spreading of drugs. The former drugs

dealing and spreading will have no more roles to play or will have more limited roles. Recently, the government concerned agencies have taken some actions but it is still limited and cannot keep up with the leaping technology which is rapidly developing, so they cannot keep up with this new flow of technologies.

Those 3 types of drug crimes in the modern era confirm that the national drug agenda should strengthen the policy on this issue and should have implementation that delivers the clear outcomes. This also includes the assignment of roles, structure organization, mechanism, high level integration, sufficient and modern operational tools, setting appropriate target and key performance index etc. to alleviate the problem.

The 6th Issue : the Policy on Drug Suppression and Law Enforcement in the Judicial Process - Focusing on Structure, Honesty and Balance

To prioritize on the suppression and dismantle of the structure of drug trading syndicate, more cutting down on their financial cycle should be carried out, the following policy recommendations on drugs suppression and law enforcement are proposed;

1. Core Policy, to destroy the structure of the main drug syndicate, to break up their financial cycle, power and influence, related benefits by enforcing integrated judicial process with honesty and effectiveness.

2. The Policy to Intercept Drugs along the Border, to reduce the large volume of drugs to be smuggled into the country by strengthening effectiveness in intercepting chemicals and drugs along the main border area, increasing effectiveness in intelligence on drugs outside the country by using interception technology along the important borderline, diminishing the structure of drugs trade and its finance along the border, breaking up drugs smuggling cycle which uses logistics system as well as developing and strengthening the community along the border.

3. Towards the Main Drug Syndicate, to break up drug trading cycle by focusing on suppressing the main drugs trading structure, giving priority on dismantling drugs trading and financial cycles by integrating legal authority from all related acts and all types of offences. Developing intelligence system, investigation and law enforcement which support each other.

4. Enhance More Integration, in terms of the concerned agencies, forces, legal authority to cover all types of offences by building up adequate forces for investigation, suppression of the main drug syndicate, organizing management mechanism between the concerned agencies to build up unity under the joint directing system and the full integration of legal authority.

5. Improve Technology on Suppression, providing development for technology agencies to enable them to investigate and to suppress drug syndicate with use technology and social media for drug dealing and committing other modern crimes.

6. Prevent and Suppress Corruption, and the abuse of power by all government officials to exploit drug by building up the system to control and to check up the abuse of power such as claiming for benefits, as well as imposing severe punishment to build up confidence in fairness and justice and give protection to the operational officials who work with sacrifice and intention from being defamed.

7. Prompt Operation to Alleviate the Suffering of the People, by assuring that all provinces and districts will organize integrated force to serve as the fast-moving team to alleviate the suffering of the people from drug problem.

8. Judicial Integration, the judicial agencies should effectively coordinate in collecting evidences, prosecuting and imposing penalty to amplify the outcomes to the related drug syndicate and to break up financial cycle by enforcing all related acts.

The 7th Issue : the Policy on Building the Safe Area from Drug throughout the Country with the Continuity and for the Long Term

Under the new policy, the drug problem should be addressed as area-based problem for the continual long-term framework, without disruption or change. Area-based roadmap should be prepared and activities throughout the process

should be organized, with evaluation for further continuation, match with reality and focusing on building safe area, not drug free area. It is necessary to adjust the concept in overcoming drug problem.

1. The Previous Weakness, to overcome the area-based drug problem, it cannot be accomplished within one year, on the contrary, it needs to be carried out continually, so it is necessary to have roadmap, activities, working process to achieve the targets completely. In the past, the area-based implementation was not considered as the long-term roadmap, there were no continue activities as according to the condition of each area, not well-planned activities (they jump back and forth), so drug problem could not be solved in a sustainable manner.

2. The New Dimension on Area-Based, focus should be made on sub-district level as they are the national administration organizations. They have their area, population, local/area administration, data, budget, government agencies which are flexible than village/community.

3. Area Assessment to indicate drug situation is the significant matter that the government should take action if they would like to tackle the problem continually in a sustainable manner as according to the new framework. The assessment should be made in 2 related factors/elements, namely;

1) Problem Assessment by using appropriate well-rounded database to reveal the condition of drug problem in each sub-district which should be the data base that can be individually identifiable instead of the data from the survey of opinion, the data are such as the data on drug seizure, the data on treatment of drug users, the data on drug crimes, the data on treatment of psychiatric drug users, the data on those who underwent treatment and are under the following up process, the data on those who are under probation, the data on the exonerators, the data on violence from psychiatry, etc. The data of those persons should be classified into different levels of problem respectively which comprising no problem, some problems, moderate problem and serious problem. This has to be as according to the set criteria which can be confirmed by the data of each person. This will enable the responsible officials to analyze and understand the real condition of the problem clearly, which area is in which condition.

2) The Assessment of the Strength of the Area, this is the new framework which should be carried out to enhance the roles of area and community in overcoming drug problem which have been carried out for over ten years. Certainly, some areas still keep their vigilance, whereas some areas may lose their strength or still have some strength. The strength survey of each area will help continue the implementation to reach the right point which is rather better than implementing it without knowing the real strength capital or looping the pace which will waste time and is not cost effective. The assessment of the strength of area in overcoming the drug problem may be carried out in several phrases, namely;

The 1st Phrase, assess the areas which have participated in activities to overcome drug problem whether they still have strength or not in terms of leader, grouping of community/ community, activities related to drug, establishing community, availability of various mechanism, self-dependence, etc. to learn the real situation.

The 2nd Phrase, continue the activities to build up strong community to accomplish the target of the roadmap on the strength area by starting on drug related activities which can be developed to problem solving in a sustainable manner.

The 3rd Phrase, prepare surveillance to prevent retrospective problem which is like area preservation by considering how to organize activities to accomplish this phrase and to prevent the retrospect as occurred in many areas due to the lack of good surveillance system.

4. Area-Based Dimensions, the New Dimension, has different dimension by focusing on drug safe area with the following area-based dimensions;

1) Operation Target Area needs to prevent drug problem and other related problems from creating impact towards safety of person, family members, community and the people have confidence.

2) Expansion Roles, encourage more participation of community, civil society, various groups of volunteers in overcoming drug problem, not just focusing on the roles of the government sector as the main roles, which is an essential point in the area level whether or not it will be sustainable.

3) Classification of Groups of People, the group which needs to be urgently classified are not only drug users-drug dealers, it should be classified into various groups such as drug users/drug addicts, those who have the risk to cause impact, and those who underwent various activities etc. Each type should have special activities to prevent any impact which may occur.

5. Joint Associate, to overcome the problem in the area is the joint mission between the government sector and community by taking into consideration the severe level of the problem, the strength of community to continue appropriately, the strength of community leader and the urgency of the target area comparing to other areas, which kind of activities should be carried out;

6. Setting up Area-Based Plan, it is necessary to have the plan to overcome drug problem and reduce impact in the area under the guideline framework on area-based drug problem solving, before setting up of target area at sub-district level. The activities should not be carried out just to achieve the target set by the central agencies.

The 8th Issue : the Policy to Reduce the Number of Drug Users/Drug Addicts and to Alleviate the Impact - the New Conceptual Framework in Coping with Drug Users/Drug Addicts

Reducing the number of drug users/drug addicts is considered the policy on drug demand reduction which should be carried out in parallel with drug supply reduction policy to create balance and will lead to success in overcoming drug problem, the following main policies should be set;

1. Sending policy signal to drug users/ drug addicts as they are the people who need to be treated as according to the public health principles which cover health problem and basic problems completely. These people should be classified by the level of individual addiction to enable to handle them appropriately and to prevent them from causing any impact towards family, community and society.

2. Classifying Drug Users/Drug Addicts as According to the Addiction Level of Each Person, this is the preliminary guidelines before appropriately handling with drug users/drug addicts. It is necessary that classifying drug users/ drug addicts as according to their level of addiction is seriously carried out by putting them into the following groups; drug consumers/drug users, drug addicts, drug addicts/chronic drug addicts, drug addicts with psychiatric symptoms, drug consumers/drug addicts who have the risk to commit violent crimes etc. This may include classifying as according to the sequence of implementation such as those who completed treatment, those who are on the following-up, the consumers who are on probation, those who are recently released etc. for the benefit in overcoming the problem individually.

3. Development of the Screening Center, by enhancing their capacity to serve as a mechanism in evaluating and classifying drug consumers/drug addicts precisely and building up readiness of the screen centers at province, district and sub-district levels respectively.

4. Set up the Urgent Target for the Groups of Drug Consumers/Those Who Need to Be Handled, by determining that the groups of drug consumers/drug addicts who are at risk to commit violent crime and cause impact towards security of life and human-body towards family, community and society. These are the groups which need priority implementation namely, the chronic drug addicts, the drug addicts with psychiatric symptoms, the addicts who are at risk to commit violent crimes towards family,

community etc. to protect and reduce the impact on drug problem towards society. It should not be implemented as casting of a nest (generalized).

5. Develop the System and Mechanism, expand the mechanism, operational system towards drug consumers to cover all steps, not only focus on treatment to ensure that the framework of drug consumers comes to a full cycle by extending the treatment and rehabilitation services, special treatment center, community treatment system, following-up and assistance system, social rehabilitation and assistance system, to cover all the implementation processes.

6. Focusing on the main operations, which will reduce the impact from drug consumers/drug addicts towards family, community and society, including

1) Towards those with psychiatric symptoms, drug consumers/drug addicts who are at risk to cause impact or those with psychiatric symptoms and need appropriate treatment, it is necessary to arrange for sufficient treatment center for these groups, as well as to provide following-up, assistance, surveillance, counselling and continual treatment to prevent any social impact.

2) Towards drug consumers/hard-core or chronic drug addicts, support and extend the guidelines for harm reduction to drug addicts, provide proper medicine with the condition to enable them to live a normal life and not to cause harm to family and society.

3) Towards drug consumers/drug users, they should be encouraged to undergo voluntary treatment. Extend the solicitation system for drug consumers to undergo treatment as according to section 114 of the Narcotics Act as well as give priority on treatment for these group of drug consumers/drug users in community.

4) Towards the drug consumers who need to be arrested, there should be limitation in making arrest according to the law, instead, it should focus on the drug consumers who cause impact towards society or the drug consumers who commit other offences or those who refuse to undergo voluntary treatment. These groups should be the main target of arrest.

5) Extend the operation to cover all processes, strengthen the following-up, tending, assistance, and rehabilitation on every drug consumer/drug addict as well as extend the operation to cover vocational assistance, vocation, finance, education, until they can return back to their normal life and will not cause any impact towards community and society.

6) Promote non government's mechanism, promote, extend the role and build up professionalism to private organization, community, voluntary group, mass group and other interested groups. Encourage them to play the roles in following-up, counselling, tending, providing assistance to those who underwent treatment and need special following-up to adhere and assist them to return to their normal life and not cause any impact.

7. Build-up and Continue Sustainable Mechanism by extending the overcoming of basic problems in vocation and job to those who underwent treatment by organizing tending, assistance and rehabilitation, system, mechanism, arrange for skill development center and there should be certification for those who finish the training course, find appropriate job for them by seeking cooperation from business organization and private sector in various provinces to solve the problem in a sustainable manner.

8. Expand the Appropriate Handling of Drug Consumers/Drug Addicts by Classifying Them Individually, use new guidelines towards drug consumers/drug addicts such as harm reduction from drug, case diversion, alleviation of criminalization towards drug consumers/drug addicts, which needs to use each guideline appropriately by taking into consideration each individual who may need different guidelines.

The 9th Issue : the Policy on Community Stops Drug by Community; the Participating Roles of the Community in Being the Problem's Owner Together with the Government Sector

The national drug agenda will be accomplished, it is necessary to enhance full community involvement by stimulating their awareness and creating the sense that they are the owner of the problem which will make the

community strong, the followings are the policy recommendations;

1. Sending the Clear Policy Signal, the government has to declare the policy on building up sustainable community to solve drug problem by using the power of community as the owner of the problem to solve drug problem in their own area. The government should give full support in various fields to strengthen the community.

2. Stimulate the Vigilance, support grouping and promote grouping of community leaders of various organizations in the target sub-district to be in unity both community organizations, local organizations to build up integration to prevent and solve drug problem and related problems.

3. Set the Plan on Community Alleviates Drug Problem, support those community organizations to cooperate with the government sector in preparing drug alleviation plan and impact reduction in the target area under the data and new guidelines framework to prevent any impact in the target area to build up drug safe community. The plan should have clear timeline which should be a continual period to the setting up of sustainable community.

4. Promote the Roles of Community as the Owner of the Problem, enhance the roles of community in participating in drug prevention activities by making surveillance, deterrent, area preservation, promoting community treatment, following-up and adhering to drug consumers, assisting and tending drug consumers preventing and following-up the risk group who will cause impact from drug, drug prevention campaign by community, coordination with the government sector in various activities in the area etc. and those activities should be initiated by community as according to proper conditions of each area.

5. Provide the Authority and the Setting-up of Community, extend and enhance the strength of community and give them the roles in surveillance, deterrent, keeping peace and security in the area properly as well as the roles in helping authorized officials to prevent any impact towards society/community by letting these set-up groups grouping together, providing legal authorization at certain level, tactics drill, necessary operational tools should be available, communication system with the government official in the area, and necessary basic welfare etc.

6. Provide the Government's Support, the government will support budget, resources etc. to community to solve drug problem in their area. The budget is from various sorts both central, provincial and local agencies by integrating the budget from various sources and allot to the area in unity. Promote the establishment of the fund for solving drug problem in the area and extend the Mother of Land's Fund.

7. Encourage the Government to Coordinate with Community, the government officials in the target area should be assigned to adhere to coordinate with community in the target area to provide counselling, coordinating and accepting complaint for further implementation.

8. Support the Community Volunteer, give priority to organize volunteers in community to prevent and keep surveillance on drug problem in the area, to serve as significant force in drug related work with the support of the government in setting up and properly work together.

The 10th Issue : the Proactive Drug Prevention Policy = Stop the New Case, Eliminate Conditions, Actions that Should Be Taken in the Long and Short Terms

Drug prevention is a vital measure to stop drug, if it is carried out successfully, there will be no new drug related person. However, during the past few years, several conditions and factors have greatly changed, the most vital changes are the view on drug, the policy towards drug, social communication channels which is more widely open, the change in people's opinion etc. All these conditions put drug prevention in a defensive position and cannot keep pace with the changing conditions leading to the weakness of drug prevention guidelines and cannot open offensive line effectively.

The national drug agenda should have the additional policy on proactive drug prevention as following;

1. Set the 4 Year Proactive Drug Prevention Policy by defining the following targets;

1) The childhood population group should be implanted with life skill to be used for developing the quality of the youth.

2) The risk group population aged between 15-24 years old should receive the knowledge and be aware of drug in the new framework and see through it.

3) The target population group who is determined to be aware of the danger of drug and has taken part in various activities properly.

2. Towards the Childhood Population Group, develop the quality of the system, teaching personnel, teaching media to enable the childhood group to have life skill on EF/Effective Function to build up their thinking system. This should be done continually and systematically throughout the country within 4 years.

3. Towards the Risk Population Group aged between 15-24 years which is the urgent target group which needs to be prevented from getting involved with drug by

1) Educate them on drug problem under the new framework both in terms of the change in drug, its addiction effect, its usefulness, new guidelines to overcome the problem etc. to keep pace with change.

2) Increase effectiveness in providing correct knowledge for new prevention guidelines to the risk group population through various social media with the users over 72.8 % of the total Thai population. Set the target of the people who receives prevention data to be as many as possible in each year by developing prevention management through this media channel to attain the set target.

4. Towards the Special Risk Target Group which is the most high-risk group, the more this group is prevented, the more it will help slow down the increasing of new consumers by

1) Set the special risk group, namely

- The people who have family member involve with drug.
- The group which lives in intensified drug problem area.
- The group which has friends involving with drug.
- The group which has risk behavior such as like to mingle, like to go to entertainment places etc.
- The group which has family member grows cannabis, Kratom plant and those plants are not used for medicinal purpose.
- The group in educational institute which has risk behavior such as skipping class, hanging out, gambling etc.
- The group which was released or recently released with no security to make a living due to several factors.
- The group which use social media to find precarious information towards risk behavior.

2) Set these risk groups as the urgent prevention target which need to build up effective measures, activities and outreaching channel, to hope for prevention success.

The 11th Issue : the Impromptu Policy to Urgently Solve the Problem - Seriously and Quickly Reduce the Impact in the Main Points

To stop the increasing of drug problem and to reduce the social and community impact from drug, it is necessary to set the special measures and it needs to be carried out urgently, there are 4 following problems;

1. Reduce the Impact from the Risk of crime and violence from drug problem towards family, community and society. All provinces need to have proactive towards drug consumers/ drug addicts who have psychiatric symptoms and have risk to commit violent crime towards life, asset, safety of family, community and society by identifying that person, conducting risk assessment, and setting measures to continually prevent, keep, suspend, follow-up, assist, and forward. So that this group cannot cause any problem, this should be the cooperation between the government and community.

2. Set the Target Area which Still Has a Lot of Drug Problem or Has Severe Drug Problem as the urgent target area. All provinces should set the target area which still has a lot of drug

problem or has serious drug problem which causes direct impact towards community, so that serious and continual actions can be carried out by integrating forces from various agencies to jointly solve the problem to alleviate the problem to become the normal level.

3. Expand the Implementation of the New Alternative Policy to create balance in the measure to solve the problem of group of people properly. The alternative policy is the guidelines in treating the groups of drug consumers/ drug addicts who are different as considered appropriately for each individual which is the new framework in reducing the impact of drug towards society by;

1) Equilibrate the Measures, all provinces need to add the actions towards the new alternative policy towards all groups related to drug appropriately to create balance in drug overcoming measures in each province.

2) Promote more voluntary treatment, encourage the enforcement of section 113 and 114 as according to the Narcotics Act, which are the guidelines to bring drug consumers to undergo treatment voluntarily and by identifying of officials without focusing on making arrest.

3) The drug addicts use more harm reduction guidelines by promoting harm reduction guidelines towards drug addicts/chronic drug addicts such as heroin addiction group or appropriate group etc. to enable those addicts to live a normal life. It is not necessary to make arrest as according to the law.

4) Promote arrest diversion guidelines by reducing criminalization which is the main guideline to divert people from being arrested as according to the law.

4. Adjust the Appropriate Narcotic Plants Policy, to build up balancing to avoid the breach in solving the problem by

1) Cannabis, review the status of cannabis and its being a narcotic plant, develop the full use of cannabis in the fields of medical, study research, review the gap of using cannabis for recreation which is the result from having in possession of the household and the gap in suppressing and dismantling cannabis trading network both domestically and internationally, give priority to the execution of the International Convention, on the part relating to cannabis.

2) Cannabis and Kanchong (hemp), there should have separate laws between cannabis and Kanchong (hemp) for the benefit of development, making use of and appropriate control of each plant.

3) Prevention on abusing especially cannabis and Kratom Plant by following-up, making surveillance and preventing them from being abused.

The 12th Issue : Integration-Based Management Policy to Build-up Unity, Drug Problem Solving which is the National Agenda

The national drug agenda this time aims to overcome the problem under the new conceptual framework and in the problem group which has violence and cannot be solved in the past, thus, integrated centralization with unity is the success factor by,

1. The Unity in Policy and Management, namely

1) Have the Cabinet's resolution, the order of the Prime Minister on the implementation of drug tackling policy as the national agenda.

2) The Narcotics Control Board/ONCB should monitor, integrate, command and follow-up the policy.

3) Set up the National Narcotics Control Management Center to serve as the commanding center to command measures, guidelines and to monitor, follow-up and evaluate the implementation outcomes by arranging for appropriate management, close-up and flexible.

2. Reorganization for Appropriate Integration in the Problem Group which is the Urgent Policy, the main problem groups comprise the urgent area group, the mission group which need to use authority from several agencies etc. It is necessary to arrange for integrated mechanism and organization to work together both at administration, management, and operational levels, they need joint working system.

3. Integration in the Province, province/district shall host the integration at provincial and sub-district levels by setting plan and solving drug problem to alleviate the violence and impact of drug to be in line with the policy. Province shall have the authority in managing, commanding, requesting and mobilizing various resources from the concerned agencies in the province.

4. Resources Management, budget should be managed in consistent with the missions, the target is to integrate the budget from all sources with province serve as mechanism in integration.

5. Provincial One Stop Service Integration, all provinces have integration mechanism in handling drug consumers, 1 for each province. It should provide one stop service integration covering screening work, sorting, forwarding, assisting in social rehabilitation, following-up, providing counselling, voluntarily work by providing personnel, place, working system to solve the problem of drug consumers/drug addicts completely.

The Conclusion of 9 Drug Policies as the National Agenda

Due to the fact that the amount of drug in the area has tendency to increase, the drug epidemic within the country has caused impact towards family, community and society throughout the country. The declaration of the national drug agenda is, therefore, an urgent necessity of the government to solve drug problem successfully, the summary of the policy recommendations for 4 years is as following;

1. Policy Target, Society is Safe from Drug

Within 4 years, the government has target to reduce the violence from drug problem, it should not cause impact towards family, community and society any more. The violent crime from drug should not occur, the people have safety in their life and asset.

Within the first year, urgent area and target are addressed with clear outcomes until they do not cause impact towards family, community and society, the people are safe from drug.

Within the period of 3 years, the government will build up security, sustainability in all areas throughout the country, the people have security and safe from drug.

2. The Policy in Serving as the Core in International Cooperation

Serve as the core in expanding cooperation among the counties in the Golden Triangle Area, the countries and sub-region of ASEAN and the countries which suffer from the impact of drug from the Golden Triangle Area, in enhancing interception operation, suppression of drugs and chemicals in the Golden Triangle Area, set up strategies, measures on operational coordination and more effective cooperation mechanism.

3. Proactive Policy to Cope with Modern Drug Crime and the Integrated Enforcement of Law

Expedite the implementation against drug crime which causes impact towards society both in terms of crime which is violent to life, human-body, syndicate crime which connects to several types of offences and crime through logistics system and on-line system by using new conceptual framework, mechanism and measures to be in unity and integration and using legal authority of various agencies.

Focus should be made on dismantling the structure/syndicate of the main drug dealers, dismantling the syndicate and breaking up its financial cycle by expanding operational forces, coordination on integration between each other in the fields of intelligence, investigation, operation, investigation by technology, enforcing of laws in different processes, operation to reduce the suffering of the people from drug dealing in various areas, prevent and suppress corruption and power abusing of government officials, protecting and taking care of the official who work with intention, seriousness and honesty, developing effectiveness, integrating enforcement of laws in judicial process with the target to dismantle the drug syndicate and break up its financial cycle.

4. The Policy on Building-up Drug Safe Area

Build-up drug safe area in all sub-district areas throughout the country by setting roadmap and operational measures to build-up drug save area in various phrases, the plan should be implemented continually, has operational system and clear network throughout the country in the period of 4 years with the target to reduce the impact from drug in all areas and the people enjoy security and safety.

5. The Policy on Reducing Consumers, Reducing the Impact

Set the new conceptual framework in which consumers are considered as patients who need appropriate treatment as according to the public healthcare principles covering health problem and basic problems by adjusting the process on drug consumers as according the new framework, namely,

Classify Drug consumers/Drug Addicts throughout the Country in order to consider their symptoms level of consumption and addiction and the impact that may occur towards their family, community and society by ranking the urgency to bring consumers/addicts who may cause impact to undergo appropriate treatment as priority.

Organize Operational System, the vital management mechanism on consumers/addicts under the new framework comprising promotion of voluntary treatment, development of screening center, providing sufficient number of clinics and special clinics, development of forwarding system, social rehabilitation centers, following-up and assistance system to solve basic problem to consumers/addicts properly.

Promote the Role of Business, private organizations, volunteers in following-up, assisting and rehabilitating those who underwent treatment, initiate for individual following-up and assistance.

6. Community Policy, Stop Drug by Community

By promoting the role of community to serve as the owner of the problem, prepare community drug plan with evaluation system, support the strength of community, leaders and establish community throughout the country by adding readiness factors of community in terms of their roles, authority, resources and community volunteer roles to enable the community's power to stop drug problem in the community.

7. The Proactive Drug Prevention Policy

By setting the urgent prevention target to the drug risk group as the first priority to cut the new cycle by building up immunity in the childhood group and expanding prevention through social media to cover more population.

8. The Impromptu Policy to Urgently Solve the Problem

By overcoming the problem which causes great impact as the first priority to alleviate drug problem to normal level comprising the problem of area and group of people which have opportunity to commit violent crime, expanding the operation as according to the new alternative to be widely carried out more appropriately as well as reviewing to close the gap in the policy on narcotic plants.

9. The Policy on Integrated Management

By building-up unity and integration both at policy, management and operational levels to effectively support the operation of the national agenda. Each province will serve as the host in integration as according to the new framework to drive for the success of these policies in their areas.

All provinces should set up a driving center to completely solve the problem of consumers/addicts, one center for each province. It should work as one stop service which integrates significant work in the same place, namely screening drug to classify waiting, forwarding for treatment, social rehabilitation and following-up, assisting, counselling and distributing consumers/addicts properly.

All of these are the policy recommendations on drug agenda, the national agenda for the government which are aimed at solving drug problem in a sustainable manner.

The Effect of Kratom Plant Use on the Nervous System of Methamphetamine and Heroin Dependence

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The use of kratom plant in communities

During the past decades, community surveys revealed the beneficial properties of kratom plant for the attenuation of several symptoms that emerge during cessation of stimulant or analgesic substance abuse both in Thailand and abroad such as Malaysia. The benefits led to the ideas to develop kratom plant for its best value and usefulness. However, it's important to study kratom plant effects with more controlled and scientific methods.

The spread of addictive drugs has beena major health problem that threatens the country's stability and development. Dependence on analgesics such as heroin or morphine and psychostimulants such as methamphetamine, also known as "Yaba", is found to have negative impact on physical and mental health and life quality of addicts. There are medical and legal strategies in attempts to prevent and get rid of drug addiction. However, there is no satisfactory way or measure. Massive proportions of addict population are youth and underprivileged people who cannot access rehabilitation and formal treatment. Therefore, they have to seek alternative remedies to attenuate the severity of their withdrawal symptoms.

Kratom is among the medicinal plants available as alternative choices. It is used in traditional medicine. In the United States of America, it was also used as a substitute for methamphetamine and heroin. In several case studies, kratom leaves were effectively used for self-remedy. However, most of the reports were from survey studies that used questionaries and interviews. Basically, these processes were prone to bias and misinterpretation. Therefore, it is necessary to examine kratom's effects using scientific methods with high accuracy and reproducibility. The study with a randomized controlled trial (RCT) was designed to determine the effect of kratom on 86 volunteers who were addicted to methamphetamine and heroin. The volunteers were assigned to receive capsules of either a placebo or kratom extract without knowing which substance they were taking. They were subjects for electrocardiography (EKG) for heart rate variability (HRV) analysis and electroencephalography (EEG) for sleep-wake evaluation. Data were statistically analyzed using a Two-way ANOVA.

* Financially supported by Office of the Narcotics Control Board, Thailand.

Prior to the RCT study, the effects of kratom plant were tested in a preliminary study. The methamphetamine addicts received 3 kratom fresh leaves for chewing. Their autonomic activities were recorded before and after chewing. The results were shown in term of HRV parameters. The analysis revealed that kratom leave chewing significantly increased Mean-RR and decreased Mean-HR. The data confirmed the increase in parasympathetic/sympathetic ratio. Basically, this pattern of the autonomic nervous function is found during relaxation. This ratio is low in response to stress, agitation, non-meditated condition or particularly during drug craving period. Therefore, the increased parasympathetic/sympathetic ratio reflected that the volunteers were in stable mental condition after chewing fresh kratom leaves. These data were consistent with the data from community survey that supported the beneficial effects of the kratom plant for ethamphetamine addicts.

Figure 1 Kratom leaves as raw materials for the extraction.

Randomized controlled trial (RCT) study of kratom effects on methamphetamine and heroin dependence.

In RCT study of kratom effects, data of EKG were analyzed and expressed as HRV parameters. Data before and after taking capsule of kratom extract or placebo were compared. The results showed significant difference between the effects of placebo and kratom extract in heroin users but not amphetamine users (fig 2).

The analysis of EEG signal for sleep-wake evaluation showed no significant difference between placebo and kratom extract neither in heroin (fig 3) users nor in amphetamine users (fig 4).

The cognitive tests also revealed no significant difference between the effects of placebo and kratom extract neither in heroin (fig 5) users nor in amphetamine users (fig 6).

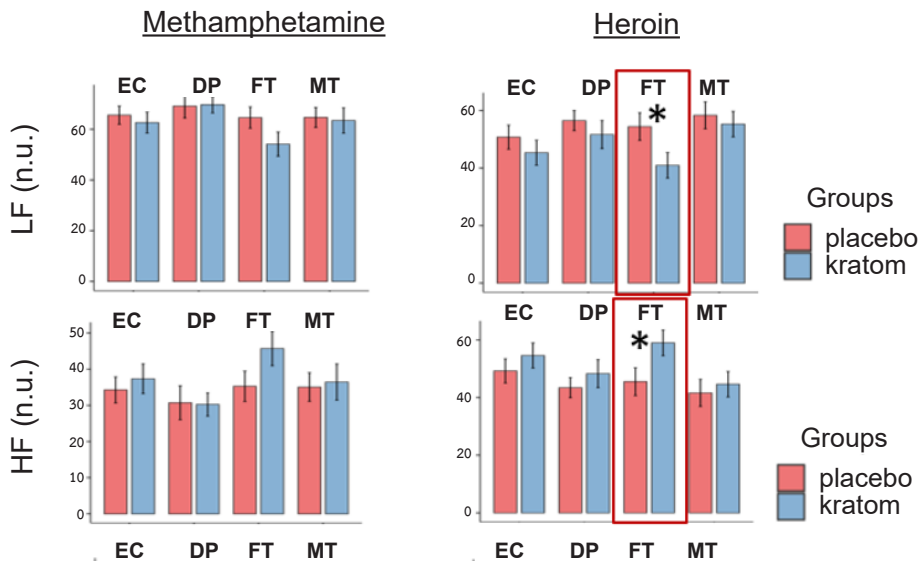

Figure 2 Bar graphs illustrate the differences between HRV parameters following placebo and kratom extract treatment in methamphetamine and heroin groups. (EC; Eyes closed, DP; Drug picture, FT; Flanker's task and MT; Memory task).

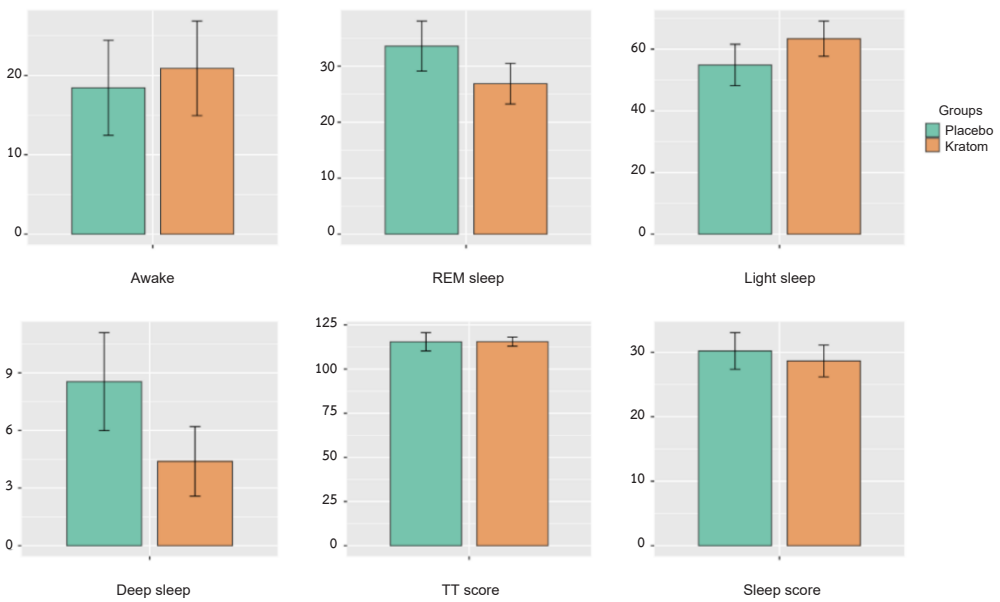

Figure 3 Sleep-wake parameters following placebo and kratom extract treatment in methamphetamine group.

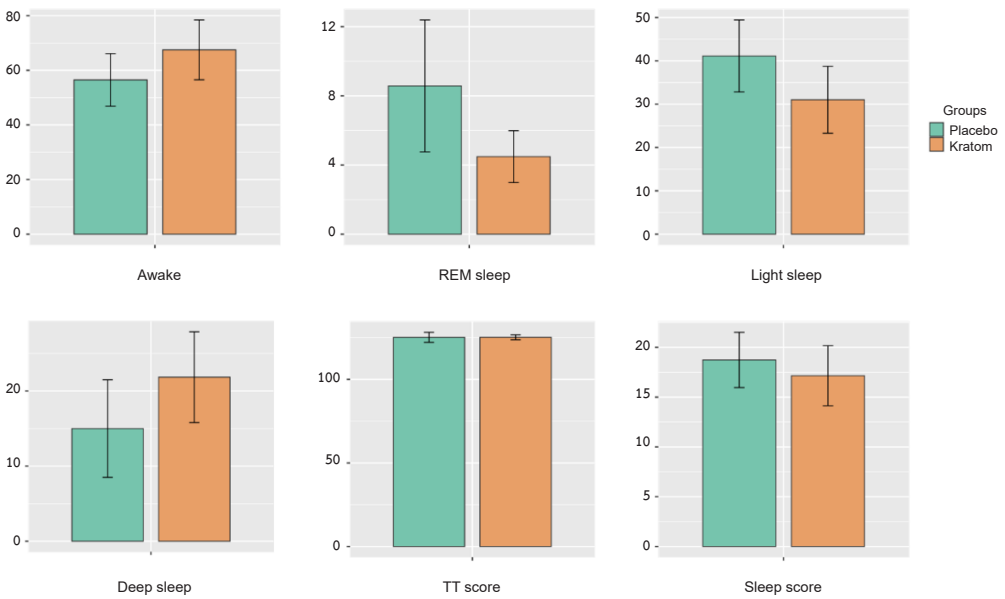

Figure 4 Sleep-wake parameters following placebo and kratom extract treatment in heroin group.

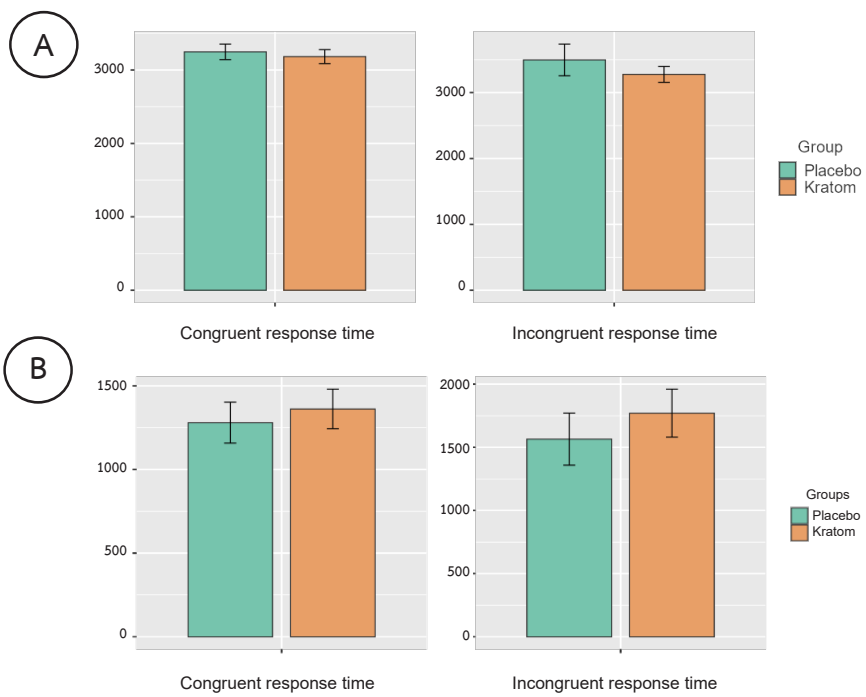

Figure 5 Flanker's task parameters of attention test following placebo and kratom extract treatment in methamphetamine (A) and Heroin (B) groups.

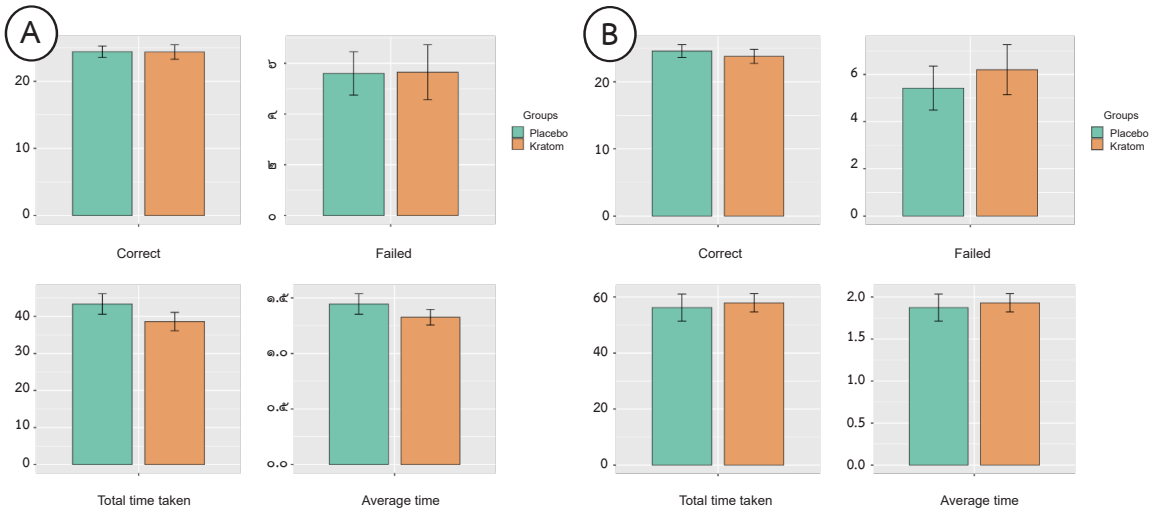

Figure 6 Memory test values following placebo and kratom extract treatment in methamphetamine (A) and heroin (B) groups.

Discussion

From our preliminary study, kratom leave chewing was effective and safe in methamphetamine users. No sign of toxicity was seen. There was no side effect that forced any volunteer to drop off from the study. The results were evidence-based research findings that strongly support the beneficial effects of kratom plant for treatment of methamphetamine dependence. The data suggest further development of kratom plant for the scale of public health.

However, the findings from this preliminary study might be recognized as initial explanation of kratom potential for further use. It was important to confirm with RCT study that the volunteers were unaware of which substance they were taking. The volunteers did not know whether they were taking placebo or kratom leave extract. This was to prevent the research subjects from expectation and belief. There are neurobehavioral effects that positive thinking leads to changes in behavioral mechanisms and research data.

The analysis of RCT results revealed a significant decrease of the sympathetic activity and increase of the parasympathetic activity in heroin users. The results indicated that the heroin users were relaxed. The results confirmed the hypothesis with scientific data. However, there was no significant result in methamphetamine addicts. This was discussed in term of the dose used. This RCT study used relatively low dose of kratom extract. That was why significant results were found in only a few parameters of heroin addicts. On the other hand, kratom fresh leave chewing was effective in methamphetamine addicts who chewed relatively equal amount of kratom. This was probably due to the effects of taste and moving action of chewing were combined with those chemical substances contained in kratom leaves.

Bioactivity of kratom leave extract produced beneficial effects in heroin users that can imply to the users of other opiates. In terms of mechanism, mitragynine, as a major component of kratom leave, mimics some actions of opioid substances which is the main reason why kratom plant has been predicted to substitute morphine (Jansen & Prast. 1988). Previously, mitragynine was found

to attenuate morphine withdrawal in vitro (Watanabe, K., et al. 1997) and in behavioral study using zebrafish (Khor, B. S., et al. 2011). Kratom property was strongly confirmed in a mouse model of morphine withdrawal (Cheaha, D., et al. 2017). However, crude extract from kratom leaves also has other neurotransmitter mechanisms rather than just only opioid activity. In particular, the crude extract did not stimulate the nucleus accumbens, the reward center in the brain (Cheaha, D., et al. 2017). It means that the crude extract does not produce reward which is one of addictive substance properties. This is one of major advantages of kratom plant. It does not have high opioid activity in addition to other mechanisms such as noradrenergic and serotonergic actions (Matsumoto, K., et al. 1996). Moreover, kratom crude alkaloid extract was demonstrated to exhibit antidepressant-like activity via serotonergic pathway (Kumarnsit, E., et al. 2007). These mechanisms may collectively attenuate morphine withdrawal. Therefore, kratom plant has strong potential to be used for treatment the symptoms that emerge during the abstinence in heroin or other opiate users.

In the past, opiate dependence was treated using mainly methadone (Wang, G. Y., et al., 2015) and levo-α-acetylmethadol (LAAM) (Judson, B. A., et al. 1983). These drugs are effective in treatment of withdrawal symptoms and craving. They have long period of efficacy. However, their long-term use also causes serious withdrawal as much as those caused by other standard addictive drugs (Dyer & White. 1997). The increase in doses of methadone is known to help attenuate the severity of opioid withdrawal symptoms. However, it leads to several side effects including psychological symptoms (Kreek, M. J. 1973). Anxiety was associated with methadone therapy resulted in impaired self-control in addicts when facing drug-related cues (Levy-Gigi, E., et al. 2014). Taken together, these findings suggest that methadone is also problematic at some points. Anyway, methadone and LAAM are still being used because there is no better alternative. Therefore, the discovery for other choices with better properties is necessary as a major target of sustainable drug dependence treatment.

Conclusion

This RCT study used an extremely low dose of kratom plant extract. This was to limit at minimum amount that equals to that routinely used by local people. This resulted in minimal effects of kratom extract in heroin users but not methamphetamine users. Because this was a preliminary study. A low dose was chosen for safety reason and approval of ethical committee for human research. It is likely that with higher doses, more significant results would be found in heroin addicts as well as methamphetamine addicts according to this preliminary study. Altogether, the results can be summarized as follows.

- Preliminary data showed that chewing fresh kratom leaves resulted in relaxation evaluated from the autonomic nervous system activity in methamphetamine addicts.

- An RCT study using kratom leave extract with the amount of mitragynine equivalent to that contained in 2 leaves showed that the extract significantly produced relaxation in heroin users.

The data revealed safety of kratom extract treatment for the volunteers. No side effect was seen during the study. These were evidence-based data that indicate the potentials of kratom plant for treatment of drug dependence particularly for the users addicted to psychostimulants and opiates.

Suggestion

The present study investigated the effects of kratom extract at a very low dose. The preliminary and RCT studies confirmed beneficial effects of kratom plant for treatment of methamphetamine and heroin dependence. Chewing kratom fresh leaves is simple, inexpensive and effective for methamphetamine addiction. The extract of kratom leaves is effective in treatment of heroin dependence. The observation of volunteers during the test did not find any risk of kratom plant on the nervous system. The data showed high safety of kratom plant. Therefore, the dose might be safely increased at least 2 folds or higher under medical care for better efficacy of treatment during the withdrawal or craving periods.

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Cocktail Drugs on Social Media

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Abstract

The situation of cocktail drug marketing on social media was analyzed from the data of 32 people involved in the sale of cocktail drugs on the internet from the studies called "The Marketing and Offenses Related to Drugs on the Internet Studies during 2020-2021" and "Drug Marketing and Sale on the Internet in 2022" in terms of sale pattern. It is found that most sellers are new sellers (71.9%), selling more than one type of drug (90.6%). The most popular cocktail drugs on sale are K milk powder or K desert (90.6%), happy water (71.9%), mixed instant coffee in a sachet (18.8%) and collagen (15.6%). All sellers posted their advertisements on Twitter, focusing on customers aged 25-34 years who love to party. Their contact channel is via Line application, with 24-hour sales, free delivery, cash on delivery, and drug quality assurance provided. Most of mixed drugs act as stimulants, hallucinogens, prescribed sleeping pills, and sedatives. The sales of cocktail drugs have apparently increased over the past 3 years. Thus, there should be intrusive and consistent surveillance and suppression of drug sales on social media.

Introduction

The number of internet users in Thailand has increased consistently and reached 54.5 million in 2022, representing 77.8% of the Thai population. The main reasons for using the internet are for information search (67.6%), with 56.8 million social media users or 81.2% of the Thai population (Bangkok biz news 2022, Nattapol Muangthum 2022). Besides, teenagers are considered a significant group of consumers with easy access to social media. The nature of internet use facilitates searching for drug information in terms of types, patterns, and methods of use with easier ways of drug dealing for both buyers and sellers. Social media has become a drug distribution channel. Previously, there were advertising posts on drug selling and inviting people to drug dealing networks. Most contents on Facebook included positive, inviting, and persuasive messages with information about drug effects and selling prices. The popularity of drug sales on social media has changed over time. According to the study in 2019, drug sales were more popular on Facebook than on other platforms, with marijuana and kratom as the most popular drugs. In the study on drug marketing and sale on the internet in 2022, drug sellers posted their drug sale advertisement on Twitter more than other platforms, representing 94% of the posts (Kanittha Thailka 2019, Kanittha Thailka 2022). During the past 2 years, there have been changes in the marketing trend of drugs and abused prescription drugs on social media, especially major substances such as ice, methamphetamine, ketamine, heroin, and magic mushroom. Interestingly, mixed drugs or "cocktail drugs" are a mixture of drugs and abused prescription drugs as a new type of drug such as happy water, K desert, 3 in 1 instant coffee, or collagen. Therefore, this study reflects the situation where cocktail drugs are increasingly popular in terms of sellers, types of drugs, and attractive characteristics for users, which require constant monitoring and surveillance.

Objective

To study the situation of cocktail drugs on social media

Method

The data from the studies called "The Marketing and Offenses Related to Drugs on the Internet Studies during 2020-2021" and "Drug Marketing and Sale on the Internet in 2022" were analyzed in this study to examine the selling pattern of mixed drugs or "cocktail drugs."

Procedures

1. Search for posts on cocktail drug sale on social media during 2020-2022.
2. Collect messages and images of cocktail drugs on social media posts.
3. Study trends of language and messages used in communication, including photos and animations.
4. Manage the data on each post by sorting text and special characters, extracting important information for filtering, as well as verifying data redundancy, confidence, data connection, and sales context.
5. Analyze and process the contexts, messages and patterns of mixed drug sales.

Results

All 32 people involved in cocktail drug sale on the internet are registered as Twitter users. Most of them or 71.9% are new sellers who have just signed up on social media, while 28.1% are old users. Twenty-nine of them or 90.6% sold more than one type of drug : cocktail drugs and other drugs such as ice, ecstasy, ketamine (both liquid, flakes and powder), cocaine, marijuana, prescription drug abuse, and magic mushrooms. Three of them or 9.4% sold only cocktail drugs. Those involved in cocktail drug sales were found the most (25 people or 78.1%) in 2022 (16 were new sellers, while 9 were old sellers). In 2021, four sellers or 12.5% were new sellers, while 3 sellers or 9.4% were found in 2020 (2 new sellers and 1 old seller).

The most popular cocktail drugs sold on social media were K milk powder, happy water, instant coffee in a sachet, and collagen. The amount of seller of them were 29 (90.6%), 23 (71.9%), 6 (18.8%) and 5 (15.6%), respectively. All sellers posted on Twitter, focusing on customers aged around 25 – 34 years who love to party. In addition, they included a Chinese hashtag "#可卡因 #厄斯特里 #泰国的中国酒吧 #快乐的水域" which means "#Cocaine #Eritrea #Thai Chinese Bar #Happy Water" in the post to attract Chinese tourists.

The sale period and delivery are 24 hours a day with channel of contact via LINE application, free delivery, cash on delivery, and drug quality assurance provided.

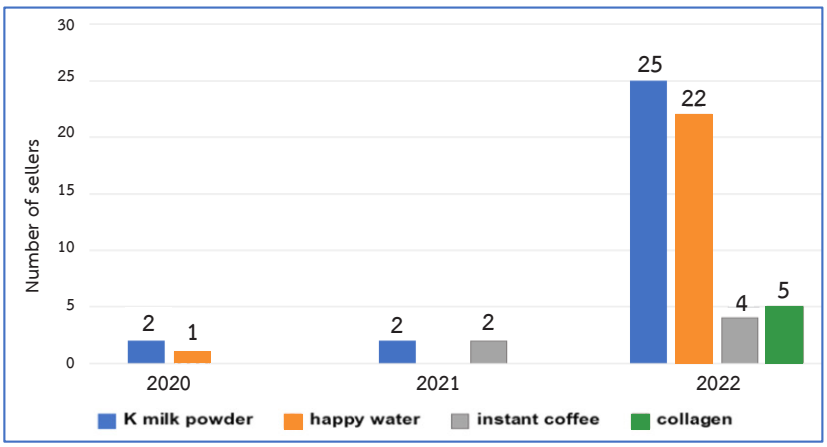

Figure 1 The number of sellers classified by type of drug and year

Remark: In 2022, one seller sold more than one type of drug.

Happy water, which is called by many names such as happy water, happy, happy pills, holy water, or happy water (English transliteration) is a mixture of various drugs and prescription drugs in various types of packaging such as condom sachet with milky white powder of around 15-20 grams inside. The powder could be mixed with hot water or soft drinks. After taking it, users will feel euphoric without having to drink alcohol. Moreover, there is no exhaustion or hangover symptoms after use. The main ingredients of happy water are ecstasy or MDMA, ice or methamphetamine, diazepam, caffeine, and tramadol or psychotropic drugs or compounds containing benzylpiperazine (BPZ) that have a similar effect as methamphetamines, but 1 out of 10 less severe. However, each these seller has his or her own formula ingredienrs comply with the happy water examination result from the Narcotics Analysis and Technical Services Institute, the Office of the Narcotics Control Board, which found MDMA with a percentage purity of 0.00-63.22, methamphetamine with a percentage purity of 0.00-46.18, heroin with a percentage purity of 0.00-0.67, ketamine with a percentage purity of 0.00-74.28, diazepam with a percentage purity of 0.00-24.59, nimetacepam with a percentage purity of 0.00-3.12 and other substances such as caffeine. The price of happy water ranges between 1,200 to 4,000 baht per pack.

Figure 2 Packaging and patterns of happy water

K milk powder or K desert has many names such as MSG, K-noa, and K-wasabi, which are called according to their appearance. MSG is flakes. K desert is light brown, like creamer powder. K milk powder has a milky white color. K desert has a stronger effect than K milk powder depending on the drugs mixed in its ingredients. Sometimes it is called a "K cocktail" with an unspecific formula, but with Ketamine or diazepam as basic components. Other drugs might include ice, ecstasy, heroin, paracetamol, and diclazepam, a powerful sleeping pill in the benzodiazepine family. Each seller has a different formula of their own. The followings are some examples of formulas obtained from sale posts on the internet.

- K desert ingredients include ketamine, heroin, ice, ecstasy, diclazepam (some sources refers to it as diazepam), and salt in some formulas.
- K milk powder ingredients include
  - Ketamine, ice, heroin, and diazepam
  - Ketamine, ice, diazepam, and paracetamol
  - Ketamine, ice, heroin, and paracetamol
  - Ketamine, paracetamol, and salt
  - Ketamine and ecstasy
  - Ketamine and diazepam
  - Ketamine, ice, heroin, and sleeping pill

The examination result from the Narcotics Analysis and Technical Services Institute, the Office of the Narcotics Control Board found ketamine with a percentage purity of 0.00-23.95, methamphetamine with a percentage purity of 0.00-0.08, diazepam with a percentage purity of 11.26-99.28, and other substances such as Clonazepam, Midazolam, Alprazolam, and caffeine.

The K milk powder can be dissolved in water to drink or snorted.

The sale unit is by gee, gram or retail. The price is 1,000 baht per gee. The retail price per bag is 300 baht.

Instant mixed coffee in a sachet is called by many names such as feel coffee, ecstasy coffee, ecstasy 3 in 1 coffee, NN coffee, and sachet coffee. Its packaging is similar to instant coffee or a 3 in 1 coffee sachet. Its mixtures compose of various types of drugs as follows.

- Grounded ecstasy and ice mixed with coffee, looking like happy water
- Grounded ecstasy mixed with Erimin 5

The examination result of instant mixed coffee from the Narcotics Analysis and Technical Services Institute, the Office of the Narcotics Control Board found MDMD with a percentage purity of 1.19-2.14, ketamine with a percentage purity of 0.23-0.33, and nimetazepam with a percentage purity of 0.11-0.18.

Instant mixed coffee can be used by mixing 1 sachet with hot or cold water to drink or snorted. Its effect is stronger than ecstasy and K milk powder. The price is 3,000-4,500 baht per sachet.

Figure 3 Packaging of instant mixed coffee

The sale of collagen was first found on social media at the end of 2022. It is a mixture of ecstasy, ice, ketamine, heroin, and sleeping pill packed in a sachet of collagen supplements. Its trade name includes collagen and happy hour, sold at 2,500 - 4,500 baht per sachet.

Figure 4 Packaging of Collagen

Interestingly, 2 sellers who posted sale advertisements for cocktail drugs also posted for 2CB, a synthetic substance less active than ecstasy, LSD, and magic mushroom. They also posted for DMT, an active ingredient in category 1 (Food and Drug Administration (M.P.P.)

Summary

The cocktail drugs are popular domestically and internationally, especially in European countries and Taiwan (Matichon Weekend 2021). The sales of cocktail drugs in Thailand have increased during the past 3 years, in terms of sellers and types of cocktail drug, despite the reported death from drug use in 2021. The cocktail drugs have continued their popularity and have been widely sold on social media with unspecific formulas, depending on each seller. Most are a mixture of drugs which act as stimulants, hallucinogens, prescribed sleeping pill, and sedatives. The self-made mixture mainly depends on what the seller has in stock for sale. For prepackaged cocktail drugs, the sellers only know roughly how the users will feel when using them. They have no idea about the danger of using various types of drugs simultaneously. Previously, there has been a death report of a drug user who took K milk powder via nasal snort (Matichon Weekend 2021). Even though the number of cocktail drugs sales on social media is not as high as major drugs like ice, methamphetamine, or ecstasy, it has tended to increase during the past 3 years. There should be constant surveillance and severe suppression of drug sales on social media to prevent and reduce harm from cocktail drug consumption.

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Substances Use among Thai Teenagers, 2022

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ABSTRACT

The study of the epidemic situation of substance use is the cornerstone of solving the problem. This study is aimed to determine the proportion of Thai teenagers (aged 10-18 years) who used substances in 2022. It was a cross-sectional descriptive study using a three-stage stratified cluster sampling. A total of 4,666 samples were obtained. A self-administered questionnaire was used to collect data and descriptive statistics and chi-square to analyse data.

Of Thai teenagers aged 10-18, 16.6% reported their experiences of ever using any substances. Of these, 13.1% used substancesin the past 3 months. There were statistically significant differences between sexes and age groups. The popular substances used by teenagers were kratom (especially kratom liquid), sedatives, cannabis (especially dried cannabis), stimulants (especially YABA), depressants (especially tramadol and codeine), and hallucinogens, respectively. In addition, the behavior of using more than one substance simultaneously (polysubstance) was found. There were also use of substances with alcohol, smoking/e-cigarettes, use of substances with alcohol and smoking/e-cigarettes.

KEYWORDS : Substances abuse, Teenagers, Drugs use behavior

INTRODUCTION

Drug abuse is a significant problem that continuously affects society. The United Nations Office on Drugs and Crimes (UNODC) estimated that 585,000 people worldwide died from related drug abuse (UNODC, 2019).

Pieces of evidence from the past 50,000 BC, the report on the using psychoactive substances in plants (Merlin, 2003) revealed that in Southeast Asia, substance abuse has been used for over 15,000 years (Sullivan et al., 2002). Later, substance abuse became popular for recreation.

Presumably, opium had become widespread in Thai society since the Sukhothai period. In the Ayutthaya period, opium problems began to appear since opium users did not earn a living. Thus, King Rama I issued the provision to punish the opium consumer in the Thief's Characters Act, B.E.1609 (1066),) stating the essential points that "... Article 81, anyone who consumes opium and/or sells opium must get hard punishment. According to the royal power, the offender's assets must be completely forfeitured, such offender should be forced to patrol on the ground for three days, and on a boat for another three days, followed by imprisonment until abstaining opium use. After abstinence, the offender's relatives must be fined before offender release ..." (Fine Arts Department, 1978). Later, various Kings enacted many other laws, such as the Act of Prohibition

of the Purchase of Opium and Opium Smoking, Culasakaraj 1173 (B.E. 1811), the Decree of Prohibition of Opium Smoking, Culasakaraj 1181 (B.E. 1819), and the Announcement on the Prohibition of Opium Selling and the Opium Smoking Culasakaraj 1182 (B.E.1820), the Act on Opium and Number Tattoo, Culasakaraj 1186 (B.E. 1824), the Opium Tax Act, B.E. 2414 (1871), the Morphine and Codeine Act, B.E. 2456 (1913), the Opium Act, B.E. 2464 (1921), and the Narcotics Act, B.E. 2465 (1922). After Thailand changed the administrative regime in 1932 the government still used legal measures. Substances were controlled through the enactment of the Cannabis Act, B.E. 2477 (1934), the Kratom Plant Act, B.E. 2486 (1943), the Sale of Drugs Act, B.E. 2493 (1950), the Revolutionary Council Announcement (No. 37), B.E. 2501 (1958), the Psychotropic Substances Act, B.E. 2518 (1975), and the Narcotics Act, B.E. 2522 (1979). Since then, the drug epidemic problem did not decrease, but the problem has increased. Its transition from addictive plants to synthetic drugs and the pharmaceutical abuse (Kanato et al., 2020).

Thailand has been affected by substance abuse problems for a long time. The common native addictive plants include opium, cannabis, and kratom. The first synthetic drug used by the population was heroin, first found before 1957 and spread extensively later (Poshyachinda, 1980). Amphetamine-type stimulants (amphetamine and methamphetamine) became widespread after 1967. Volatile substances (benzene, lacquers, and glue) appeared after 1977 (Poshyachinda et al., 1999). New drugs were used after 1987, including ecstasy, ketamine, ICE (crystal methamphetamine), and cocaine (Poshyachinda et al., 1998). Recently, new psychoactive substances have been used (Wonguppa et al., 2018). However, official statistics show that methamphetamine users are the most significant drug users with access to treatment. Since cannabis and kratom are less dangerous than other drugs, only a few users require treatment (Kanato et al., 2022).

Currently, the term **"substances"** means any drugs or chemical solution or any kind when intaking into the body, will affect the body and mind. There are four primary laws in Thailand that mention substance : the Narcotics Act, B.E. 2522 (1979) (in line with the UN Single Convention on Narcotic Drugs, 1961), the Psychotropic Substances Act, B.E. 2559 (2016) (in line with the UN Convention on Psychotropic Substances, 1971), the Decree on Prevention of Volatile Substances Use, B.E. 2533 (1990), and the Commodity Control Act, B.E. 2495 (1952). However, the term "substances" does not include legal substances which are alcohol, cigarettes, and caffeinated beverages.

The United Nations Office on Drugs and Crime reported that in 2020 there were about 284 million people, or 5.6% of the global population aged 15-64 years, who used any drugs in the past year. Of these, 130,000 people died from drug addiction (UNODC, 2022). At the same time, the ASEAN Drug Monitoring Report reported that over 580,000 ASEAN people received drug treatment which is equivalent to 87.8 per hundred thousand population. Of these, one-third received drug treatment for amphetamine-type stimulants (ATS); the rest were cannabis, opiates/opioids, and others (Kanato et al., 2022). The Administrative Committee of Substance Abuse Academic Network (ACSAN) conducted a national household survey to estimate the number of substance users in 2019. It was found that there were approximately 1,966,827 people, or 3.91% of the population aged 12-65 years, who used any drugs in the past year (not including cigarettes and alcoholic beverages), In addition, youth aged 12-19 who used drugs in the past year account for 0.37% (Kanato et al., 2019).

Political movements since the end of 2018 continued to remove cannabis and kratom from the list of illicit drugs until they came into effect under the Narcotics Act (No. 8), B.E. 2564 (2021),

unlocking "kratom" from the list of narcotics schedule 5 and the Notification of the Ministry of Public Health on Specify the name of the narcotic drugs in schedule 5 B.E. 2565 (2022) in February 2022, considering only extracts from all parts of cannabis and hemp that contain more than 0.2 percent of THC by weight as narcotics. This caused both kratom and cannabis to be used widely for all ages and sexes. In order to get a clearer picture of drug abuse, especially among teenagers who are vulnerable groups, it is necessary to study the proportion of teenagers who use various substances.

OBJECTIVE

To explore the proportion of teenagers who use substances, classified by drug types in each sex and age group.

METHODS

1. Research Design

This study uses a quantitative method designed as a cross-sectional survey. The survey was conducted to obtain the approximate proportion of teenagers who use substances in Thailand.

2. Population and Samples

In this study, teenagers refer to the population aged 10-18 years. The study samples comprised 4,666 Thai teenagers from 10 provinces throughout the country. This sample size was calculated under the substances used prevalence in each age group and sex of youth between 1.98-5.46% (Kanato et al., 2020), with a 3% acceptable error, the design effect of 4.5, and the estimated involuntary at 10%. Considering the availability of resources (manpower and budget) with a given number of samples, the discrepancy in the regional and provincial analyses is huge (between 12%-22%). Therefore, the regional and provincial analyses were not included.

The sampling method uses stratified three-stage sampling.

1) The area of Thailand was stratified into ten zones according to the ONCB Region, namely the ONCB Bangkok, including 50 districts; the ONCB 1: central region, including nine provinces; the ONCB 2 : eastern region, including eight provinces; the ONCB 3 : lower northeastern region, including eight provinces, the ONCB 4 : upper northeastern region including twelves provinces, the ONCB 5 : upper north region, including eight provinces, the ONCB 6 : lower northern region, including nine provinces, the ONCB 7 : western region, including eight provinces, the ONCB 8 : upper southern region, including seven provinces, and the ONCB 9 : lower southern region, including seven provinces.

2) Systematic sampling was employed in each stratum, one province was selected from each region (Bangkok was selected systematically to get three districts)

3) Each province was stratified according to the four educational levels: elementary, junior high school, lower vocational, and high school levels.

4) Systematic sampling was used in elementary school, randomly selecting only ten upper elementary schools, two secondary schools, and two vocational schools.

5) Systematic sampling was used to get ten classrooms from grades 5-6 in target elementary schools, six from secondary schools, and three from lower vocational levels.

6) Each classroom asked participants from all samples to answer the questionnaire.

3. Tool and Data Collection

The study outcomes were as follows.

1) Time intervals of substance use in this study were divided into; substance use refers to having experienced the use of any substance in a lifetime, and current use refers to having experienced the use of any substance within three months before the survey date.

2) In this survey, the following substances were explored:

2.1) cannabis/hashish/cannabis oil

2.2) kratom leave/kratom liquid

2.3) depressants (opium/morphine/heroin/codeine/tramadol/methadone)

2.4) stimulants (YABA/ICE/ecstasy/cocaine)

2.5) hallucinogens (volatile/ketamine/psilocybe mushroom)

2.6) sedatives

2.7) smoking/e-cigarettes

2.8) alcohol

The study tool was a questionnaire developed by the researcher. It is a self-administered questionnaire that four ISAN Substance Abuse Academic Network experts approved, with a CVI value of 0.94. A Cognitive test was conducted with 26 youths in the community. A reliability study was performed with 104 youths in the community, coming up with four-week Test-retest Reliability of 0.96, and Internal Consistency of 0.92.

Data collection was carried out during June and July 2022 as follows.

1) The research team sent a letter requesting consent from parents. Once the parents gave their consent, the research team would proceed to the next step.

2) The research team explained the research objectives and asked for participation among the respondents to answer the questionnaire. The respondents were free to answer or not answer each question.

3) Only the consenting samples had to complete the questionnaire on the research team's iPad and returned the iPad when they completed the questionnaire.

4. Data Management & Analysis

It proceeded as follows.

1) The adjustment was made to ensure that the database was appropriate.

2) The data quality was improved by checking for out-of-range, outlier, and missing data, and adjusting those data accordingly.

3) The data analysis employed descriptive statistics, a 95% confidence interval, and Chi-square.

RESULTS

Teenagers in the sample were 51.2% female (1.3% perceived themselves as homosexual), with a mean age of 14.7 (standard deviation 2.52, median 16, interquartile range 4).

Thai teenagers who reported that they "had used any type of substances", were the cumulative substance users, accounted for 16.55% of the population aged 10-18 years with a 95% confidence interval between 15.48%-17.62%. Of those, 13.07% were still using substances in the past three months (95% confidence interval between 12.10%-14.04).

The most used substances by teenagers were kratom, especially kratom liquid, accounted for 6.94%, followed by sedatives such as Erimin 5, Diazepam, etc., accounted for 6.22%. Cannabis, particularly dried cannabis, accounted for 6.13%, while 4.50% were stimulants, especially YABA, ICE, and ecstasy. The rest were depressants, especially tramadol and codeine, accounted for 2.66%, and hallucinogens (volatile and ketamine), accounted for 2.31%. The most used drugs in the past three months were kratom, followed by cannabis, sedatives, stimulants, depressants, and hallucinogens (Table 1). There was a statistically significant difference between gender and age groups ($p<0.0001$).

There were 2.40% of teenagers who used more than one substance simultaneously (polysubstance), with 1.67% still using polysubstance in the past three months. Notably, 9.39% of teenagers used drugs and alcohol (2.36% used stimulants and alcoholic beverages), 6.04% used drugs with smoking or e-cigarettes, while 5.27% used drugs with alcohol and smoking/e-cigarettes.

Table 1 The Proportion of Teenagers who Used Substances

Age 10-18 Years	Ever Used		Past 3 Months Used	
Type of Substances Used	Percent	95% CI	Percent	95% CI
Cannabis	6.13% ****	(5.44, 6.82)	4.20% ***	(3.62, 4.78)
Kratom	6.94% ****	(6.21, 7.67)	5.96% ****	(5.28, 6.64)
Stimulants (YABA/ICE/ecstasy)	4.50% ****	(3.91, 5.09)	3.34% ****	(2.82, 3.86)
Depressants (codeine/tramadol)	2.66% *	(2.20, 3.12)	1.50% ****	(1.15, 1.85)
Hallucinogens (ketamine/volatile)	2.31% ****	(1.88, 2.74)	1.41% ***	(1.07, 1.75)
Sedatives	6.22% ****	(5.53, 6.91)	3.73% ***	(3.19, 4.27)
Polysubstance	2.40%	(1.96, 2.84)	1.67%	(1.30, 2.04)
Any substance	16.55% ****	(15.48, 17.62)	13.07% ****	(12.10, 14.04)
Alcohol	28.08% ****	(26.79, 29.37)	21.77% ****	(20.59, 22.95)
Substance and alcohol	9.39% ****	(8.55, 10.23)	6.39% ****	(5.69, 7.09)
Smoking/e-cigarettes	10.50% ****	(9.62, 11.38)	6.00% ****	(5.32, 6.68)
Substance and Smoking/e-cigarettes	6.04% ****	(5.36, 6.72)	3.34% ****	(2.82, 3.86)
Substance, alcohol and Smoking/ e-cigarettes	5.27% ****	(4.63, 5.91)	3.04% ****	(2.55, 3.53)

Remark: Age group comparison, statistical significance found

* p<0.05 *** p<0.001

** p<0.01 **** p<0.0001

When dividing the age groups into 10-12 years old (teenagers studying in upper elementary school), 13-15 years old (teenagers studying in junior high school), and 16-18 years old (teenagers studying in high school and lower vocational education), statistical significance was found (Table 1). When comparing sex in each age group, the results were as follows.

Teenagers aged 10-12 who reported that they "had used any type of substances" accounted for 7.57% (11.72% were males and 3.24% were females), and 5.81% of them used drugs in the past three months (8.97% were male and 2.52% were female).

Cannabis was the most popular substance used by teenagers aged 10-12, accounted for 3.17%, followed by sedatives, stimulants, kratom, and depressants. The most commonly used drugs in the past three months were cannabis, followed by sedatives, stimulants, kratom, depressants, and hallucinogens. When classified by gender, it was found that males used sedatives the most 4.48%, followed by cannabis and stimulants 4.14% equally, depressants 3.45%, kratom 2.07%, and hallucinogens 1.03%. Substances used during the past three months were primarily sedatives 3.45%, followed by cannabis and stimulants 2.76% equally. Females used cannabis 2.16%, and kratom 1.80%, but they had never used other substances. During the past three months, 1.80% used cannabis, and 1.44% used kratom (Table 2).

There were 1.76% of teenagers aged 10-12 years who used polysubstance. The users of

polysubstance were all males.They continued to use polysubstance in the past three months, 1.06%. In addition, 3.52% of this group used substances together with alcohol, and 1.06% used substances together with smoking or e-cigarettes. Moreover, 0.70% used substances together with alcohol and smoking/e-cigarettes. Notably, females aged 10-12 started drinking alcohol and using smoking/e-cigarettes at this age and reported that the continued their drinking and smoking/e-cigarettes in the past three months.

Table 2 The Proportion of Teenagers Aged 10-12 Years who Used Substances

Age 10-12 Years	Ever Used			Past 3 Months Used		
Type of Substances Used	Male	Female	Total	Male	Female	Total
Cannabis	4.14%	2.16%	3.17%	2.76%	1.80%	2.29%
Kratom	2.07%	1.80%	1.94%	1.38%	1.44%	1.41%
Stimulants (YABA/ICE/ecstasy)	4.14%	0.00%	2.11%	2.76%	0.00%	1.41%
Depressants (codeine/tramadol)	3.45%	0.00%	1.76%	0.69%	0.00%	0.35%
Hallucinogens (ketamine/volatile)	1.03%	0.00%	0.53%	0.34%	0.00%	0.18%
Sedatives	4.48%	0.00%	2.29%	3.45%	0.00%	1.76%
Polysubstance	3.45%	0.00%	1.76%	2.07%	0.00%	1.06%
Any substance	11.72%	3.24%	7.57%	8.97%	2.52%	5.81%
Alcohol	15.17%	6.47%	10.92%	11.03%	4.32%	7.75%
Substance and alcohol	5.52%	1.44%	3.52%	3.45%	1.44%	2.46%
Smoking/e-cigarettes	3.45%	3.24%	3.35%	2.41%	2.16%	2.29%
Substance and Smoking/e-cigarettes	2.07%	0.00%	1.06%	1.72%	0.00%	0.88%
Substance, alcohol and Smoking/e-cigarettes	1.38%	0.00%	0.70%	1.03%	0.00%	0.53%

Of teenagers aged 13-15 years, 16.70% (20.36% were males and 13.83% were females) reported that they had used any type of substsnces, with 13.29% of them using drugs in the past 3 months (16.29% were male and 12.06% were female).

Kratom was the most commonly used substance by teenagers aged 13-15, accounted for 8%, sedatives and cannabis were accounted for more than 5% each, stimulants were accounted for more than 4%, and other substances were accounted for more than 2%. The most used substances in the past 3 months were kratom, followed by cannabis, sedatives, stimulants, hallucinogens, and depressants. When classified by sex, it was found that males most used kratom (over 9%), followed by sedatives and cannabis (over 6% each), stimulants, depressants, and hallucinogens, respectively. In the past 3 months, kratom was used most (over 7%), cannabis (5%), sedative and stimulants were used over 4%. Females used kratom (over 7%), sedatives and cannabis (over 4% each), stimulants (over 3%) and other substances (over 1%). In the past 3 months, the females used kratom (over 6%), cannabis and sedative (over 3% each), and stimulants (nearly 3%) (Table 3).

Two percent of the youth age group 13-15 had used more than one substance simultaneously (3.6% were males, and less than 1% were females), while 1.6% continued to use polysubstance in the past 3 months.

More than 8% of teenagers had used substances and alcohol, and nearly 5% had used substances combined with smoking or e-cigarettes. Nearly 5% had used substances in combination with alcohol and smoking/e-cigarettes. It is worth noting that more than 1 in 3 males and more than 1 in 5 females drank alcohol. Females were more likely to use substances with alcohol than males did. More than 10% of males used smoking/e-cigarettes. The proportion of those who used substances with alcohol and smoking/e-cigarettes was not different among males and females. In the past 3 months, females used substances with alcohol and smoking/e-cigarettes more than males did.

Table 3 The Proportion of Teenagers Aged 13-15 Years who Used Substances

Age 13-15 Years	Ever Used			Past 3 Months Used		
Type of Substances Used	Male	Female	Total	Male	Female	Total
Cannabis	6.33%	4.26%	5.17%	4.98%	3.19%	3.98%
Kratom	9.05%	7.09%	7.95%	7.24%	6.03%	6.56%
Stimulants (YABA/ICE/ecstasy)	4.98%	3.55%	4.17%	4.07%	2.84%	3.38%
Depressants (codeine/tramadol)	3.62%	1.06%	2.19%	1.36%	0.35%	0.80%
Hallucinogens (ketamine/volatile)	3.62%	1.77%	2.58%	1.81%	1.42%	1.59%
Sedatives	6.79%	4.61%	5.57%	4.52%	3.19%	3.78%
Polysubstance	3.62%	0.71%	1.99%	3.17%	0.35%	1.59%
Any substance	20.36%	13.83%	16.70%	16.29%	12.06%	13.92%
Alcohol	32.13%	22.34%	26.64%	23.98%	13.83%	18.29%
Substance and alcohol	8.14%	9.22%	8.75%	4.07%	5.67%	4.97%
Smoking/e-cigarettes	10.86%	8.51%	9.54%	6.79%	5.32%	5.96%
Substance and Smoking/e-cigarettes	4.98%	4.96%	4.97%	2.26%	3.55%	2.98%
Substance, alcohol and Smoking/e-cigarettes	4.98%	4.96%	4.97%	2.26%	3.19%	2.78%

Teenagers aged 16-18 who reported that they “had used any type of substances” were one in five (25.68% were males and 15.43% were females), with 16.01% using any substances continuously in the past 3 months (19.30% were males and 12.76% were females).

Kratom and sedatives were used for more than 8% each by teenagers aged 16-18 years, followed by cannabis (7.8%), stimulants (5.7%), and depressants and hallucinogens (over 3% each). The most used substances in the past 3 months were kratom, followed by cannabis, sedatives, stimulants, depressants, and hallucinogens. When classified by sex, it was found that males used kratom and cannabis (over 10% each), followed by sedatives (over 9%), stimulants (over 7%), and depressants and hallucinogens (over 3% each). In the past 3 months, males still used kratom for over 8%, cannabis for more than 6%, and sedatives and stimulants for more than 5% each. In comparison, females had used kratom and sedatives 7% each, cannabis more than 5%, stimulants more than 3%, and other substances over 2%. During the past 3 months, they also used more than 7% of kratom, more than 3% of cannabis, as well as sedatives, and 3% of stimulants (Table 4).

There were 2.8% of teenagers aged 16-18 years who used polysubstance (4.8% were males and 1% were females) and 2% continued to use polysubstance in the past 3 months. It is noteworthy that more than 40% of males, and more than 33% of females drank alcohol. Over 10% of the group used smoking/e-cigarettes. More than 10% of teenagers used substances along with alcohol, more than 8% used substances along with smoking or e-cigarettes, and 7.5% used substances along with alcohol and smoking/e-cigarettes. Over the past 3 months, more than 8% used substances with alcohol, 4.6% used substances in combination with smoking or e-cigarettes, and 4.3% used substances with alcohol and smoking/e-cigarettes.

Table 4 The Proportion of Teenagers Aged 16-18 Years who Used Substances

Age 16-18 Years	Ever Used			Past 3 Months Used		
Type of Substances Used	Male	Female	Total	Male	Female	Total
Cannabis	10.05%	5.67%	7.84%	6.38%	3.94%	5.15%
Kratom	10.21%	7.40%	8.80%	8.29%	7.24%	7.77%
Stimulants (YABA/ICE/ecstasy)	7.66%	3.78%	5.71%	5.42%	2.99%	4.20%
Depressants (codeine/tramadol)	3.67%	2.83%	3.25%	2.39%	2.20%	2.30%
Hallucinogens (ketamine/volatile)	3.67%	2.36%	3.01%	2.07%	1.73%	1.90%
Sedatives	9.57%	6.93%	8.24%	5.74%	3.46%	4.60%
Polysubstance	4.78%	0.94%	2.85%	3.35%	0.63%	1.98%
Any substance	25.68%	15.43%	20.52%	19.30%	12.76%	16.01%
Alcohol	39.39%	33.39%	36.37%	33.49%	25.51%	29.48%
Substance and alcohol	16.43%	8.19%	12.28%	11.80%	5.67%	8.72%
Smoking/e-cigarettes	15.31%	12.91%	14.10%	8.45%	6.93%	7.69%
Substance and Smoking/e-cigarettes	11.64%	5.83%	8.72%	6.06%	3.15%	4.60%
Substance, alcohol and Smoking/e-cigarettes	10.69%	4.25%	7.45%	5.74%	2.83%	4.28%

Substance abuse behavior that must be under surveillance is substance use in the past 3 months. It was found that there were 13% of the group who used substances, with 6% using kratom (6.33% were males, 5.61% were females), over 4% using cannabis (5.18% were males, 3.26% were females, a statistically significant difference), over 3% using stimulants (4.48% were males, 2.26% were females, a statistically significant difference) and over 3% using sedatives (4.92% were males, 2.59% were females, a statistically significant difference), and over 1% using depressants and hallucinogens.

There were 1.67% of teenagers used polysubstance in the past 3 months (2.99% were males, 0.42% were females, a statistically significant difference). In addition, some teenagers used stimulants and alcohol during the past 3 months, accounted for 1.54%, especially males for 2.64%. This was risky to develop psychological symptoms and violence.

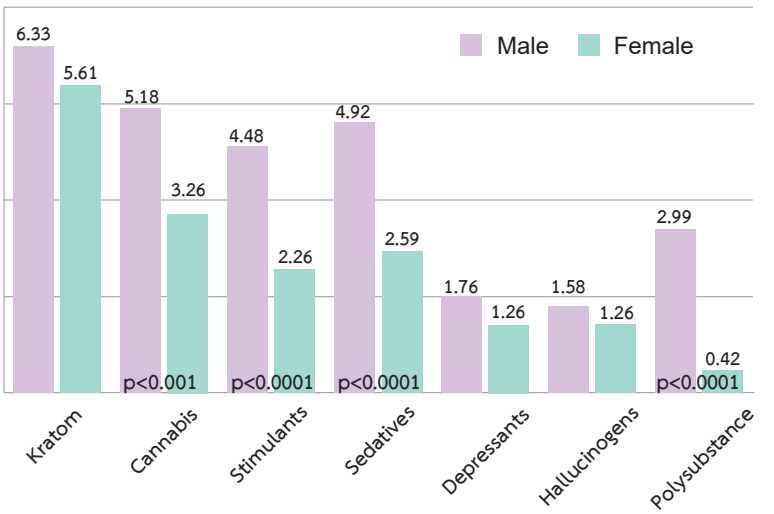

Figure 1 Percentage of Teenagers Using Substances in the Past 3 Months Classified by Sex

DISCUSSION

Although sample size and probability sampling in surveys took into account of the representation (representativeness) and the sufficiency of power (statistical power) in data analysis, but with ethical limitations in research that had to take into account of the independence of answering questions, having enough time, and the willingness to answer questions either individual item or in the whole questionnaire. There might be some discrepancies; for example, in some age groups, the response rate between sex were not equal. However, it was found that the response rate was higher than 90% in all age groups and both sex, making the results of the study less inaccurate.

In this survey, 16.5% of Thai teenagers (10-18 years) reported that they had used any type of substances, with 21.1% of males and 12.2% of females. This figure was more than double the latest household survey in 2019. In 2019, the results of the survey showed that 7.5% of the Thai population (aged 12-65 years old) had used substances, 10.9% of which were used by males and 4.1% by females (Kanato et al., 2019). When classifying type of substances, it was found that the proportion of teenagers who used substances in 2022 was higher than that in 2019 for all drug type

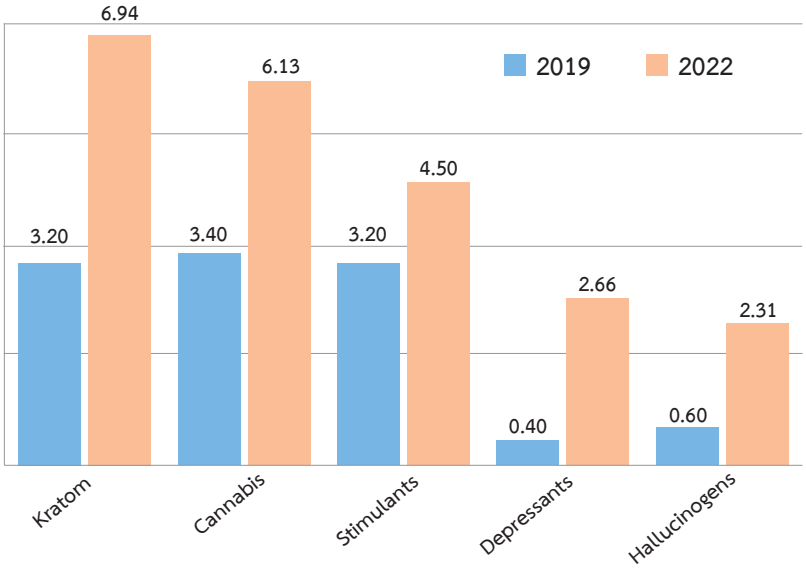

Figure 2 Percentage of Various Substance Users in 2019 and 2022

Thailand has enforced the Narcotics Act (No. 8), B.E.2564 (2021), unlocking "kratom" from the list of narcotic drugs in schedule 5 and the Notification of the Ministry of Public Health on Specify the name of the narcotic drugs in schedule 5 B.E.2565 (2022), considering only extracts from all parts of cannabis and hemp containing more than 0.2% of THC by weight as narcotic drugs.

Policy changes in medical cannabis resulted in more than ten times the number of cannabis users during the last 3 years (past 30 days users) comparing the year 2016 and 2019 (Kanato et al., 2020). When cannabis was removed from the list of narcotic drugs in 2022, the youth under 18 years of age who had used cannabis in the past 3 months increased by 60%, and there was also a 1-fold decrease in cannabis literacy (Kanato et al., 2022).

The group that should be under surveillance is those who used drugs in the past 3 months, which 13% of them using any substance. Of these, they were using cannabis (4.2%), kratom (6%), stimulants (3.3%), and sedatives (3.7%). The number of drug users increased in all drugs from various size estimation studies, especially ICE, which increased more than 160 times over the past 12 years, followed by ketamine, heroin, and kratom. For kratom liquid, it increased more than ten times, and other drugs increased 10-15 times. (Administrative Committee of Substances Abuse Academic Network 2007, Administrative Committee of Substances Abuse Academic Network 2011, Kanato et al., 2016, Kanato et al., 2019)

Studies showed that policy changes caused the increase of cannabis use prevalence among the youths. This study found that 4.2% of adolescents had used cannabis in the past 3 months, higher than the 2.3% rate of cannabis use before delisting cannabis in 2016 (Kanato et al., 2020). The latest nationwide household survey in 2019 reported that Thai people aged 12-19 years who had used cannabis in the past year accounted for 0.12%, while the use in the past month accounted for 0.06% (Kanato et al., 2019).

The study's findings were consistent with a study of the cannabis situation after the legal amendment which compared people from the same generation (Birth Cohort). This study was a longitudinal. It compared the proportions of cannabis use among 3 generations (elementary school, junior high school, and high school/junior vocational education) in 3 time periods (cannabis is an illegal drug period, medical cannabis period, and legalized cannabis period). According to Figure 4, people in the upper elementary school generation used cannabis for 1.15% during the period when cannabis was illegal. When the government announced the use of medical cannabis, the rate of cannabis use in this population rose to 1.94 %. After the legalization of cannabis, the rate of cannabis use rose 2.5 times from the medical cannabis period to 5.01% or a 4.4-fold increase from the illegal cannabis period. This pattern is similar to the cohort of high school/junior vocational students, who used cannabis for 2.92 percent during the illicit cannabis period. When the government declared the use of medical cannabis, the rate of cannabis use in this group rose to 4.01 %. When the government legalized cannabis, the rate of cannabis use doubled from the medical cannabis period to 2.96% or an increase of 2.7 times from the illegal cannabis period. However, those in the junior high school generation used cannabis for 1.17% during the illegal cannabis period. When the government announced the use of medical cannabis, the rate of cannabis use in this group increased 2.6 times to 3.05%. During the legalized cannabis period, the rate of cannabis use was more than doubled from the medical cannabis period to 6.45 percent or a 5.5-fold increase from the illicit cannabis period. (Kanato et al., 2022)

CONCLUSION

There were 16.55% of 10 - 18 year old Thai teenagers who reported that they had used any type of substances, with 13.07% continuing using substances in the past 3 months.

The most substance used by teenagers was kratom (especially kratom liquid), followed by sedatives, cannabis (especially dried cannabis), stimulants (especially YABA), depressants (especially tramadol and codeine), and hallucinogens. The most used substance in the past 3 months was kratom, followed by cannabis, sedatives, stimulants, depressants, and hallucinogens. There were statistically significant differences between sexes and age groups. In addition, there was also a behavior of using polysubstance. There were substances used combined with alcohol, substances used with smoking/e-cigarettes, and substances used with alcohol and smoking/e-cigarettes.

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Risks Associated with Substance Abuse among the Youth in Schools

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ABSTRACT

This survey research aimed to test the association between risk behaviors and substance abuse among the youth in schools in Nakhon Ratchasima province. The sample consisted of 2,497 students from 3 private institutions varying from elementary to higher education. Questionnaires collected data in the academic year 2019. Descriptive statistics analyzed data: percentage, mean, and standard deviation. Risk factors were analyzed with Chi-Square, Odds Ratio, and 95% confidence interval.

The study results showed that 55.2 percent of the sample was female. The average age was 17.7 years old. 8.6 percent of the sample had ever used substances. The vocational level was the highest proportion accounting for 15.1 percent. The age of first use was less than 15 years at all levels of education. Regarding substance abuse, most substance users have used cannabis at 56.6 percent. Analysis of the likelihood of substance abuse experiences with risky behavior,It was found that substance abuse causing the risk of fighting (OR=4.2, 95% CI=2.9-5.9), fighting hospitalization (OR=7.0, 95% CI=4.2-11.6), physical/health problems (OR=1.7, 95% CI=1.3-2.4), learning/emotional disabilities (OR=1.9, 95% CI=1.4-2.5), and hopelessness depression (OR=1.7, 95% CI=1.3-2.9), self-harm (OR=3.4, 95% CI=2.5-4.7), suicidal idea (OR=3.4, 95% CI=2.2-5.0).

Substance abuse among the youth may result in physical and mental health problems, causing physical/health impairments that affect growth and quality of life. There should be a survey and surveillance of the problem of risky behaviors from substance abuse among youth to know the situation and to track the changes and trends of the problem to lead to preventive measures.

Keywords : Risk behaviors, Substance abuse, Adolescence

INTRODUCTION

Substance abuse problems significantly impact social, economic, political, medical, and public health. Problems from substance abuse have increased in size and severity. It is spread to the community. Although all sectors work together to suppress and solve substance abuse problems seriously, the problem still exists in Thailand. It can be seen from the arrest of traffickers and users through various media. The consequences of substance abuse problems are complex and dynamic, which is challenging to manage the corrective actions. Youth are the primary targets for drug traffickers because they are fragile and have a high risk of living in society.

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The risky behavior of young people can lead to substance abuse and other consequences. The most popular substance used among youth were cannabis, methamphetamine, kratom or kratom liquid mixed with other substances, and volatiles (Kanato et al., 2020). Among students, males used substances in higher proportion than females, and higher according to educational year (Bureau of Non-Communicable Diseases, 2011). Children who started drinking alcohol at a young age were more likely to have behavioral problems, leading to other substance abuse (Brener & Collins, 1998). In addition, it manifests in inappropriate sexual behavior, violence, accident, and other risky behaviors. These can be seen in unsafe driving, aggressive behavior, fighting/brawls and assaults, theft, depressive mood, suicidal ideation, etc. (National Institute on Alcohol Abuse and Alcoholism, 2006). A study found that 25.8% of students had ever smoked, and 11.7% of students currently smoked. Smoking among male students was higher than that of female students, and the prevalence of smoking increased by the educational year. One-third of the smoker students smoked with other substances in their cigarettes, and 44.8% smoked when drinking alcoholic beverages (Phitayarangsarit et al., 2012).

Effects of health risk behaviors are associated with drug use or substance abuse, which increases risky behaviors in children and young people. Efforts are being made to find effective measures to prevent risky behaviors and substance use among young people. This requires information from ongoing research studies since health risk behaviors, and drug use among adolescents are constantly changing. A single study of the size and nature of the problem yields limited results. There should be an annual survey of young people to understand, predict the changing trend, and keep pace with the situational problem (DeJong et al., 1998). The international studies of violent behavior in students and adolescents receive attention and conduct ongoing data collection studies such as Monitoring the Future, which focuses on monitoring trends in risk behavior changes and substance abuse among adolescents and young adults; The Youth Risk Behavior Surveillance System (YRBSS), which studies both health-risk behaviors in areas such as risky behaviors and violence, smoking, alcohol, and drug use. In Thailand, although the problem of risky behavior in adolescents and substance abuse is getting attention and there are studies, there is no ongoing action to know the problem condition and to be information for monitoring the trends of changes in health risk behavior problems related to substance use, and a guideline for monitoring changes. These are leading to guidelines for preventing problems and impacts that occur in the future.

OBJECTIVES

1. To describe the types of substances young people use in educational institutions.

2. To explore the consequences of substance abuse on risky behavior among youth in educational institutions.

METHODS

Research Design

This is a Cross-sectional survey study.

Population and Samples

The study population is students in private educational institutions varying from primary to higher education.

The educational institution's selection criteria are as follows;

1) to be a private educational institute/ private educational institution located in the area of Nakhon Ratchasima Province where there are students in primary, secondary, vocational, and higher education in the academic year 2019, and

2) to be a private educational institute that voluntarily participated in this study.

The target population is students in 3 selected private educational institutes, varying from primary to higher education, who must be

able to read and write on their own, registering for various levels in the academic year 2019, totaling 4,291 students consisting of;

general education level 868 students,
vocational level 1,100 students, and
higher education level 2,323 undergraduate students.

The sample is the target population who voluntarily participates in the study.

At the general education level, the researchers clarified and asked for parental consent for students under 18 years old through the postal service (putting a blank envelope with stamps attached to the consent letter). The consent form was asked to be returned within one week. Parents who did not respond within the given timeframe were counted as not consenting to participate in the study. A total of 629 parents consented to the study.

The researchers sent the questionnaire with a consent form to the students consisting of the following;

1) all 18 years old and above, and
2) students under 18 years of age only with their parent's consent.

The researchers enclosed a blank, stamped envelope attached to the consent request, and a blank questionnaire. The students were asked to return the questionnaire with informed consent within one week. Both the consent form and filled-out questionnaire were asked to return within one week. Students who responded after the given timeframe or responded but did not have both the questionnaire and the consent, will be counted as not voluntarily participating in this study. It was found that there were 2,497 students participated in the study, consisting of;

general education level 629 students,
vocational level 791 students, and
higher education level 1,077 undergraduate students.

Tool Development

The data collection tool in this study is a self-administered questionnaire on substance abuse and health behaviors of youth in educational institutions developed by the researchers. The draft questionnaire was considered by three experts from the ISAN Substance Abuse Academic Network, Khon Kaen University. Content validity was analyzed using the consistency index between the questionnaire and the research objectives (Item-Objective Congruence Index: IOC). The researchers selected only a question with a congruence index of 0.5 or higher and adjusted it for suitability.

Data Collection

At the beginning of the 2019 academic year, the researchers coordinated with responsible persons in 3 schools/institutions and asked permission to collect data using a questionnaire. The students were asked to read and write the questionnaire answers. The researcher gathered all the questionnaires, checked them, and recorded the data.

Data Analysis

- Descriptive statistics showed the characteristics of the sample, presented in the form of basic statistical tables: frequency, percentage, mean, standard deviation, median, and range.

- Inferential statistics explored the relationship of risk behaviors with substance use by calculating Chi-Square, Odds Ratio (OR), and 95% confidence interval.

RESULTS

Most of the samples were female at 55.2 percent. The age average was 17.71 years (SD = 3.94). 44.1 percent lived with their parents. The average monthly cost was 4,267.24 baht (SD = 3,634.79) (Table 1).

Table 1 Characteristics of the student's samples.

Characteristics	Primary	Secondary	Vocational	Higher Ed.	Total
	n=271	n=358	n=791	n=1,077	n=2,497
1. Sex:					
• Male	48.0	49.2	68.1	25.6	44.8
• Female	52.0	50.8	31.9	74.4	55.2
2. Age (years):					
mean	10.48	14.07	17.71	20.74	17.71
± sd	± 0.87	± 1.59	± 1.83	± 2.39	± 3.94
3. Living with:					
• Alone	0.4	0.8	22.3	55.6	31.2
• Parents	83.3	81.6	47.2	19.5	44.1
• Friend	-	0.3	10.4	13.9	9.3
• Relatives	15.6	17.3	19.5	10.3	14.8
• Others	0.7	-	0.6	0.7	0.6
4. Monthly expense (Baht):					
mean	1,569.41	2,290.36	4,029.92	5,753.91	4,267.24
± sd	± 3,094.6	± 1,812.7	± 3,232.6	± 3,699.3	± 3,634.8

Regarding the experience of substance use, 8.6 percent of the samples had ever used substances. The vocational level was the highest proportion of substance abuse at 15.1 percent. The age of first use was under 15 years at all levels of education.

Type of substances, it was found that cannabis was the most commonly used substance, accounting for 56.6 percent, followed by Yaba (methamphetamine tablet) at 27.9 percent and Ice (methamphetamine crystal) at 21.1 percent. Kratom/boiled Kratom mixed with other substances was 16.6 percent. Ketamine was 14.8 percent, while ecstasy was 10.2 percent. The rest was volatile at 2.6 percent. Considering the level of education, among those with a higher education level, cannabis was the highest proportion, accounting for 75.7 percent, followed by 37.9 percent Yaba, 32.8 percent Ice, and 26.2 percent ketamine. On the vocational level, it was found that cannabis was the highest proportion at 43.7 percent, followed by Yaba at 22.7 percent. The proportion of using Kratom/boiled Kratom mixed with other substances similar to Ice was 16.8 and 16.0 percent. At the general level, it was found that cannabis was the highest proportion of used, at 68.8 percent, which is higher than the proportion at the vocational level. The rest were Yaba at 25.0 percent, Ice, and Kratom/boiled Kratom mixed with other substances, which were the same proportion at 12.5 percent. It should be noted that substance abuse among elementary students was not found in this study.

Table 2 Substance abuse is classified by level of education.

Substance abuse	Primary	Secondary	Vocational	Higher Ed.	Total
	n=271	n=358	n=791	n=1,077	n=2,497
1. Experience on any substance:					
• Ever used	-	4.5	15.1	7.4	8.6
• Never	100	95.5	84.9	92.6	91.4
2. Age of first use:					
• 14 years and lower	-	56.3	37.8	18.3	31.6
• 15 years	-	37.5	37.8	25.4	32.8
• 16 years	-	6.3	7.8	11.3	9.0
• 17 years	-	-	8.9	23.9	14.1
• 18 years	-	-	5.6	11.3	7.3
• 20 years and above	-	-	2.2	9.9	5.1
3. Type of substance used:					
- Cannabis					
Lifetime	-	68.8	43.7	75.7	56.6
Within 12 months	-	31.3	11.8	23.1	17
- Yaba (methamphetamine tablet)					
Lifetime	-	25.0	22.7	37.9	27.9
Within 12 months	-	18.8	4.2	6.3	6.1
- Ice (methamphetamine crystal)					
Lifetime	-	12.5	16.0	32.8	21.1
Within 12 months	-	6.3	2.5	6.3	4.0
- Ketamine					
Lifetime	-	6.3	10.1	26.2	14.8
Within 12 months	-	-	3.4	8.2	4.6
- Kratom/boiled Kratom mixed with other substances					
Lifetime	-	12.5	16.8	17.2	16.6
Within 12 months	-	6.3	3.4	-	2.5
- Ecstasy					
Lifetime	-	6.2	5.9	19.7	10.2
Within 12 months	-	6.3	3.4	6.6	4.6
- Volatile Substances					
Lifetime	-	-	3.4	1.7	2.6
Within 12 months	-	-	0.8	-	0.5

Considering variables associated with substance abuse experience, it was found that 11.5 percent of youths who had ever used drugs had experience with working and earning income. In comparison, 23.6 percent had ever been suspended from school. For violence and brawls experience, 29.9 percent had ever been carrying weapons, 23.8 percent had experienced fighting, 17.9 percent had ever been fighting at school, and 37.1 percent had experienced fighting that had to be hospitalized.

For health, 12.4 percent had physical/health disabilities, 12.2 percent had learning/emotional control disabilities, and 11.7 percent had hopelessness/depression. 21.1 percent had thoughts of suicide ever, and 19.3 percent experienced self-harm. For risk behavior, 34.1 percent smoked cigarettes, 34.9 percent smoked electronic cigarettes, 14.3 percent drank alcohol, and 18.0 percent played gambling. Aforementioned variables were found to be associated with substance abuse experiences with statistical significance, as shown in Table 3.

Table 3 Variables associated with substance abuse experience.

		Substance abuse experience		chi-square	P value
		Ever n (%)	Never n (%)		
Working and earning income	Yes	59 (11.5)	455 (88.5)	6.624	0.010
	No	153 (7.9)	1,786 (92.1)		
Suspended from school	Yes	39 (23.6)	126 (76.4)	51.919	0.000
	No	162 (7.4)	2,030 (91.5)		
Carrying weapons	Yes	20 (29.9)	47 (70.1)	39.494	0.000
	No	194 (8.6)	2,225 (92.0)		
Fighting	Yes	55 (23.8)	176 (76.2)	75.711	0.000
	No	157 (7.0)	2,089 (93.0)		
Fighting at school	Yes	33 (17.9)	151 (82.1)	21.69	0.000
	No	182 (7.9)	2,120 (92.1)		
Fighting to be hospitalized	Yes	26 (37.1)	44 (62.9)	74.413	0.000
	No	188 (7.8)	2,225 (92.2)		
Physical disabilities	Yes	63 (12.4)	447 (87.6)	11.927	0.001
	No	147 (7.6)	1,800 (92.4)		
Learning disabilities	Yes	95 (12.2)	681 (87.8)	19.176	0.000
	No	116 (6.9)	1,562 (93.1)		
Hopelessness	Yes	87 (11.7)	656 (88.3)	13.463	0.000
	No	123 (7.2)	1,586 (92.8)		

Table 3 Variables associated with substance abuse experience. (Cont.)

		Substance abuse experience		chi-square	P value
		Ever n (%)	Never n (%)		
Thought of suicide	Yes	35 (21.1)	131 (78.9)	38.112	0.000
	No	166 (7.4)	2,085 (92.6)		
Self- harm	Yes	73 (19.3)	306 (80.7)	66.138	0.000
	No	132 (6.5)	1,888 (93.5)		
Gambling	Yes	139 (18.0)	632 (82.0)	125.84	0.000
	No	75 (4.4)	1,638 (95.6)		
Smoking cigarettes	Yes	135 (34.1)	261 (65.9)	391.9	0.000
	No	78 (3.7)	2,013 (96.3)		
Smoking electronic cigarettes	Yes	199 (34.9)	222 (65.1)	20.024	0.000
	No	42 (17.9)	193 (82.1)		
Drinking alcohol	Yes	170 (14.3)	1,015 (85.7)	93.153	0.000
	No	45 (3.5)	1,257 (96.5)		

The results of the multivariate analysis to explore the dangerous consequences of substance abuse using multiple logistic regression statistics were as follows.

The consequences of substance abuse pose a risk to learning. Experienced substance abusers were 3.9 times more likely to be suspended from school than non-users (OR=3.7, 95% CI=2.6-5.7).

For violence and brawls, the consequences of substance abuse pose a risk of violence and brawls. Experienced substance abusers are at risk. Experienced substance abusers were 4.9 times more likely to carry weapons than non-users (OR=4.9, 95% CI=2.8-8.4); 4.2 times were more likely to fight than non-users (OR=4.2, 95% CI=2.9-5.9); 2.5 times were more likely to fight at school than non-users (OR=2.5, 95% CI=1.7-3.8); 7.0 times were more likely to fight until they were hospitalized than non-users (OR=7.0, 95% CI=4.2-11.6).

In terms of health, the consequences of using substances pose potential risks to health. Experienced substance abusers are at risk. Physical/health disabilities were 1.7 times more likely than non-users (OR=1.7, 95% CI=1.3-2.4). Learning/emotional control disabilities were 1.9 times more likely than non-users (OR=1.9, 95% CI=1.4-2.5). Experienced substance abusers were 1.7 times more depressed than nonusers (OR=1.7, 95% CI=1.3-2.9). Self-harm was 3.4 times more likely than non-users (OR=3.4, 95% CI=2.5-4.7). They were 3.4 times more likely to have suicidal thoughts than non-users (adds ratio=3.4, 95% CI=2.2-5.0).

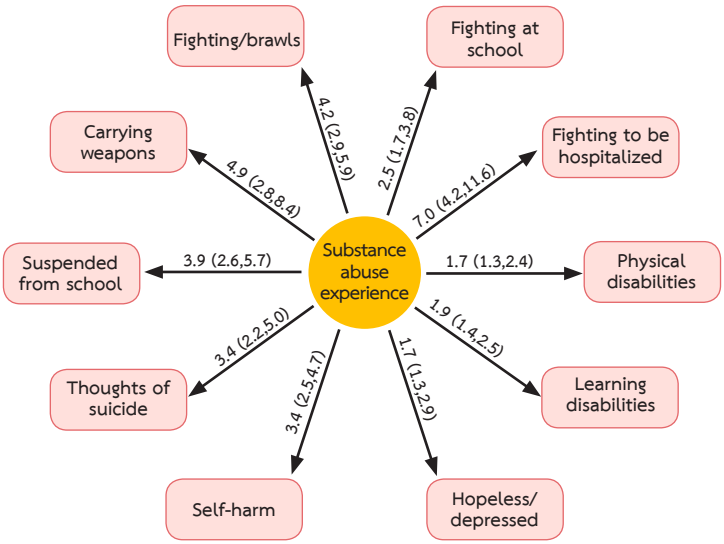

Figure 1 Dangerous consequences of substance abuse (95% confidence interval).

DISCUSSION

The youth in educational institutions who used drugs could be from their curiosity. Also, peer influence of persuasion makes it easy to try drugs. Nine percent of the youth in educational institutions used drugs, much higher than the general population, 7.5% from the latest national household survey (Kanato et al., 2020). The vocational students have ever used drugs in the highest proportion. The age of first drug use is 14 years and lower, found to be up to 30 percent.

Regarding substance use experience, over half of the youth have used cannabis. This reflects the easiness of cannabis accessibility among youth in Thailand. Research elsewhere showed that cannabis accessibility was more accessible after the cannabis law amendment in Thailand (Kanato et al., 2022). Although cannabis use among elementary students was not found in this study, the average age of cannabis first use was 15.65 years. Among early secondary students, cannabis was found to be used. This is echoed by recent studies that cannabis use could be found as early as age 12. The use proportion was higher with age (Kanato et al., 2022). Subsequent drugs were Yaba (methamphetamine tablet), Ice (methamphetamine crystal), Kratom/Boiled Kratom mixed with other substances, ketamine, and volatile substances. Studies elsewhere also found the use of opium and heroin in addition (Leyatikul et al., 2021).

The consequences of drug use pose a risk that affects the lives of young people, both in terms of learning disabilities, violence/brawls, and health. This study found that approximately 24 percent of the youth who used drugs suffered from learning problems that result in suspension from school, and 12.2 percent had learning disabilities. In terms of violence, it was found that those who had experienced substance abuse were at risk of having fights that lead to hospitalization. They were 7.0 times more likely to fight than non-users. This could be a risk of violence in schools as well. This is consistent with the study of Suwaphan Kayotha and Wuthipong

Phakdeekul, which found that the effects of drug use include 51.1 percent quarreling (Kayotha et al., 2018). In addition, the youth were at the age of physically, mentally, and intellectual change. Substance abuse among young people also contributes to physical and mental health problems, causing physical/health impairments affecting growth and quality of life. It also found that people who had experienced substance abuse affect the mental state of the youth with hopeless depression. Self-harm occurred and increased to the point of suicidal thoughts at more than 20 percent.

Based on the results of the study, educational institutions should have a survey of risky behavior among students. Students should be monitored annually to know the problems in order to prevent and fix them. It also monitors the changes and trends of the problems that occur. There should be clear guidelines for screening, supervising, and mentoring students who start to have risky behaviors to provide care and help solve problems appropriately. Schools should play an essential role in enhancing immunity against problems. It should urgently encourage educational institutions to adjust teaching and learning to develop the youth to have EQ, life skills, including general life skills and specific life skills, including a system that covers all educational institutions to help students.

CONCLUSION

The most addictive substances that young people use are cannabis, Yaba, and Ice. Substance abusers among vocational education students had a higher proportion than general education students. The age of first drug use among young people in educational institutions was less than 15 years old because they were probably curious to try it. Moreover, persuasion from friends makes it easy to try drugs. The consequences of using drugs pose risks and affect young people's lives in learning, violence, and physical and mental health.

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