



Institute for Population and Social Research, Mahidol University
Thai Health Promotion Foundation
The National Health Commission Office

Thai Health 2020

Two Decades of Thai Educational Reform: Failures and Successes

- 12 Indicators of Health of Thai Adolescents and Youth
- 10 Outstanding Situations
- 4 Outstanding Accomplishments for Health

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Thai Health

2020

Preface

This Thai Health Report 2020 is the 17th edition in the series. If compared to human years, that would mean this series is approaching adulthood. These reports attempt to highlight the major developments in the health of the Thai population during the year. The reports also provide useful facts and information to keep the population informed about the health situation in the country. Each report has a special theme which it focuses on. Looking back over the series, it can be seen that some situations have improved while others have worsened. New challenges emerge each year while old menaces may resurface.

In this 17th issue, the basic health indicators are presented in 12 sections. Sections 1-3 address indicators of “Health of Thai Adolescents and Youth,” which are discussed across physical, mental and social health dimensions. Sections 4-8 discuss behavioral health related to food consumption. Sections 9-11 discuss physical activity, sexual behavior, and potential health and social risk behaviors. There is discussion of environmental health determinants, online media, family, education and work. Finally, Section 12 summarizes Thai policies for health of teenagers and youth. In this report, “teenagers and youth” covers the population between the ages 10-24 years.

As for health milestones during the year, 10 important stories were selected which occurred in the past year. For example, the air pollution problem (PM2.5) has intensified every year, but especially in the past year. The fight continued to ban three toxic pesticides that are not easy to defeat. There is growing prevalence of clinical depression in youth and adolescent. There have been new advances in policy on medical marijuana use that continued since 2018. There is increased popularity of e-sports, and online games. This volume then showcases four health achievements during the year.

The Thai Health Report 2020 concludes with a reflection on the decades of attempted progress to advance Thai education. During each period of reform, there have successes, failures, and lessons learned. Although Thailand has invested so much in the past, the outcome is not always commensurate with the inputs. Accordingly, the competitiveness of Thai students is slipping in comparison to other countries based on PISA score data. The problems of Thai formal education can be identified at every level, from pre-school to university. The inequality gap is widening as well. By contrast, the cases of Finland and Singapore show how much that can be accomplished if the educational system is of high quality, and the educational philosophy, methods, outcomes, and effectiveness consistently raise the level of their new generations. Is it possible for Thailand to learn from the successful examples of other countries and adapt those lessons to the local context? In truth, the formal Thai education system has some admirable attributes. There is good compliance with the compulsory education law, there are alternative education programs to help the marginalized people in society, and there are always new projects supporting education at various levels. There is a concept of educational reform that calls for change from the bottom up, and that focuses on the relationship between the teacher and student. If Thailand can seriously dedicate itself to the challenge, then perhaps it will be possible to solve educational problems across the board. How broad and deep that success will be remains to be seen. We invite you to join us in the search for sustainable solutions to this and other vital challenges in society.

The Working Group which produced this edition sincerely hopes that Thai Health 2020 will be of benefit to Thai society and help us all to learn from the past to make a more healthy society of the future.

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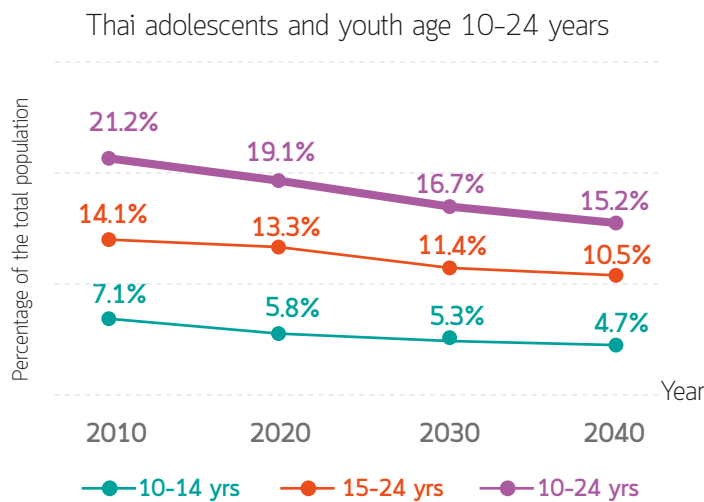
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12

Indicators of
Health of Thai
Adolescents and Youth

12 Indicators of Health of Thai Adolescents and Youth



Number of Thai population (million)/ Year	2010	2020	2030	2040
10-14	4.5	3.9	3.5	3.0
15-24	9.0	8.8	7.7	6.9
10-24	13.5	12.7	11.2	9.9
Total	63.8	66.5	67.1	65.4

Source : Population Projections for Thailand 2010-2040 (Revision), Office of the National Economic and Social Development Council (2019)

“Adolescents and youth” are the population groups in a period of change in which they are making the transition from childhood to adulthood. It is a period of both physical and psycho-social change. The environment, family, and people around adolescents and youth, including various stimuli, all interact together to affect the lives of adolescents and youth. There can be both positive influences and risk factors from society during this period. Thus, it is especially important for the family of adolescents and youth, and related agencies to provide appropriate support during adolescence.

This 2020 Thai Health Report organizes the content into 12 indicators of health of Thai adolescents and youth. Sections 1-3 address issues related to physical, mental, and social health. Sections 4-8 deal with food consumption behavior, physical activity, sexual behavior, other health risk behaviors, and socially risky behaviors. Sections 9-11 turn to aspects of today’s environmental health determinants of adolescents and youth, including the online social media, the family, education and employment prospects. Finally, Section 12 discusses Thai policy related to adolescents and youth.

The World Health Organization defines ‘adolescent’ as a person age 10 to 19 years, while ‘youth’ is defined as a person

age 15-24 years. When merged “adolescents and youth”, these two groups refer to a person age 10-24 years. In the context of the Thai population, the number of persons age 10-24 has continued to decline. It was estimated that there were 12.7 million Thai youth and adolescents in 2020, or about one in five Thais (19.1%). This number and proportion are projected to continue to decline in the coming 10 to 20 years.

Even though adolescents and youth generally have better health status than other age groups, adolescence is also characterized by greater incidence and prevalence of accidental traffic injury. Male adolescents and youth are more accident-prone than female ones; but both sexes experience problems of depression, stress, or bullying that, in some severe cases can result in suicide of the victim. Thus, these are health risk areas that need to be carefully monitored among adolescents and youth. This situation is exacerbated by the increasingly isolated existence of adolescents and youth who communicate heavily through online channels instead of face-to-face interaction. Close friendships and group activities may be on the decline, with unknown consequences for the health of today’s youth in the years ahead. Support services through online counseling and hotline call numbers may have



to play a bigger role to help improve or maintain the health of Thai adolescents and youth.

An emerging area of concern is food consumption behavior of today's younger generation, especially given all the new online applications for ordering food of one's choice. Thus, increasingly adolescents and youth have unsupervised eating habits, and they are probably not concerned about the need to eat a balanced diet. It is easy to predict that adolescents and youth are eating more sugary, processed food and less fresh vegetables and fruit as a result of today's instant-gratification society. A 2019 survey found that one in three female adolescents and youth did not have enough physical activity; more males had enough physical activity compared to females, largely through sports. Still, both sexes were not getting enough physical movement from active transport in their daily life. This is an area which urgently needs to be addressed.

While the problem of teen pregnancy is declining, today's adolescents and youth are becoming more sexually active at a younger age, which carries risk of sexually transmitted infections (STIs) since universal condom use may not be the norm among this group of the population. Incidence of syphilis among adolescents and youth is increasing, and that is a direct indicator of unsafe sex. Thus, this is another area that needs closer monitoring, along with the other health risks cited above. The prevalence of smoking and drinking alcohol among youth seems to have plateaued when it should be declining. This problem is compounded by the number of youth who ride or drive vehicles while under

the influence of alcohol, and shun wearing crash helmets. Addiction to drugs and gambling are persistent problems in society, and youth are no exception, especially given the increased number of formats and online access.

Nearly all Thai youth and adolescents have a mobile phone, and more than 90% have regular access to the internet. However, most use this powerful technology mainly for social communication and entertainment, more than knowledge-seeking or education. This comes at the same time that social media is playing a larger role in the lives of youth, and immediate family ties are weakening. Everyone who lives in a household with an adolescent/youth needs to pay closer attention to finding ways to reaffirm the bonds among family members and reduce idle use of electronic media at the expense of personal interaction in the household.

In the areas of education and employment for today's adolescents and youth and future young adults, it is important to address issues of quality, cost-effectiveness and equality. All adolescents and youth need to have an opportunity for the best education that meets their potential. That is the foundation that will make their life fulfilling and successful as adults. It is especially important to reach out to the NEET group of adolescents and youth (i.e., 'not in education, employment, or training') who are estimated to comprise one out of eight Thai adolescents. Indeed, the Thai government has a policy to promote maximum quality of life for adolescents and youth so that they will bring energy and creativity to help fuel Thai development over the long-term.



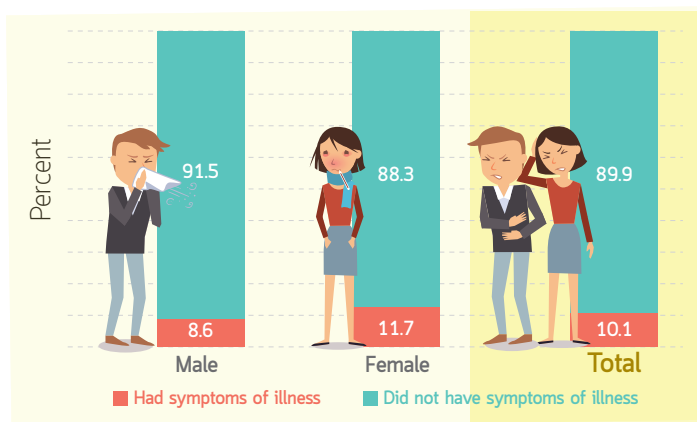
1 Physical Health

In 2017, the adolescent and youth death rate from road accidents was 40.9 per 100,000 population.

“While it is true that adolescents and youth are generally healthier and more disease-free than other groups of the population, they are at the top of the list when it comes to injury and death from road accidents.”

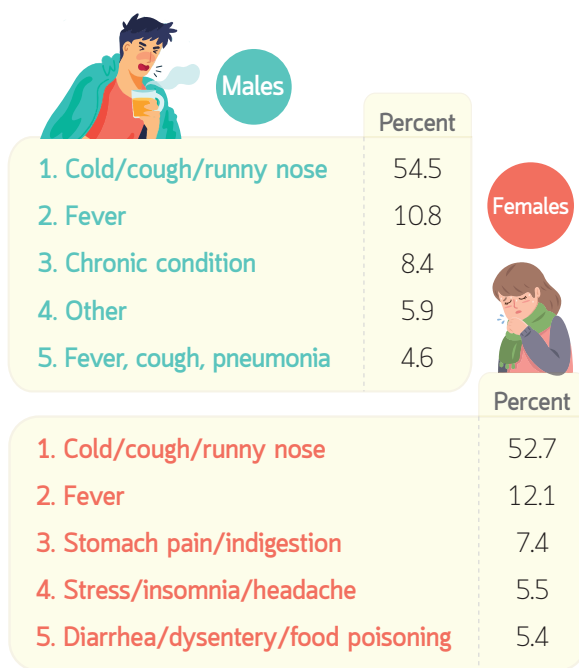
The population between the ages of 10 and 24 is generally healthy and not suffering from chronic disease or other debilitating conditions. At most, they suffer short bouts of illness or minor injuries. In 2017, only one out of ten in this age group reported being sick or injured in the month prior to the survey. Fully half of the illness was common cold or cough.

Adolescents and youth age 10-24 years who were sick or ill in the past month



Remarks : Only illnesses/conditions not requiring hospital admission
Source : 2017 Health and Welfare Survey, National Statistical Office

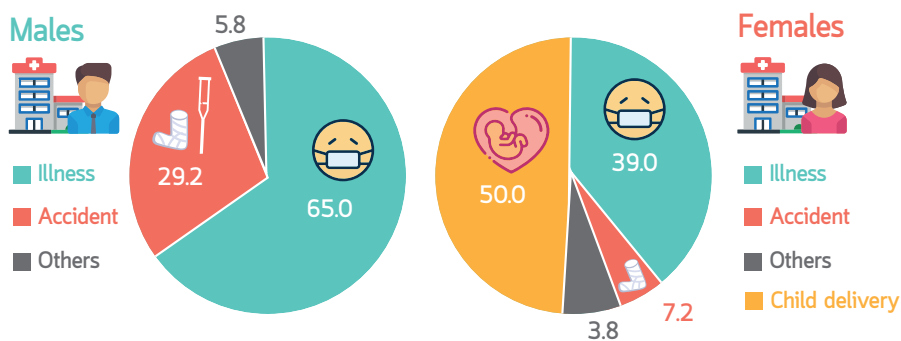
Top 5 causes of sickness/illness of adolescents and youth (age 10-24) - last episode in the past month



Remarks : Only those with illnesses that did not require hospitalization
Source : 2017 Health and Welfare Survey, National Statistical Office

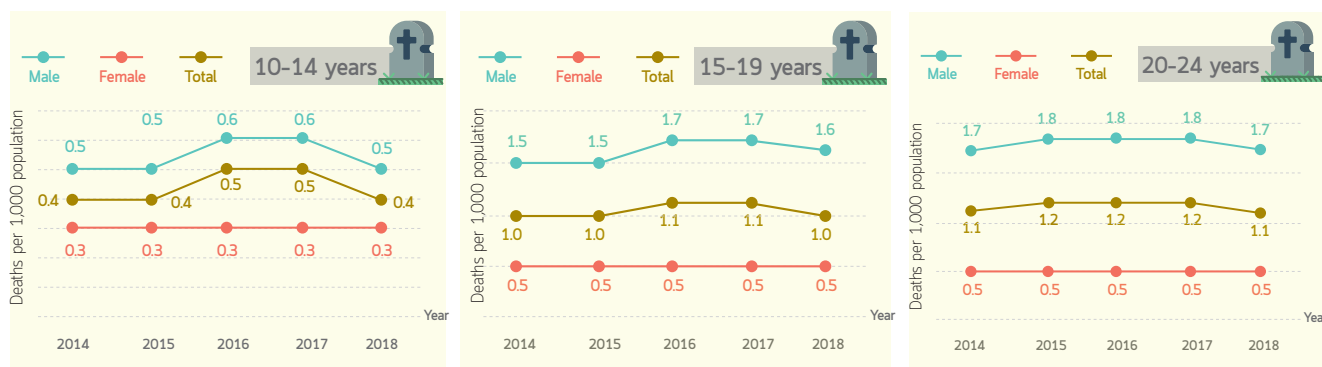
In terms of hospitalizations, in the 12 months prior to the survey, 5.9% of female adolescents and youth had been admitted to a hospital compared to only 3.6% of males. Half of the female hospitalizations were for child delivery, whereas 65.0% of males were admitted to treat an illness, while 29.2% of male admissions were to treat injuries from an accident.

Reason for admission to a hospital in the past year: adolescents and youth age 10-24 years



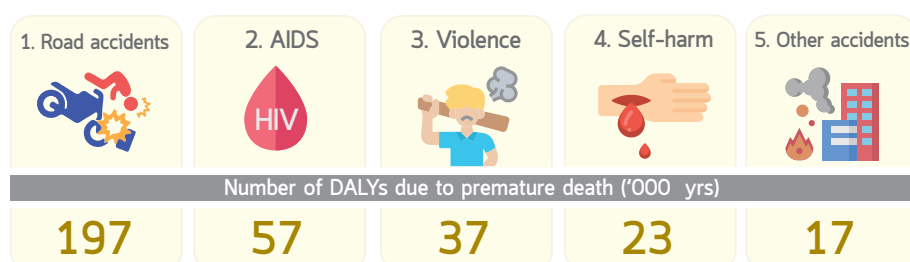
Remarks : Only those with a hospital admission in the past year
Source : 2017 Health and Welfare Survey, National Statistical Office

Mortality of the population per 1,000 population by age group by year



Source : Public Health Statistics: 2018, Ministry of Public Health

Top 5 causes of disability-adjusted life-years (DALYs) Lost due to premature death in 2014

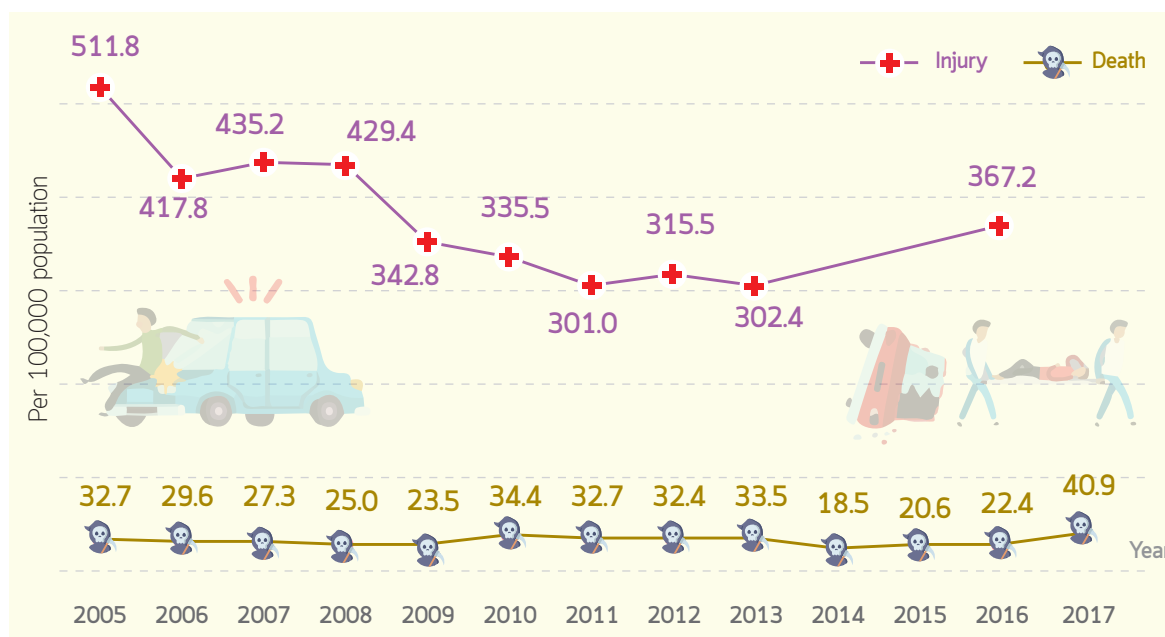


Remarks : Age 15-29

Source : Report of illness and Injury of the Thai population in 2014, International Health Policy Program

Thai males age 15-24 have three times the death rate compared to their female counterparts. Traffic accidents were the most common cause of premature death. Other causes include AIDS, violent assault, self-harm, and non-traffic accidents.

Rate of injury and death from road accidents for youth age 15-24



Source : Thailand Road Safety Observatory, Thai Roads Foundation

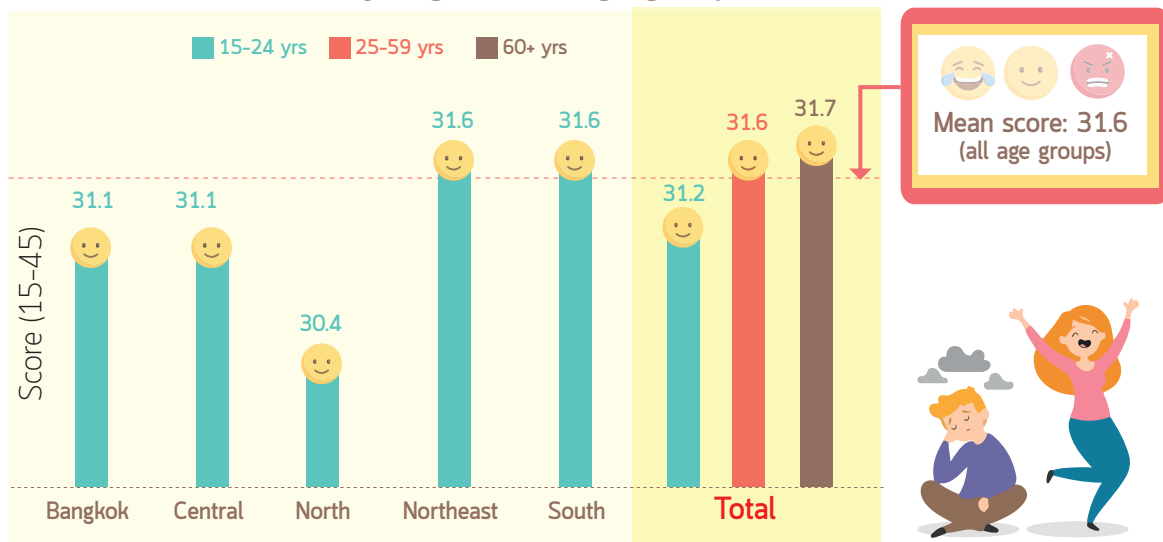
In 2017, there was a significant upturn in the incidence of death from traffic accidents among adolescents and youth. Thus, this is an important area that needs to be addressed from all angles, including education, engineering, law enforcement, and other interventions in order to reduce the large amount of premature death in this group of the population.

2 Mental Health

Adolescents and youth have the lowest mental health scores among age groups, and the population in the north region has the lowest mental health scores among regions of Thailand.

“Every year there is news about another student who has committed suicide. This points to the importance of addressing mental health issues of adolescents and youth. The problem is that society has become so competitive. This is contributing to the stress felt by Thai adolescents and youth.”

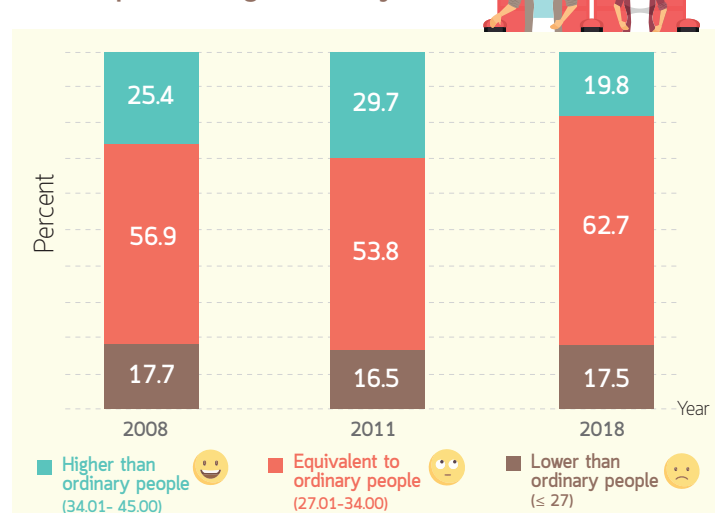
Mental health score, by region and age group in 2018



Remarks : Tha uses a self-assessment tool covering 15 issues in 5 areas, including mental state of being pleased or displeased, mental capacity, mental quality and supporting factors
 Source : Survey on Conditions of Society, Culture and Mental Health, 2018, National Statistical Office

Adolescents and youth have the lowest mental health score when compared with other age groups. Thai adolescents and youth score 31.5 (maximum of 45 points, i.e., best mental health) compared to the national average of 31.6. Adolescents and youth in the north region had the lowest mental health score, 30.4. When looking at trends, those with lowest mental health scores seemed to be improving starting in 2011, but the situation had worsened again by 2019. The proportion of persons age 15-24 years with a mental health score above the national average declined from 29.7% in 2011 to 19.8% in 2018.

Percent distribution of mental health scores (persons age 15-24 years)



Source : Survey on Conditions of Society, Culture and Mental Health, 2008, 2011 and 2018, Thailand National Statistical Office

Top 10 mental health problems for callers to the 1323 Hotline

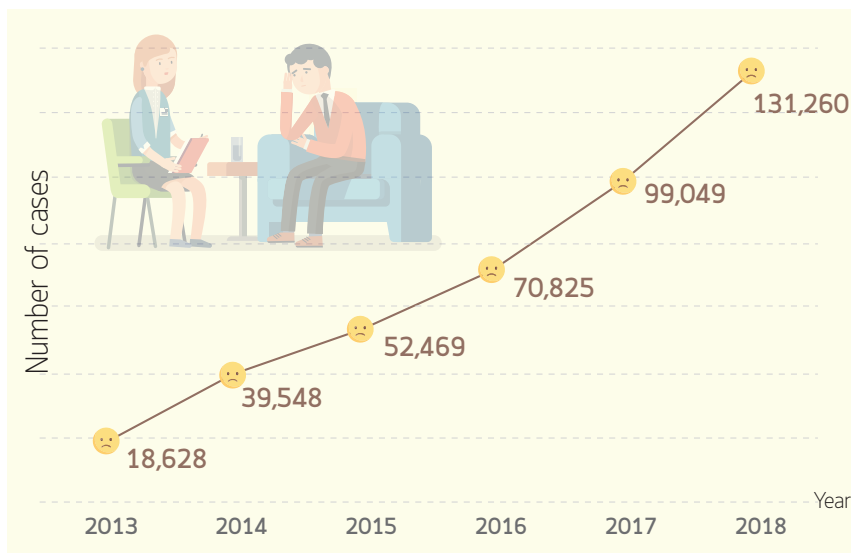


Judging from the calls to the national mental health hotline 1323, half of the callers complained about stress and anxiety, while one in five had issues related to love relationships, while one in ten complained of chronic depression.

Problem	No. of calls	Percent
1. Stress/anxiety	6,405	46.8
2. Love relationship	2,659	19.4
3. Depression	1,497	10.9
4. Psychological disorder	1,327	9.7
5. Family problems	739	5.4
6. Sexual problems	523	3.8
7. Behavioral disorder	173	1.3
8. Thinking about suicide or self-harm	152	1.1
9. School problems	135	1.0
10. Work problems	73	0.5



Cases of clinical depression, age 15-24 accessing services



Remarks : Age 15-21 years

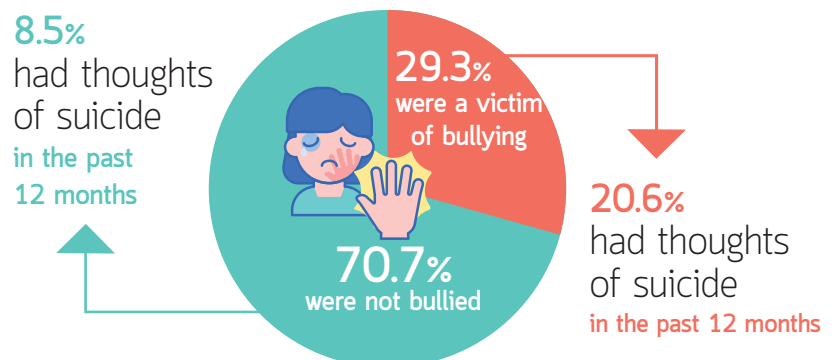
Source : Annual Report of Department of Mental Health, 2018, Ministry of Public Health

These days, depression is becoming more widely acknowledged in Thai society, and there has been increased access to mental health services. In 2013, the number of patients with depression who accessed mental health care services among Thais age 15-24 was 18,628. That number increased seven-fold to 131,260 by 2018.

Source : Annual Report of Department of Mental Health, 2018, Ministry of Public Health

Suffered bullying at least once in the past 30 days

Academic pressure and bullying are major sources of stress for today's adolescents and youth, and this can even lead to thoughts about suicide. A 2015 survey of Thai high school students found that one in five who had been a victim of bullying at school had thought about suicide in the past 12 months. That compares to only 8.5% with suicide ideation among those who had not been bullied.



Remarks : Survey of high school students in grades 7-12

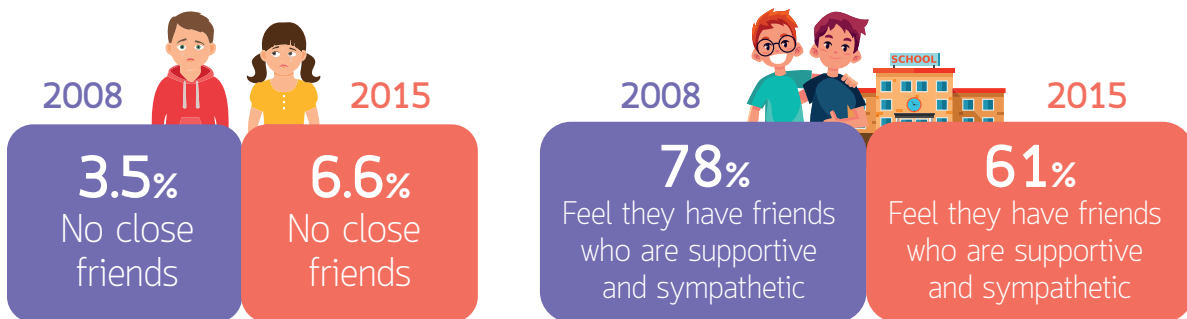
Source : Thailand Global School-Based Student Health Survey, 2015, Ministry of Public Health

3 Social Health

Between 2008 and 2018, the proportion of adolescents and youth who regularly engaged in constructive activities declined from 12% to 7%.

“Thai society is becoming more individualistic. People tend to rely less on each other than they did in the past. Social health is deteriorating in rural areas, but improving in urban areas. As a result, the gap between rural and urban social health has decreased.”

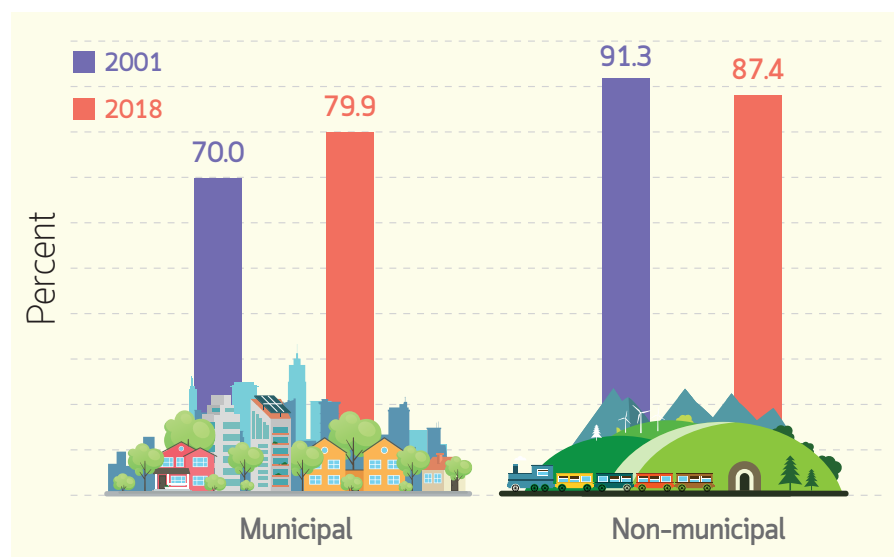
A healthy society is a key to a healthy population. Nowadays, adolescents and youth are becoming more individualistic. In 2008, only 3.5% of adolescents and youth reported they had no close friends. That proportion increased to 6.6% by 2015. At the same time, the proportion of high school students who felt they had friends they could rely on for help or compassion declined from 78% in 2008 to 61% in 2015.



Remarks : Survey of high school students in grades 7-12
 Source : Thailand Global School-Based Student Health Survey, 2008 and 2015, Ministry of Public Health

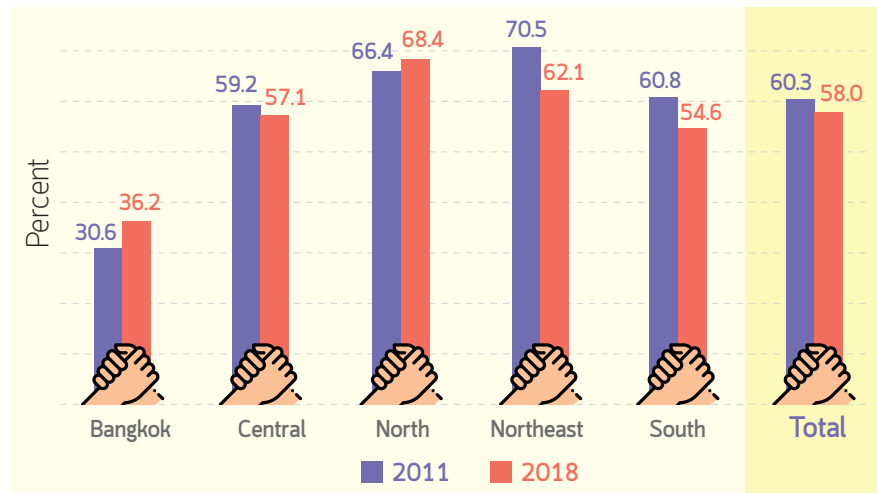
Proportion of adolescents and youth who are confident that the home community is safe (15-24 years)

A key indicator of a healthy society is whether one feels safe. The proportion of adolescents and youth in municipal areas who felt safe increased from 70.0% in 2011 to nearly 80% in 2018. That said, the proportions living outside a municipal area who felt safe were 91.3 and 87.4 between those two years, respectively.



Remarks : Those responding “very” or “most”
 Source : Survey on Conditions of Society, Culture and Mental Health in 2011 and 2018, National Statistical Office

Proportion of adolescents and youth who feel confident that they will get help from the home community if in need (youth age 15-24 years)



Remarks : Those who responded “very” and “most”

Source : Survey on Conditions of Society, Culture and Mental Health in 2008, 2011 and 2018, National Statistical Office

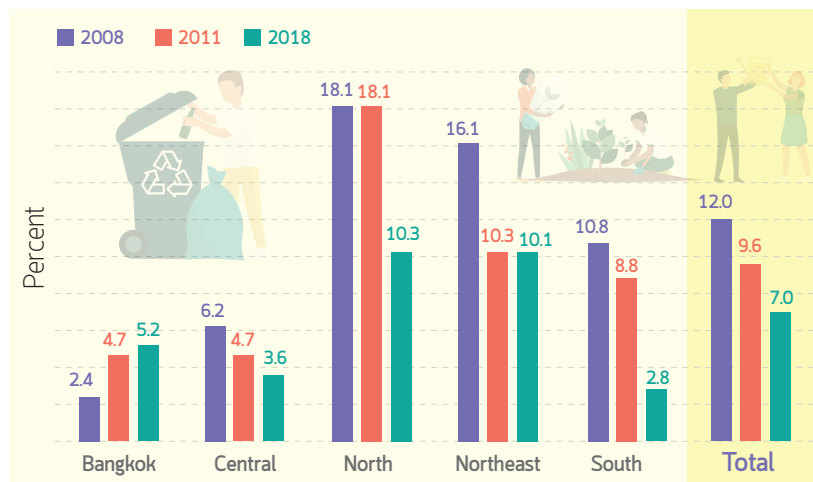


Protections are another dimension of a healthy society. That includes the feeling that if one is in a difficult situation, there are local institutions that are there to help, such as the temple, the community itself, or a charitable foundation. Overall, that feeling of having a helping hand when in need declined from 60.3% in 2011 to 58.0% in 2018. Notably, however, the proportion of persons in Bangkok who felt they had those protections increased from 30.6% to 36.2% between those two years, respectively. That said, people in regions outside of Bangkok had a greater sense of having a helping hand around if they fell into difficult circumstances. However, the proportion who regularly engaged in productive community activities decreased in those regions, while the proportion increased in Bangkok.



One way to reach adolescents and youth who may be having problems is through **phone hotlines** and **online counseling**. These channels may be especially appropriate for adolescents and youth who are particularly sensitive about others finding out about their problems, such as teen pregnancy. In fact, **the hotline 1663 was set up specifically as a number to call to discuss problems of unplanned pregnancy and AIDS**. This hotline service is quite popular with youth. In 2017 alone, **the hotline received over 25,000 calls** by adolescents and youth regarding unintended pregnancy.

Proportion of adolescents and youth who regularly join activities to benefit the community (15-24 years)



Remarks : “Activities” refers to reforestation, helping people in difficult circumstances, anti-drug campaigns, etc.

Source : Survey on Conditions of Society, Culture and Mental Health in 2008, 2011 and 2018, National Statistical Office

4

Food consumption behavior

Fast food is becoming popular among Thai adolescents and youth. Two out of three adolescents and youth in Bangkok have at least one fast-food meal per week.

“The evolution of nutritional behavior is being accelerated by modern information and communication technology. The internet and social media are flooded with pages on food fads, such as food review sites, food blogs, and food delivery applications which allow smart phone users to order meals by a swipe of the screen. These technologies are becoming extremely influential in defining eating trends of the new generation of consumers and providing easier access to a wide range of eating establishments than ever before.”



Number of meals and reason for skipping a meal (10-24 years)

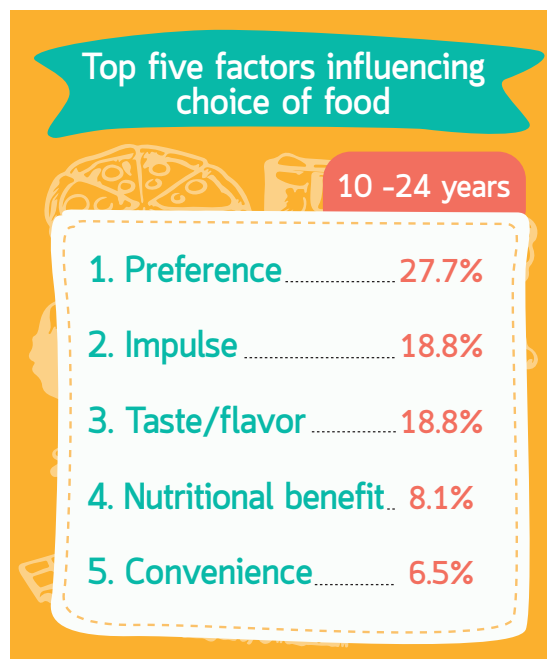
Reason	male	female
No time	74.7%	55.5%
On a diet	2.7%	24.4%
Others	22.6%	20.1%

Eating behavior is a key factor for one's health. Most Thai adolescents and youth eat three meals a day. Of those who skipped a meal, three-fourth of male adolescents and youth said it was due to lack of time, while about one-half of females did so. An additional one-fourth of females who skipped a meal was to lose weight.

- Eat at least three meals a day
- Eat less than three meals a day

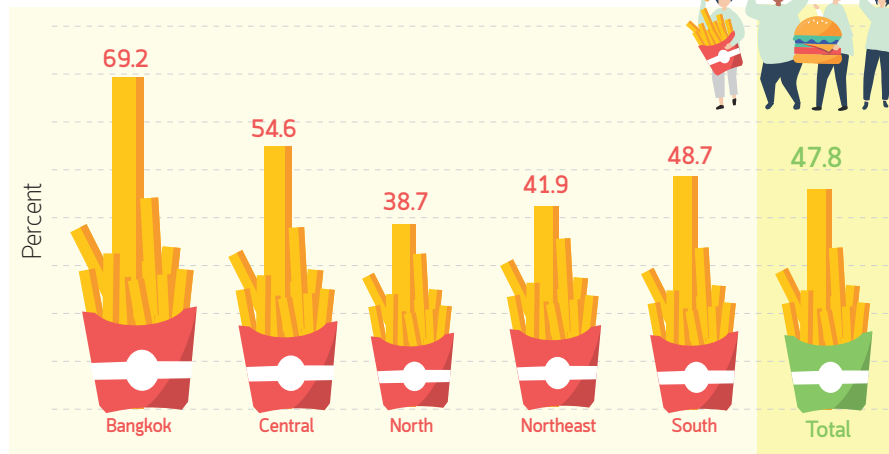
Source : Food Consumption Behavior Survey in 2017, National Statistical Office

A survey of food purchasing decisions found that 27.7% of adolescents and youth chose what they liked, 18.8% chose what they felt like eating, while another 18.8% made their choice based on good flavor of the dish. In other words, only a small minority of adolescents and youth (8.1%) made food selection based on nutritional value. Those findings are consistent with fast-food consumption of Western-style dishes which are tasty but high in calories and fat. In 2017, a survey found that nearly half (47.8%) of Thai adolescents and youth had at least one fast-food meal per week. The survey also found low levels of fruits and vegetables consumption in that population, particularly among the 10-14 age group, where only one in four consumed fresh fruits and vegetables every day.



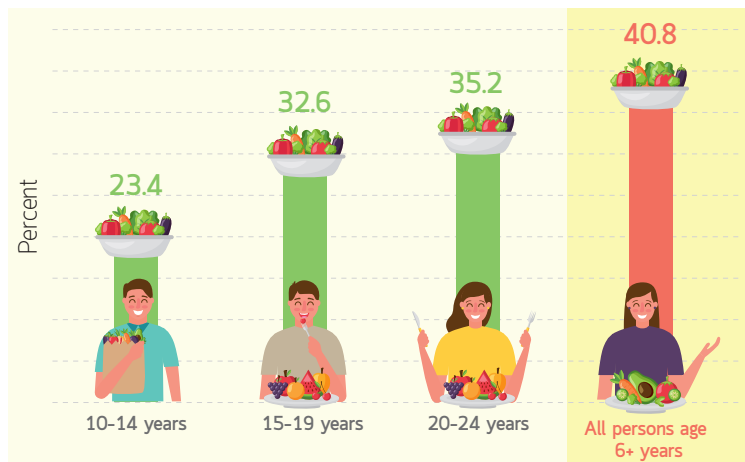
Source : Food Consumption Behavior Survey in 2017, National Statistical Office

Proportion of adolescents and youth age 10-24 years who have at least one fast-food meal (Western style) per week, by region



Source : Food Consumption Behavior Survey in 2017, National Statistical Office

Proportion of adolescents and youth age 10-24 years who eat fruits and vegetables every day



Source : Food Consumption Behavior Survey in 2017, National Statistical Office

As noted, technology is becoming more and more an indispensable feature of daily life, including consumption and selection of food outlets/products. Today, there are many smart phone applications that connect consumers and food providers. With the fast market growth of these applications, it is undeniable that they are going to drive consumption behaviors of the next generation of food consumers in ways that are hard to predict.



Food Delivery Application



Food delivery applications are becoming more and more widespread, especially in Bangkok and other big cities. The technology allows consumers to conveniently order food without having to face long commute, traffic, no parking spots, hot weather, or long queue.



11%
average annual
market growth

63% of sample think
they will start ordering via
food delivery application
more and eat out less

2019 market value forecast of
33 - 35 billion baht

Popular times for ordering food
Friday and Saturday evenings

Source : K SME Analysis: SME food outlets and food delivery, Kasikorn Research Center

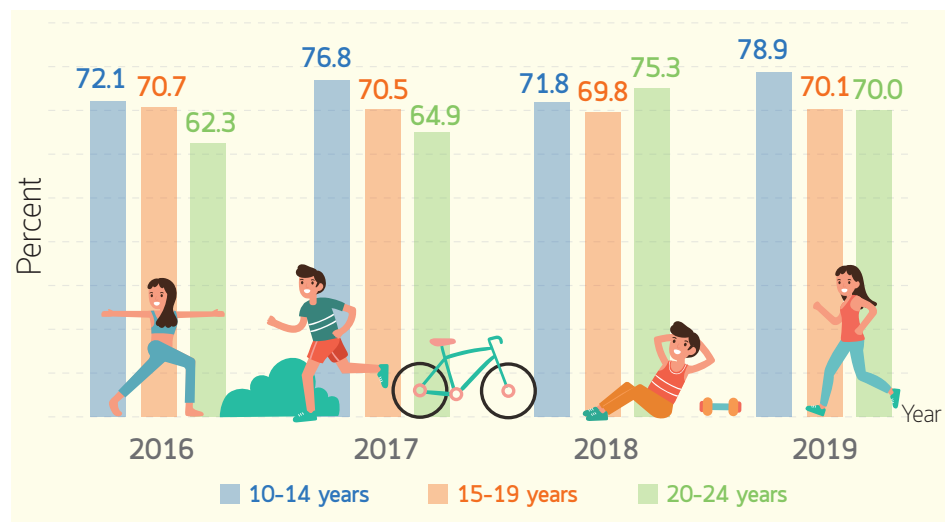
5 Physical Activity

Among male adolescents and youth, 79.8% have adequate daily physical activity. However, 66.6% of their female counterparts do so.

“The differences in level of physical activity of people is not just a matter of individual disposition. In fact, there are many factors which come into play such as environment and socio-cultural context, and external motivational factors, among others. Thus, it is important to understand these determinants when implementing programs to promote physical activity.”

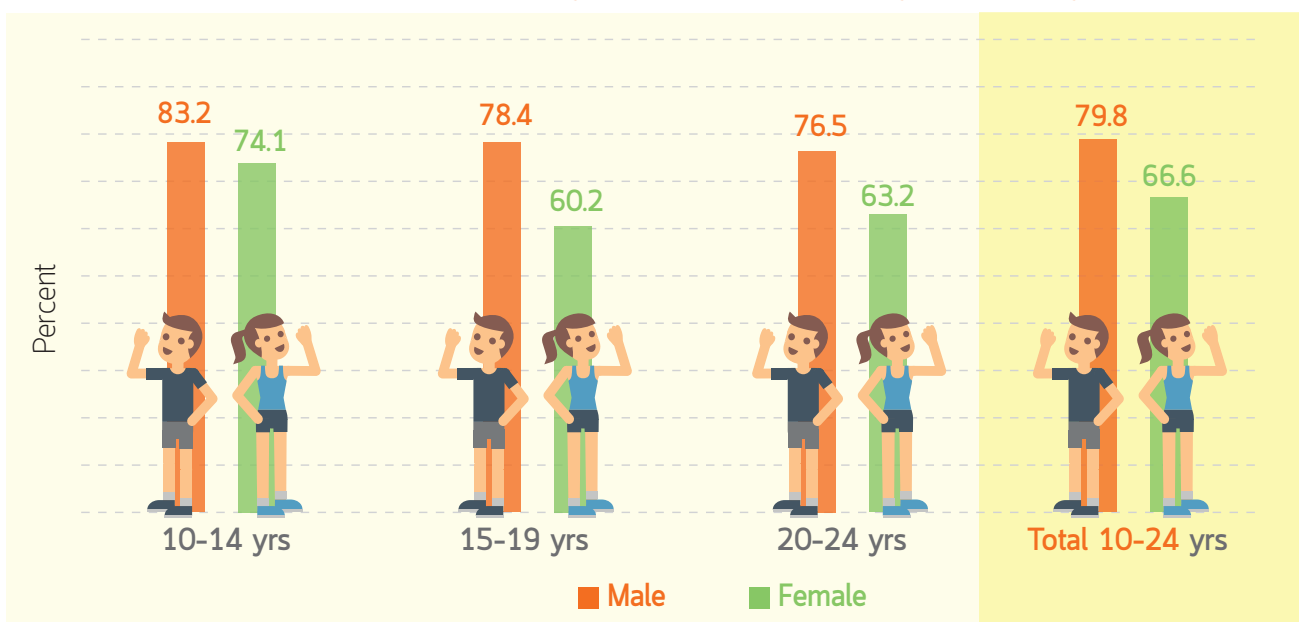
The age group 10-14 years is the period when Thais have the highest percentage of adequate daily physical activity. However, after that, the proportion tends to decline with age. In 2019, fully 78.9% of the population age 10-14 had adequate physical activity compared to about 70% in the population age 15-24.

Proportion of adolescents and youth with adequate physical activity

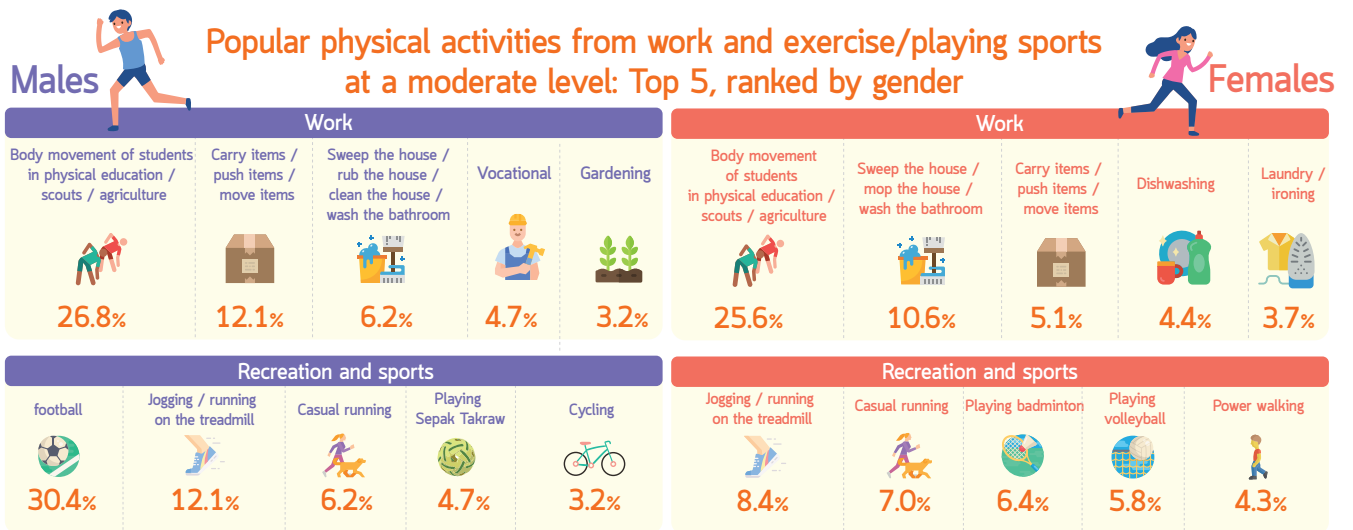


Source : Thailand Physical Activity Surveillance System Project, 2019, Institute for Population and Social Research, Mahidol University

Proportion of adolescents and youth with adequate physical activity in 2019

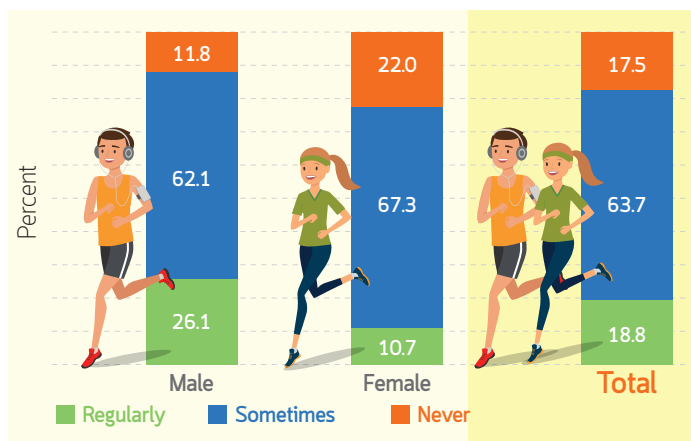


Source : Thailand Physical Activity Surveillance System Project, 2019, Institute for Population and Social Research, Mahidol University



Remarks : For youth age 10-24 years
 Source : Thailand Physical Activity Surveillance System Project, 2019, Institute for Population and Social Research, Mahidol University

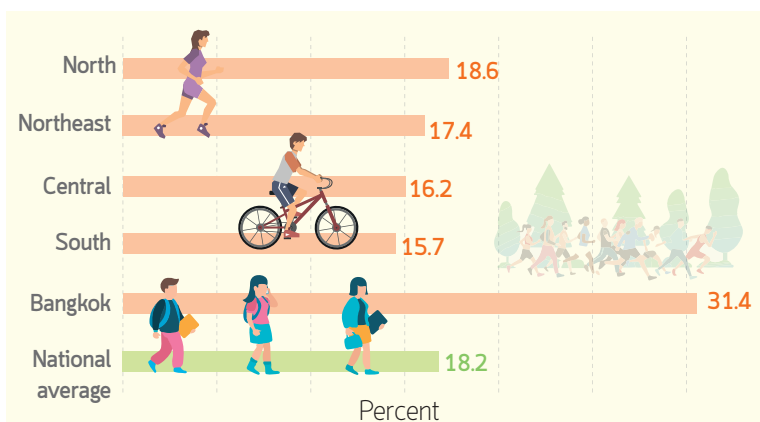
Playing sports and exercising for adolescents and youth age 13-24 years



Source : Survey on Conditions of Society, Culture and Mental Health in 2018, National Statistical Office

Perhaps due to the socio-cultural context, Thai females have less physical activity than males, and for all age groups. Part of this is also attributed to the relatively fewer structured physical activities and sports for females, compared to males in Thailand. In 2018, the survey found that one in five female adolescents and youth did not participate in any health-promoting physical activity or sports at all. The only physical activity for female adolescents and youth occurred as part of the physical education course. By contrast, male adolescents engaged in physical activity at school and after school, such as playing football.

Physical activity for getting from Point A to Point B by region



Remarks : Youth age 10-24 years
 Source : Thailand Physical Activity Surveillance System Project, 2019, Institute for Population and Social Research, Mahidol University

Recommended levels of physical activity by age group

Aged 5 - 17 years

At least 60 minutes of accumulated moderate- to vigorous-physical activity daily



Aged 18 - 64 years

At least 150 minutes of moderate-intensity aerobic physical activity throughout the week, or at least 75 minutes of vigorous-intensity aerobic physical activity throughout the week. Each activity should be performed at least 10-minute duration.



Source : Global Recommendations on Physical Activity for Health 2010, World Health Organization

Physical movement as part of commuting, whether by walking or bicycling, can be influenced by the context in which one lives. For Thai adolescents and youth, 18.2% reported physical activity as part of going somewhere. In Bangkok, the proportion was 31.4%, or nearly double that for other regions of the country.

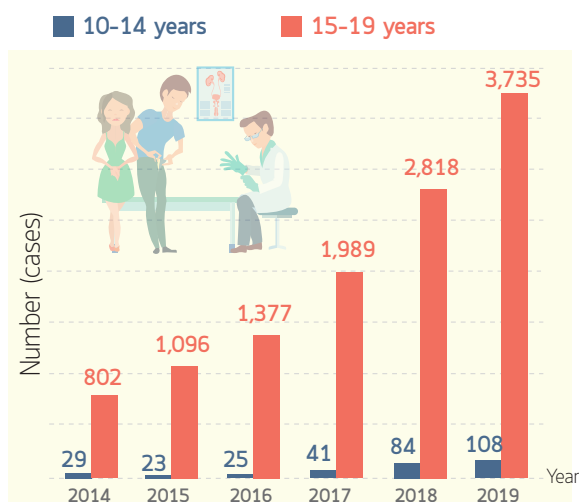


6 Sexual Behavior

Cases of syphilis among Thai adolescents and youth have rapidly increased in recent years. In 2019, there were almost 4,000 cases.

“Risky sexual behavior during adolescence and youth can lead to life-altering events and consequences. The consequences are not only health-related, but also can impact on all facets of a young adult’s life, such as teenage pregnancy. Thus, it is important to educate, and shape attitudes and values that discourage risky sexual behavior.”

Number of adolescents and youth with syphilis



While Thailand is known throughout the world as having successfully responded to HIV, which is a sexually-transmitted infection (STI), the new generation of adolescents and youth are contracting syphilis at

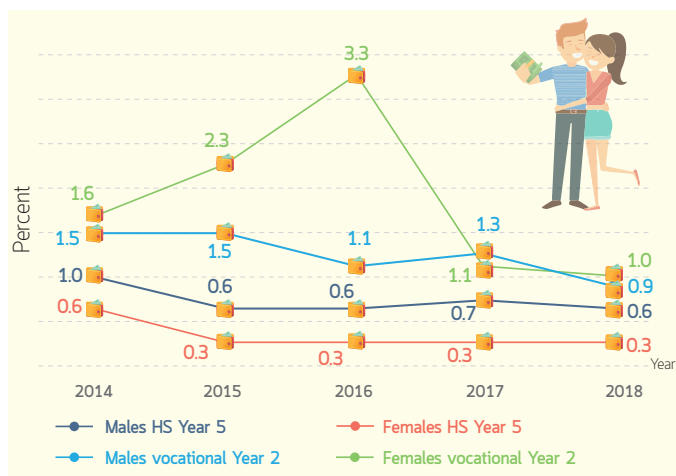
In 2019, 16,262 adolescents and youth had STDs (excluding HIV/AIDS). Among them, 687 were in the 10-14 age group and 15,575 in the 15-19 age group.

levels not seen before. This trend is one indicator that STI prevention education is not reaching the younger generation of Thais. Alternatively, it is possible that the sex education is not effective enough to convince adolescents and youth of the importance of safe sex and condom use for every episode of sex. It is also possible that adolescence and youth sex behavior is changing in ways that have not been anticipated by the STI prevention programs.

Source : Report of HIV Risk Behavioral Surveillance in Thailand, 2014 – 2019, Bureau of Epidemiology, Department of Disease Control, Ministry of Public Health

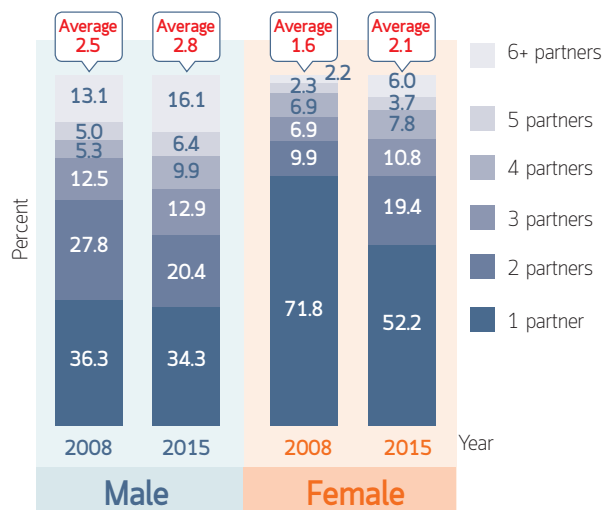
Overall, sexual behavior among the school-age population has been improving. For example, the prevalence of having sex in exchange for cash or in-kind compensation has declined over time. At the same time, the number of sex partners reported by both male and female adolescents and youth has increased significantly.

Proportion of school-age students who exchange sex for money or in-kind compensation



Source : Report of HIV Risk Behavioral Surveillance in Thailand, 2014-2019, Bureau of Epidemiology, Department of Disease Control, Ministry of Public Health

Average number of lifetime sex partners for high school students

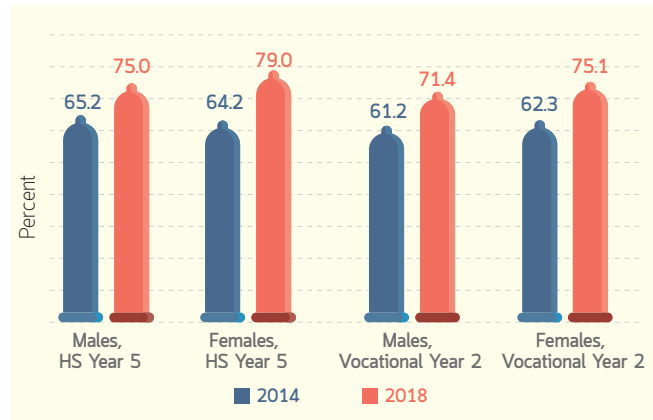


Remarks : High school students grades 1-6

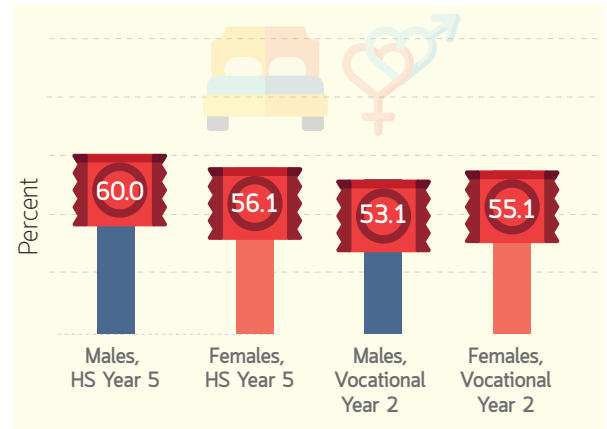
Source : Thailand Global School Based-Student Health Survey, 2008 and 2015, Ministry of Public Health

A survey among students found that only about half used a condom during sex with a casual partner (i.e., not their lover) in the past year. That said, condom use at first sex is improving, and condom use at last sex is also increasing, as reported by female students.

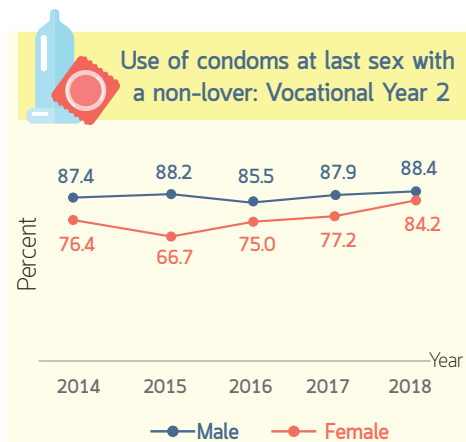
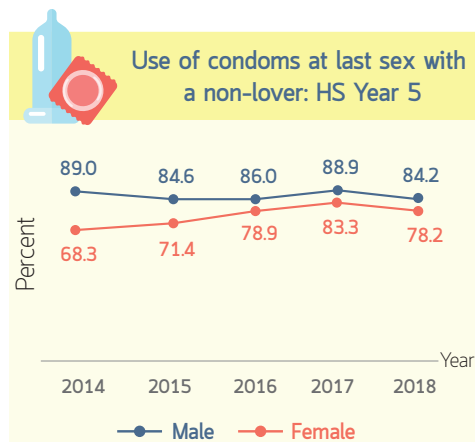
Condom use at first sex



Use of condoms for every episode of sex with a non-lover in the past 12 months



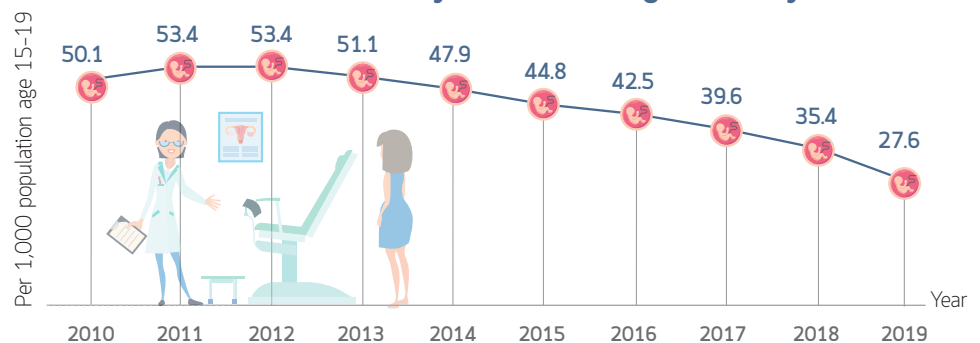
Source: Report of HIV Risk Behavioral Surveillance in Thailand, 2018, Bureau of Epidemiology, Department of Disease Control, Ministry of Public Health



Source: Report of HIV Risk Behavioral Surveillance in Thailand, 2014-2019, Bureau of Epidemiology, Department of Disease Control

Since 2013, the trend in teen delivery of a live birth has been declining, while STIs have been increasing, particularly syphilis. While both events reflect a lack of condom use, the trend in teen pregnancy may be influenced more by other methods of contraception or sex behavior. As noted, both male and female students are reporting a greater number of sex partners, while it is unclear how effective the current sex education and STI prevention programs are for adolescents and youth. Clearly however, there is a glaring need to improve adolescent and youth awareness and respect for condom use. That is because the male condom is the one method that is easily available and affordable which can prevent both unwanted pregnancy and STIs.

Rate of live-birth delivery for females age 15-19 years



Source: Report of the Situation of Reproductive Health, 2019, Bureau of Reproductive Health, Ministry of Public Health



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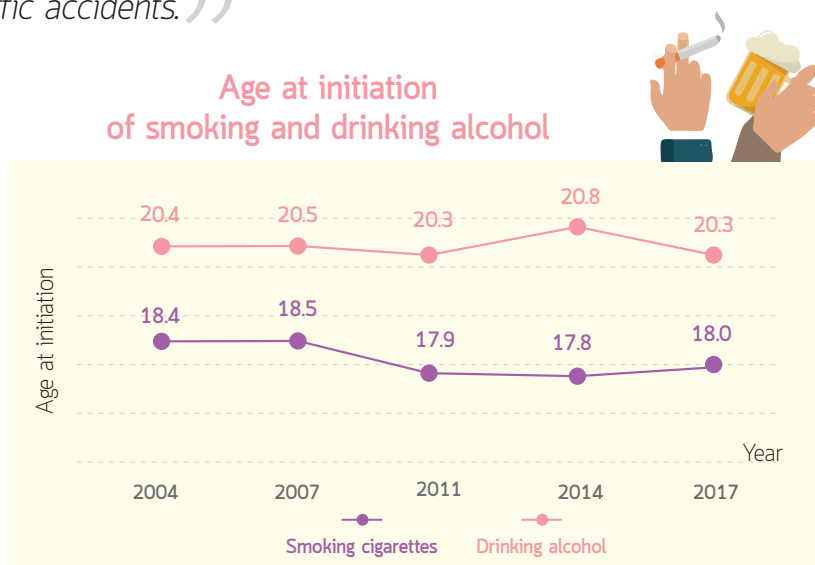
Other Health Risk Behaviors

In 2017, of the Thai youth age 15-24, 15.4% reported smoking cigarettes and 23.9% reported drinking alcohol.

“Consumption of tobacco and alcohol remain problem health issues for Thai adolescents and youth. The use of these drugs could lead to associated problems, and even injury or death, especially from road traffic accidents.”

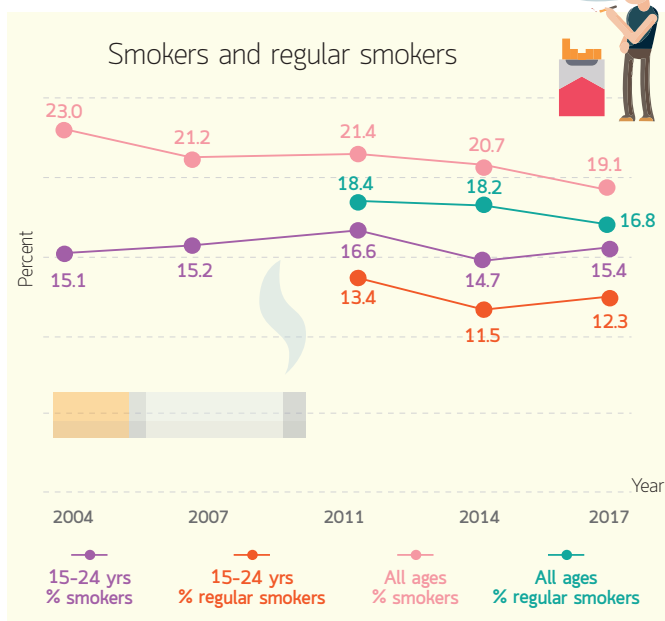
In adolescence, consumption of alcohol and cigarettes invariably has negative health consequences, as well as adverse psycho-social impacts. Since addiction to alcohol and tobacco usually has its origin in adolescent behavior, it is very important to implement prevention interventions before adolescents and youth start experimenting with cigarettes and alcohol. A survey in 2017 found that the average age of first use of tobacco and alcohol was 18.0 and 20.3 years, respectively. Since then, there has been a slight declining trend in the age at first use of these addictive substances.

Age at initiation of smoking and drinking alcohol



Source : The Smoking And Drinking Behavior Survey, National Statistical Office

Smoking



Remarks : “Smoker” means a persons who still smoked cigarettes at the time of the survey, including those who occasionally smoke and those who regularly smoke

Source : The Smoking And Drinking Behavior Survey, National Statistical Office

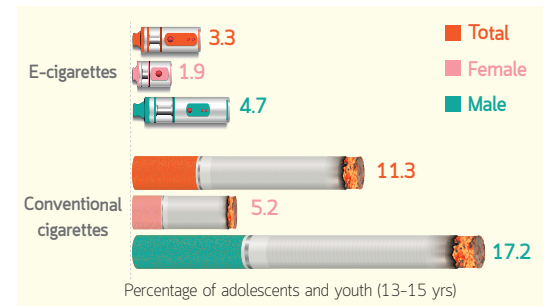
Drinking Alcohol



Source : The Smoking And Drinking Behavior Survey, National Statistical Office

Even though the overall prevalence of smoking in the Thai population has been declining over time, the proportion of smoking among the age group 15-24 years has remained somewhat constant at around 15%. In 2017, 12.3 of adolescents and youth, or one in eight, said they were regular smokers. Data on smoking for the youngest adolescents (under age 15) is sparse or non-continuous. However, an alarming trend is the advent of new delivery systems for nicotine, such as e-cigarettes and the practice of 'vaping.' In 2015, about 5% of adolescents and youth age 13-15 years had already tried these new methods of smoking. This development needs to be monitored and studied more carefully.

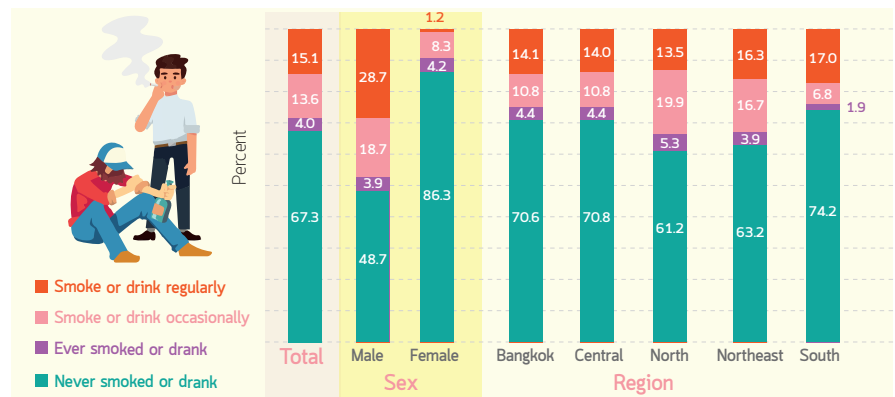
Smokers at age 13-15 years



Source : Global Youth Tobacco Survey 2015, World Health Organization

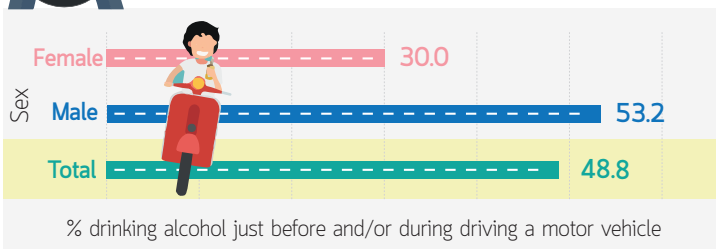
Regular drinkers of alcohol among the population age 15-24 has declined slightly from 25.0% in 2014 to 23.9% in the latest survey. However, that level is still higher than the prevalence measured during 2004-2011. When considering both smoking and drinking in the 2017 survey, two-thirds of adolescents reported not consuming either drug in their lifetime.

Smoking and drinking behavior of adolescents and youth age 15-24 years



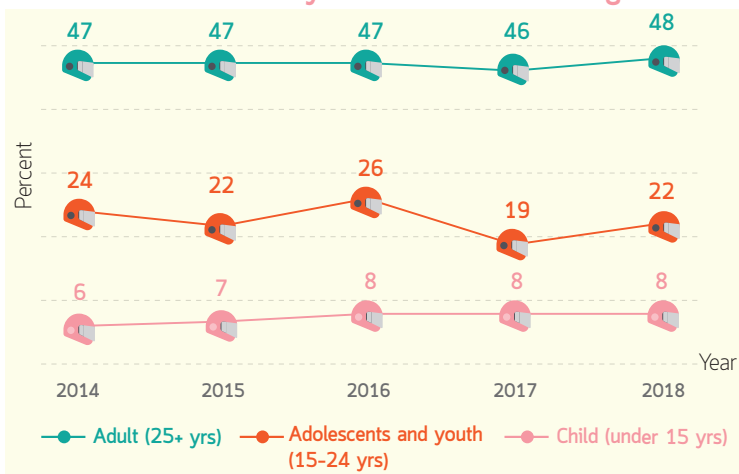
Source : The Smoking And Drinking Behavior Survey, National Statistical Office

Drinking and driving a motor vehicle among adolescents and youth age 15-24 years



Source : The Smoking And Drinking Behavior Survey, National Statistical Office

Rate of motorcycle crash helmet usage



Source : Rate of motorcycle helmet usage, 2014 - 2018, Thai Roads Foundation

The use of alcohol by adolescents and youth is a problem for the health of the population and society at-large and, therefore, this risk behavior needs to be addressed seriously by all related sectors. Drinking can lead to a whole host of associated risk behaviors, with potentially dire consequences. The loss of control and freedom from inhibitions that alcohol produces can encourage adolescents to take unacceptable risks, which can result in injury and death, especially by road traffic accidents. In 2017, nearly half of a sample of adolescents and youth reported drinking before or during driving a motor vehicle. A survey of motorcycle helmet use in 2018 found that only 48% of adults wore a helmet, while the proportion was only 22% for adolescents and youth.

8

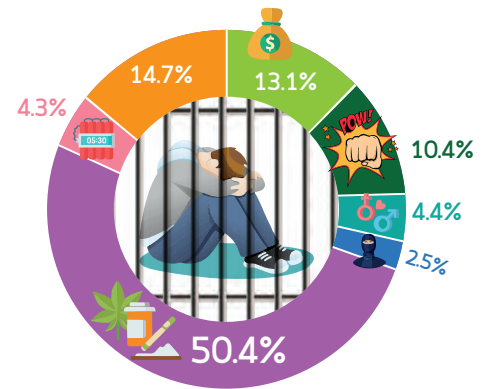
Socially Risky Behavior

In 2019, a total of 20,003 youth were remanded to Juvenile Observation and Protection Centers around Thailand, and half of these cases were related to illegal drugs.

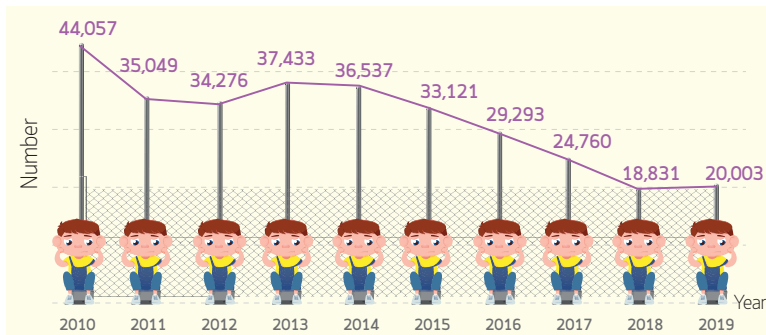
“Adolescence is the period of transition from childhood to young adulthood, and this is accompanied by changes in mood, thoughts, and curiosity about new experiences and experimentation. However, these explorations are often done without careful thinking or a sense of the need to protect oneself from harm. Thus, many youth stumble into inappropriate or even harmful behavior during this time of transition.”

The Department of Juvenile Observation and Protection reported that the peak year for admissions to its Juvenile Observation and Protection Centers was 2010, with 44,000 cases. While the number of admissions has declined since that year, addictive drug use is still the main reason while youth are caught and remanded to the Center. Use of illegal, addictive drugs is both a health and societal problem, but this is especially true for adolescents and youth. In 2018, among all persons arrested for drug offenses and/or in drug rehabilitation programs, 40% were under 25 years of age, and most were age 20-24.

Incarceration/detention of adolescents and youth under age 18 years by crime, 2019



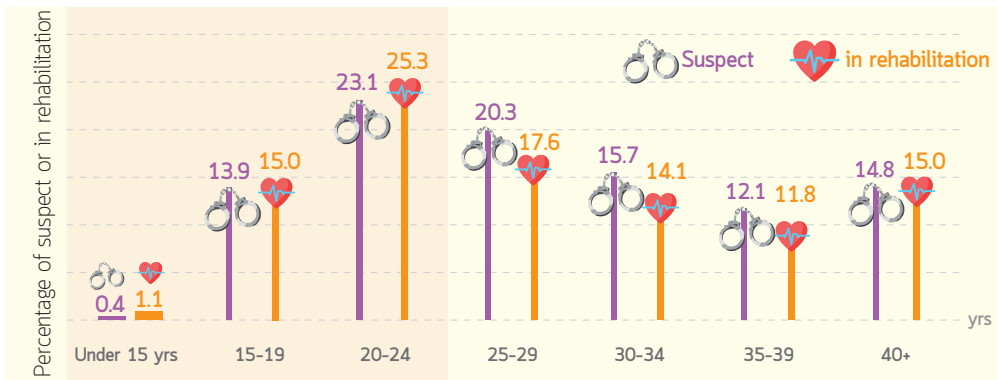
Number of cases of incarceration/detention of adolescents and youth under age 18 years by crime



Source : Report of the Number of Criminal Cases of Children and Youth Aged under 18 in 2010-2019, Department of Juvenile Observation and Protection

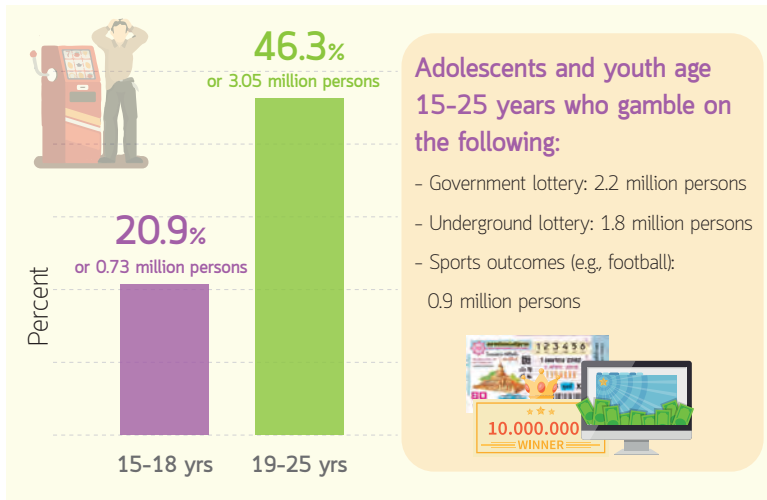
Source : Report of the Number of Criminal Cases of Children and Youth Aged under 18 in 2019, Department of Juvenile Observation and Protection

Cases of drug-related offenses and persons in drug rehabilitation by age, 2018



Source : Report of Prevention and Response to Narcotics for Fiscal Year 2018, Office of the Narcotics Control Board

Estimates of adolescents and youth gambling



Source : Compiled from the Report on the Situation of Gambling in Thai Society, 2019, of the Center for Gambling Studies

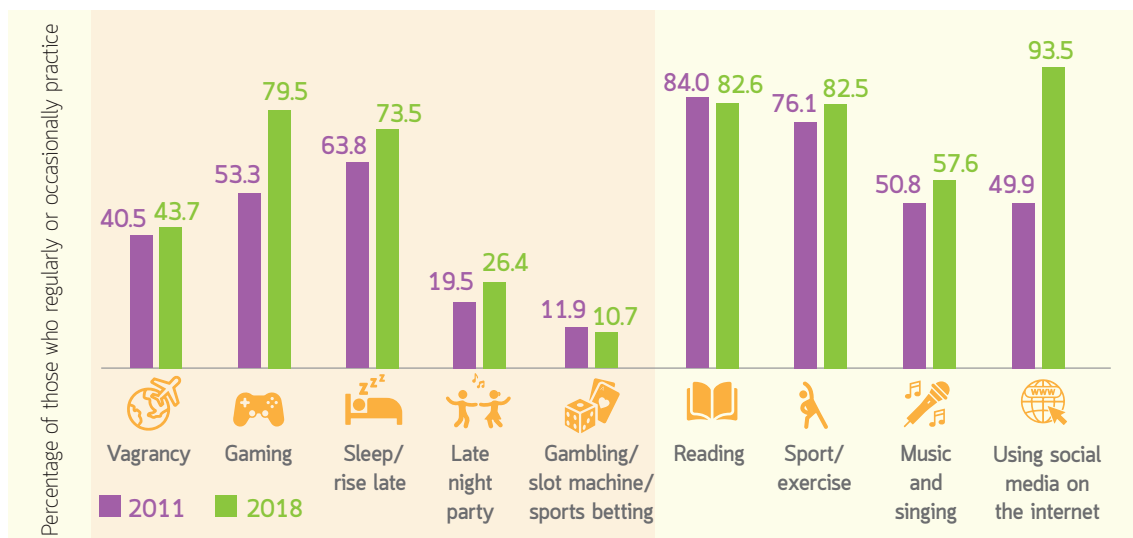
Other social behavior problems of adolescents and youth found in the 2018 survey include vagrancy, computer/online game addiction, being late to bed and late to rise, and spending late nights out partying. Plus, these conditions have been worsening over time. At the same time, more constructive recreational activities (sports, music) slightly increased during the same period. However, the one behavior that increased for all groups of youth was online communication, especially through social media platforms and applications (e.g., Twitter, LINE, and Facebook). Between 2011 and 2018, the proportion of youth using these communication portals nearly doubled from 49.9% to 93.5%, thus becoming a nearly universal behavior of Thai adolescents.

Rowdiness and gambling are other problem behaviors which might be increasingly prevalent among youth and a threat to a healthy society. Part of this dysfunctional behavior can be attributed to child-rearing practices and the changing role of the family in Thailand. However, bullying and gambling are being abetted by online forums. Based on a 2019 survey by the Center for Gambling Studies, it is estimated that four million Thais age 15-24 gambled. The top three forms of adolescents and youth gambling include the government lottery, the underground lottery, and sports outcomes betting.

A study of parents of 117 children undergoing psychiatric treatment by Chulalongkorn Hospital found that rowdy behavior was **associated with excessive use of the internet, inconsistent parenting between leniency and harsh discipline, and marital dissolution or living apart of the child's parents.** (Source: Wannawisa Naksuk, et al, 2019)



Social behaviors of adolescents and youth age 13-24 years



Source : Survey on Conditions of Society, Culture and Mental Health, 2011 and 2018, National Statistical Office

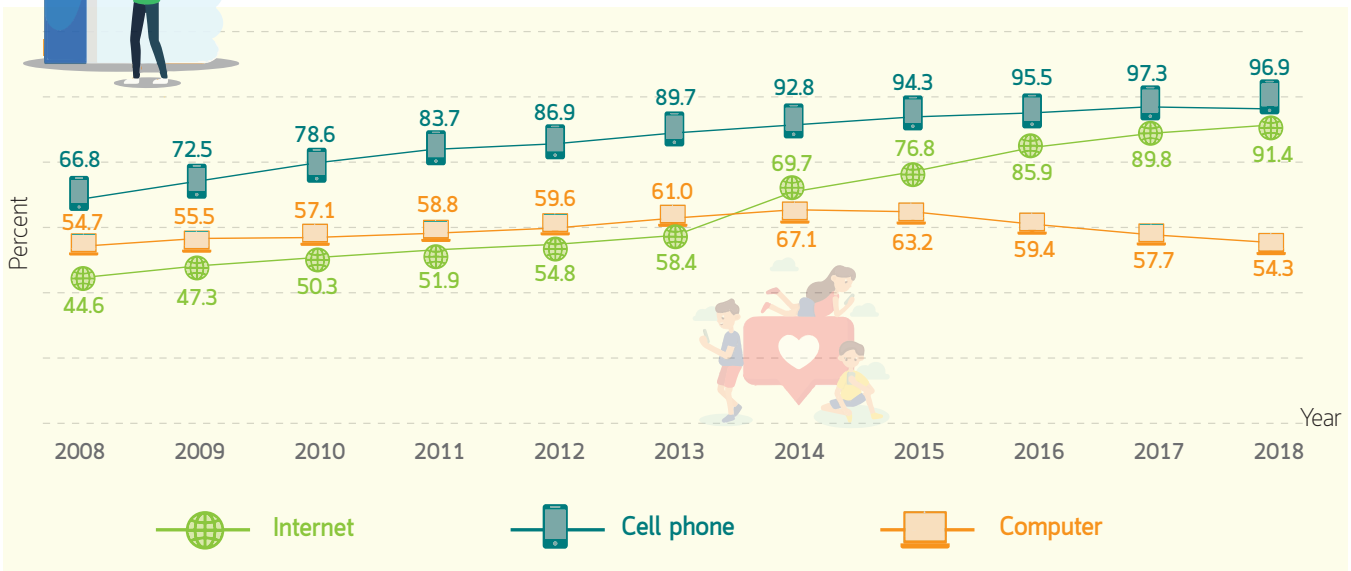
9 On-line Social Media

Internet usage is over 90% for Thai adolescents and youth today. Most of them use the internet to communicate via social media platforms.

“The internet is nearly universal in Thailand, and can be accessed anywhere, any time by a range of electronic devices. For adolescents and youth, the most common device is the smart phone. Possession of a smart phone is becoming a necessity for Thai adolescents and youth. Thus, it is important for them to know how to skillfully navigate the internet and be aware of the pros and cons of social media.”



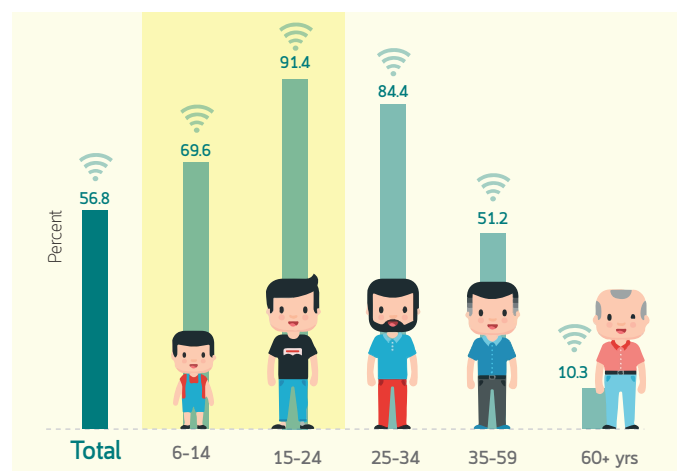
Proportion of adolescents and youth age 15-24 years who use the internet, cell phone, and computers



Source : The 2018 Household Survey on the Use of Information And Communication Technology , 2008-2018, National Statistical Office

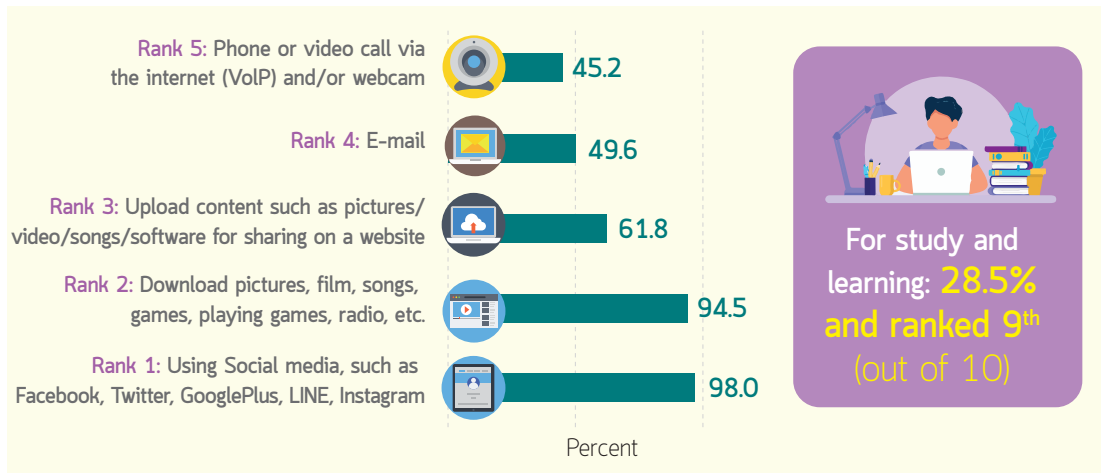
At present, 96.9% of Thai adolescents and youth own or have access to a smart phone. Between 2008 and 2018, internet use among these age groups more than doubled from under 45% to 91.4%. This level of internet use was larger than for any other age group of the population. Furthermore, the number one use of the internet for Thai adolescents and youth is to communicate or follow others on social media. The 2nd and 3rd most common uses of the internet are for entertainment, i.e., downloading and uploading, music, photos, video, etc. Use of the internet for education or research ranked 9th among adolescents and youth users.

Use of the internet by age group, 2018 (%)



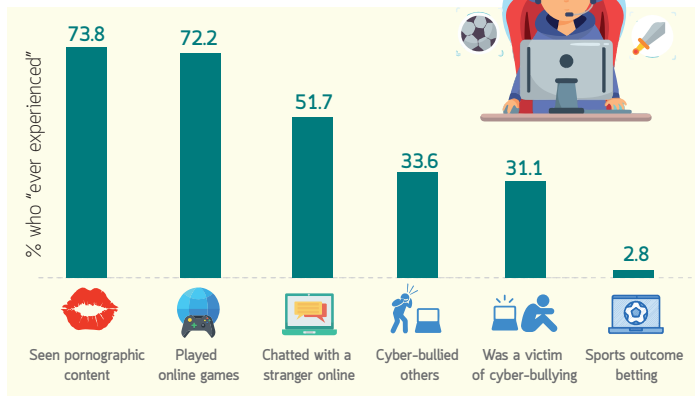
Source : The 2018 Household Survey on the Use of Information And Communication, 2018, National Statistical Office

Top 5 reasons for using the internet of adolescents and youth age 15-24 years, 2018



Source : The 2018 Household Survey on the Use of Information And Communication, 2018, National Statistical Office

Potential for risk on the internet among adolescents and youth users



Remarks : % "ever" engaging in an activity or having an experience, based on response to the survey of 15,318 students in primary and secondary school, 2019
 Source : Survey of the Situation of Children on Online Danger in 2019, Child Online Protection Action Thailand (COPAT)

While the increased use of the internet is increasing exposure for Thai adolescents and youth to the world and societies around them, there are also hazards of unsupervised online activity. Because access to the internet is so widespread, it is impossible for parents and other adults to know what sites adolescents and youth are browsing. Thus, it is imperative that today's adolescents and youth learn how to use the internet and social media for constructive purposes, and know how to avoid the risks.

The 2019 Survey of the Situation of Children on Online Danger found that nearly three in four school-age youth (primary and secondary school) had seen pornographic content through photos, video, or online games. One in three had experience with online bullying, either as the victim or perpetrator.

E-sport is one of the examples of controversy about impacts of internet use and online social media on the well-being of adolescents and youth. On one hand, it is viewed negatively as a cause of online game addiction among adolescents and youth. On the other hand, it can be a platform for sports skill development or even job opportunity in the future that the skillful players can earn income from. These depend on how adolescents and youth would aware about the pros and con of online social media.

Knowledge and attitude toward "e-sports" among Thai children and youth



Remarks : Results from a survey of 15,318 students in primary and secondary school, 2019
 Source : Survey of the Situation of Children on Online Danger in 2019, Child Online Protection Action Thailand (COPAT)

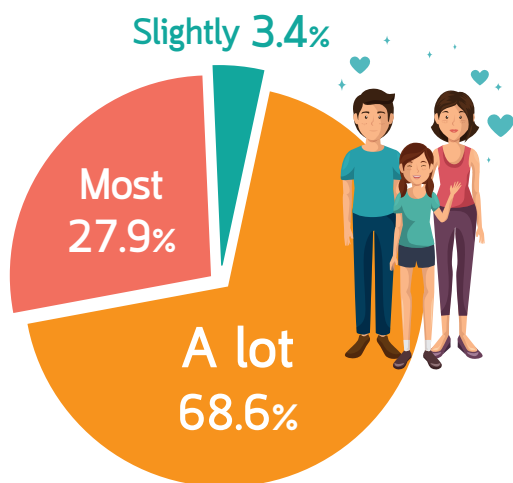
10 The Family, and Adolescents and Youth

Only one in two Thai adolescents and youth regularly engage in group activities with other members of their household, and less than one in three regularly joined other members of the family in sharing advice, discussing or deciding on important issues of the household.

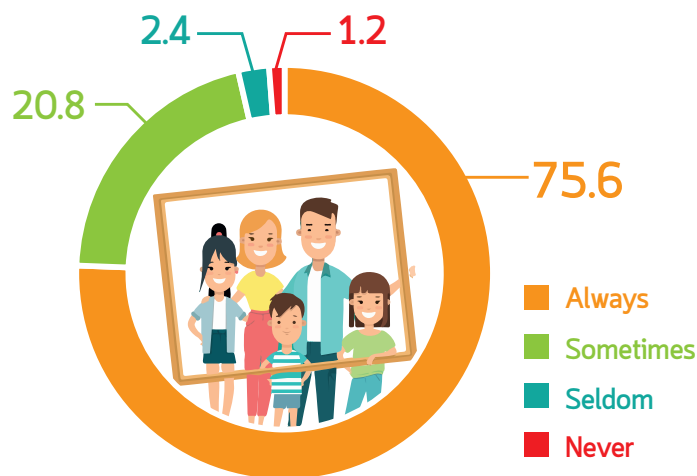
“The family is the institution that is closest to the lives of adolescents. Thus, whether the family members have good relationships with one another, understand each other’s roles and responsibilities, and are self-reliant are important determinants in how well the family provides ‘social immunity’ for its adolescent and youth members.”

The family is clearly very important to Thai adolescents and youth, as nearly all feel that their family is a source of security and safety. Only a small minority of them do not feel safe when with their family. In addition, three out of four adolescents and youth felt happy and warm when with their immediate family.

Proportion of adolescents and youth age 15-24 years who feel safe when with their family



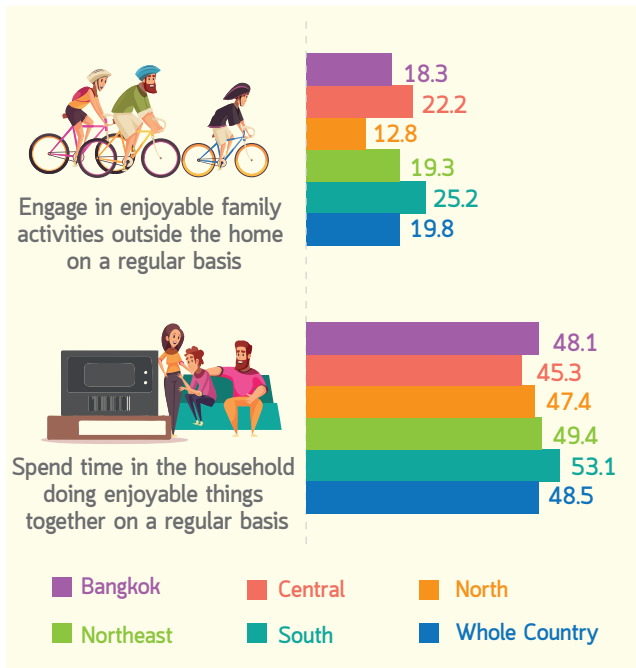
Feel warmth when with their family (%)



Source : Survey on Conditions of Society, Culture and Mental Health, 2018, National Statistical Office

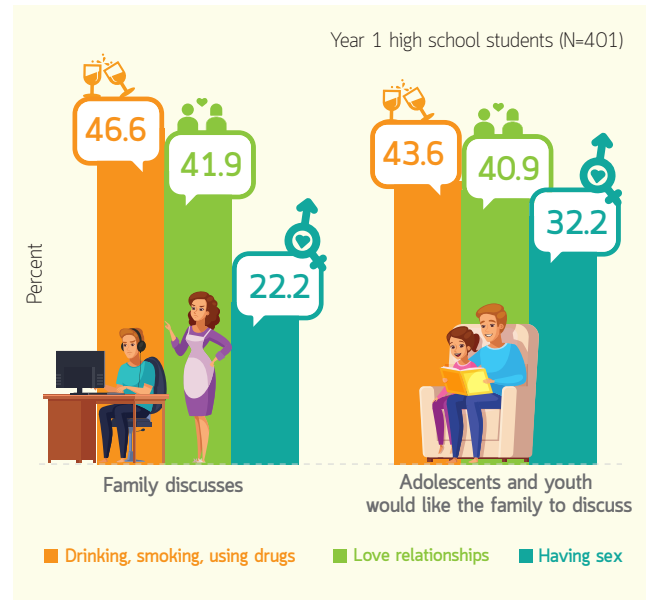
However, only one-half said they regularly engaged in group activities with family members. Furthermore, only one in three said they regularly joined other members of the family in sharing advice, discussing or deciding on important issues of the household. Those dynamic encounters are at the heart of the relationship between the family and its adolescent and youth members. If Thai families can improve relationships in the household, talk constructively with each other, and encourage every member to participate in discussions and decision-making, then they are laying the foundation for a happy family. Most importantly, that kind of happy family should go a long way to prevent their younger members from engaging in risk behavior.

Percentage of adolescents and youth who regularly engaging in enjoyable family activities



Source : Survey on Conditions of Society, Culture and Mental Health, 2018, National Statistical Office

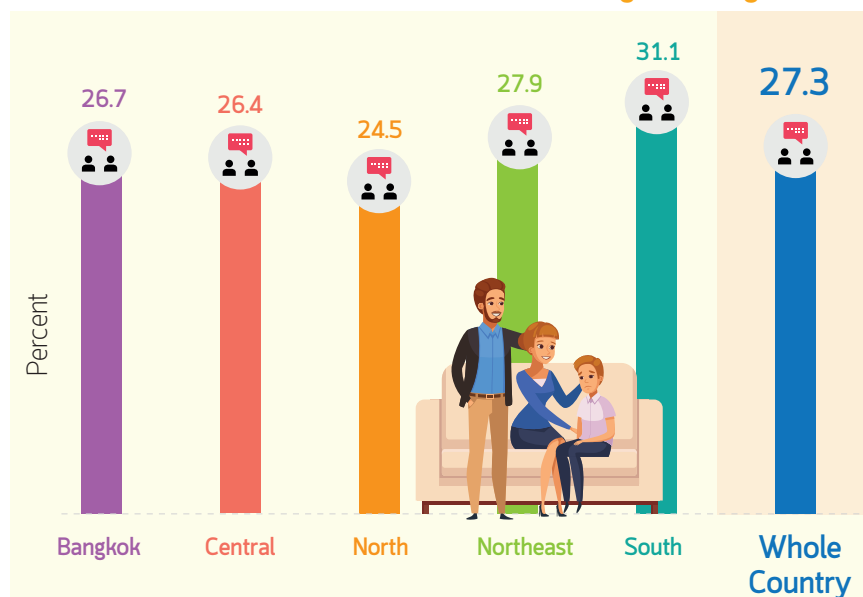
Important issues that adolescents and youth should discuss with the family:



Remarks : *Sampled from students in Saraburi, Lamphun, Satun, and Ubon Ratchatani Provinces
 Source : Creating Warm Hearted Family in the Phase Transition among Youth in Vulnerable Family Using Thai Family Matters (TFM) and Family Innovative Tools, 2019, Institute for Population and Social Research, Mahidol University

One unfortunate side effect of the internet and social media is that it is reducing conversation and problem-sharing among family members, especially the younger generation. Thus, the family may be weakening in its ability to protect younger members from harm by trouble-shooting problems early and nipping them in the bud. These health threats which adolescents and youth face have been discussed above and include drinking alcohol, smoking, or even unsafe sex. Today's parents may be forgetting that adolescents and youth actually want adults to discuss their problems with them, because it is a sign of mutual love and caring.

Percentage of adolescents and youth who consult with family members and share in rational household decision-making, on a regular basis



Source : Survey on Conditions of Society, Culture and Mental Health, 2018, National Statistical Office

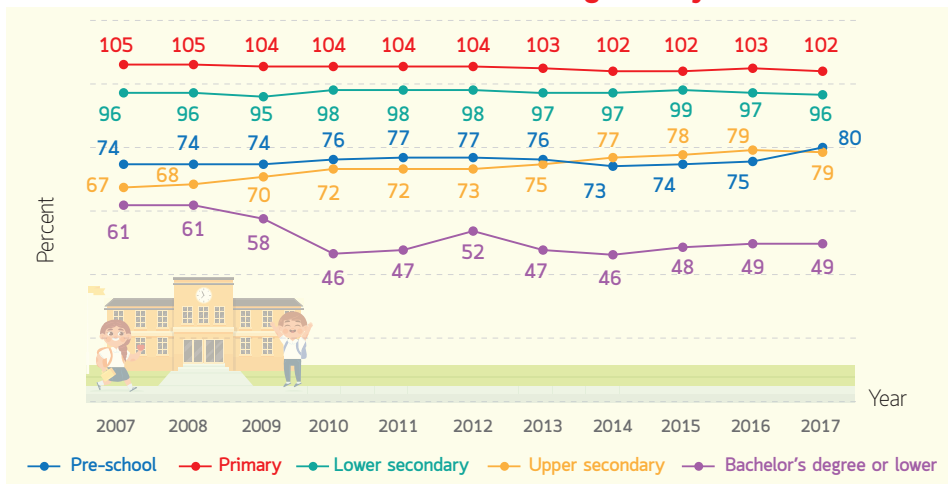
When analyzing family dynamics on a regional basis, adolescents and youth in the southern region have the highest prevalence of regularly joining other members of the family in sharing advice, discussing or deciding on important issues of the household. It would be important to understand the factors which make families in the southern region more inclusive for adolescents and youth than in other regions. The lessons learned could help in designing a model for improved family dynamics throughout the country.

11 Education and Employment

One in eight Thai adolescents and youth are categorized as NEET: Not in Education, Employment or Training.

“The number of Thais who continue on to college after high school is still relatively low. It is still a challenge for Thailand to raise education to a uniform standard, and reduce inequality in educational opportunity at all levels.”

Thai school enrollment rate (% gross) by level

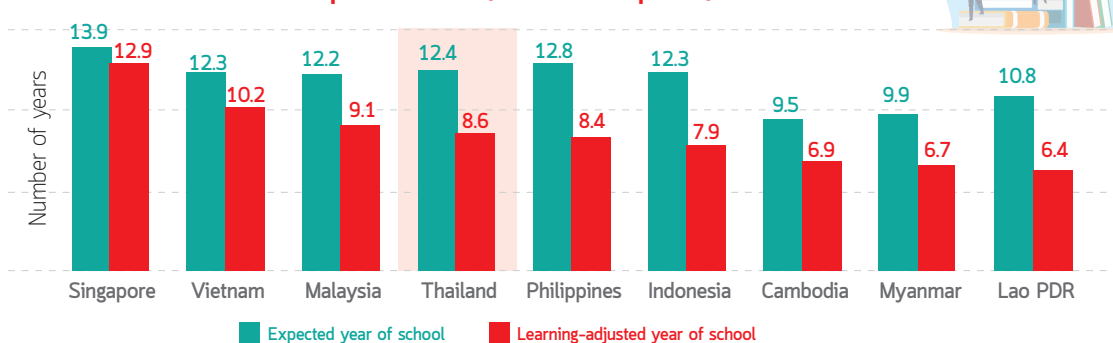


At present, it can be said that all Thai children have access to compulsory education (i.e., nine years: six primary school and three lower secondary school years). However only three in four complete upper secondary school, and only one in two make it to college and university.

Remarks : The calculation of the gross enrollment rate, i.e., enrolled students as a proportion of the school-age population by level of education. Thus, for some grades, it is possible to have rates of more than 100 percent.

Source : Social and Quality of Life Database System comes from the Office of the National Economic and Social Development Council, and is based on educational statistics from the Office of the Permanent Secretary of the Ministry of Education, and information from the Bureau of Registration Administration, Department of Local Administration

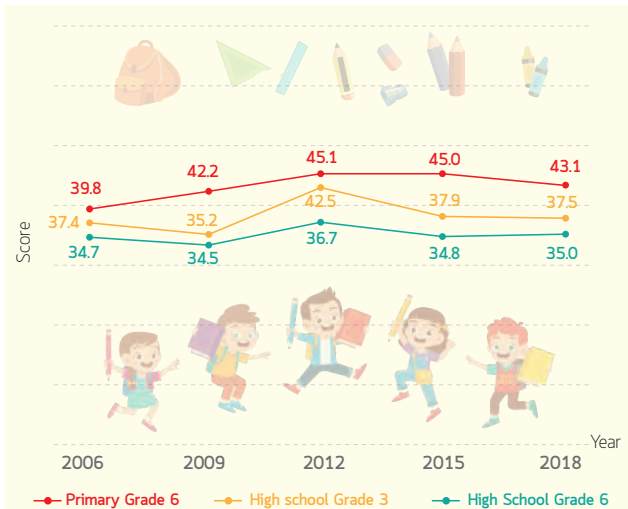
Human Capital Index (education pillar)



Source : Human Capital Index on schooling in ASEAN in 2018, World Bank

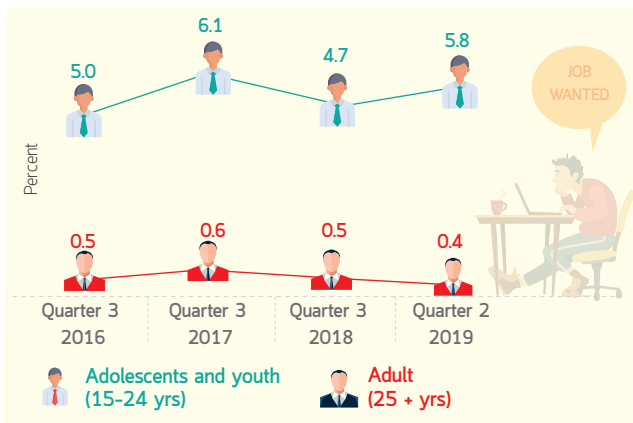
In 2018, the World Bank issued a report which included the Human Capital Index, which is a measure of the expected completed years of formal school. Thailand scored 12.4 years for that indicator. However, if adjusting those years for the estimated quality of education received, then the Thai value declines to only 8.6 years. When compared with other ASEAN country members for that indicator, Thailand ranks below Singapore, Vietnam, and Malaysia. This index points to the need for Thailand to urgently upgrade the formal education system to keep pace with other countries in the region. In addition, the mean scores from the national standardized O-Net exam for primary and secondary school students is still unacceptably low.

Average O-Net scores for students in primary grade 6 and high school grades 3 and 6



Source : Social and Quality of Life Database System, Office of the National Economic and Social Development Council

Rate of unemployment



Remarks: The unemployment rate for each age group is calculated as follows:

$$\frac{\text{Number unemployed in the age group} \times 100}{\text{Labor force in the age group}}$$

Source : Compiled from the Labor Force Survey of the Population, 2017-2019 (Quarter 3), National Statistical Office

These inequalities and underperformance in parts of the Thai formal education system are a major problem that needs to be addressed. Unless there is significant reform of the system, then Thailand is at risk of falling behind other countries and suffering worsening disparities in society at-large. Unemployment of Thais age 15-24 is about 4 to 6%, which is much higher than the rate for Thais age 25 years or older (lower than 1%). However, if considering the proportion of youth in the NEET category, then the percent doubles to 12.8% (who are not in school, not gainfully employed and not in occupational training). This group needs special attention since they are at risk of losing opportunity to lead productive lives and contribute to the development of society in the years ahead.



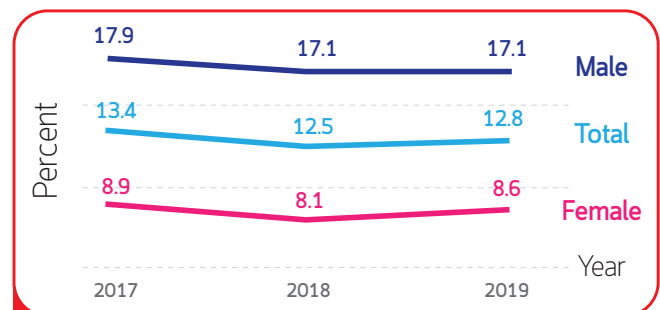
Furthermore, there is unequal access to quality education across localities and groups of academic institutions, and those disparities need to be addressed. The results of the standardized exam called PISA (Programme for International Student Assessment) found significant discrepancies for mean scores by types of schools. For example, while the overall mean PISA score for Thai students is rather low, the average scores for students in schools which emphasize science and demonstration schools had respectably high PISA scores that were even higher than students in OECD country schools.

Average PISA scores in 2015 for Thai students compared to OECD students by type of school and field

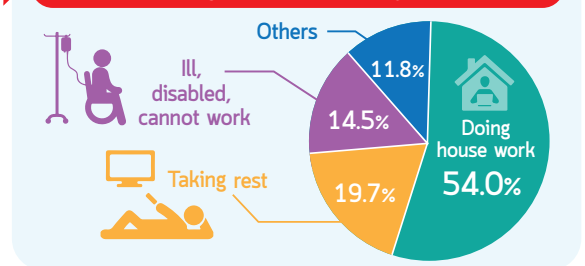
	Science	Reading	Mathematics
Thai average score	421	409	415
Science-emphasis school	567	537	556
Demonstration school	510	494	503
Other schools	374-438	369-426	372-431
Average score for students in OECD countries	493	493	490

Source : Results of the PISA 2015 exam in science, reading and mathematics: Excellence and equality in education, by the Institute for the Promotion of Teaching Science and Technology, Ministry of Education, in collaboration with the Organization for Economic Co-operation and Development (OECD)

Youth age 15-24 years in the NEET category



Reason for being in NEET (15-24 years) in 2019



Source : Compiled from the Labor Force Survey of the Population, 2017-19 (Quarter 3), National Statistical Office

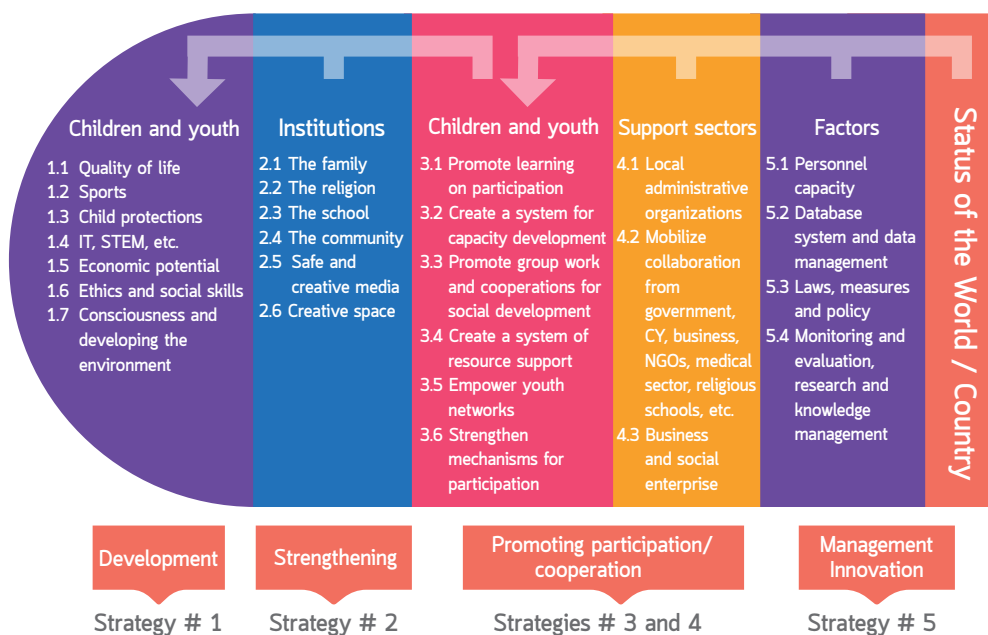
In 2019, Thailand’s Global Competitiveness Index (GCI) ranked 40th among 141 countries around the world. However, the country ranked only 73rd among countries for its score of the human capital’s skill competitiveness.

“Building the quality of life and capacity of Thai adolescents and youth so that they have the requisite knowledge and skills to thrive in the 21st Century in good health, with morals, social consciousness, economic potential, social and environmental skills, is a pre-condition for national development as well.”

The policy framework which defines the direction of development of the current generation of Thai adolescents and youth is articulated in 2nd National Plan for Children and Youth Development for the period of 2017-2021. The plan has five main strategies to achieve the vision: “Thai children and youth enjoy quality of life, have age-appropriate development, are creative citizens, and are fully engaged as partners in national development.” However, in the context of the present time, there are many challenges to achieving such a lofty vision. The ASEAN Youth Development Index for 2017 shows that Thailand ranked 8th among the ten member countries. The two areas that need special attention for Thai youth are “health and well-being”, and “participation and engagement.”

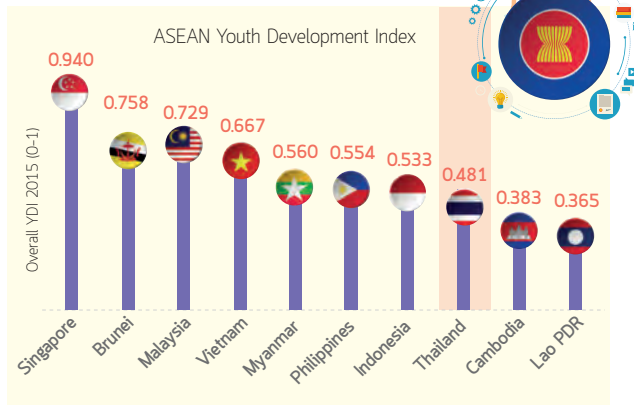
Vision, Conceptual Framework, and Strategies of 2nd National Plan for Children and Youth Development, 2017-2021

Vision : Thai children and youth enjoy quality of life, have age-appropriate development, are creative citizens, and are fully engaged as partners in national development.



Remarks : “Child” means a person under 18 years, while “youth” means a person age 18 to 25 years
 Source : 2nd National Plan for Children and Youth Development, 2017-2021 (Including the 2nd National Action Plan for Child and Youth Development, 2017-2021)
 National Commission for Promotion of the Development of Children and Youth (2018)

ASEAN Youth Development Index (age 15-35)



Remark : ASEAN Youth Development Index calculated on relevant four indicators, namely education, health and well-being, participation and employment and socio-economic opportunity

Source : First ASEAN Youth Development Index 2017, Association of Southeast Asian Nations (ASEAN)



Global Competitiveness Index (GCI) of Thailand

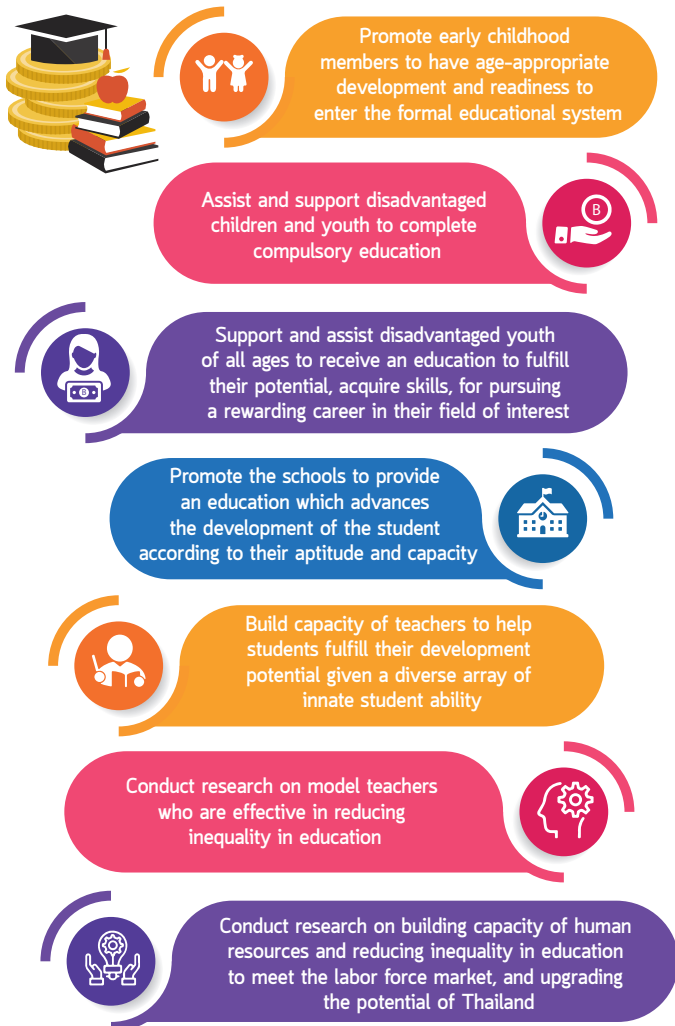
Year	Overall Global Competitiveness Index (GCI)		Human Capital: **Skills development	
	Score (0-100)	Rank*	Score (0-100)	Rank*
2017	66.3	40	62.8	66
2018	67.5	38	63.0	66
2019	68.1	40	62.3	73

Remarks : *The ranking is for 135 countries in 2017, 140 countries in 2018, and 141 countries in 2019

**The score of the GCI is a composite of the scores in four areas: Enabling environment, human capital, markets, innovation ecosystem. Skills development is one sub-component of the human capital dimension

Source : The Global Competitiveness Report 2019, World Bank

Objectives of establishing the Equitable Education Fund (EEF)



Source : Summarised from the Equitable Education Act (B.E. 2561), Equitable Education Fund

The Master Plan for Life-long Capacity Development of the 20-year National Strategy (2018-2037) has a sub-plan directed at the development of school-age adolescents and youth. One of the indicators for tracking progress of Plan achievement is the Skills Competiveness Score, which is part of the Global Competiveness Index (GCI) of the World Economic Forum. In any event, the 2019 report on country scores, shows that Thailand is actually declining relative to other countries (from a rank of 66th in 2018 to 73rd one year later, among 141 countries). This shows how important it is for Thailand to focus on building capacity of its adolescents and youth, most of whom are school age. There must be universal access to quality education and equality in education for all segments of Thai society.

The Equitable Education Fund Act (B.E. 2561) included the creation of a fund to reduce inequality of educational opportunity. The vision is that all school-age Thai children and youth have access to quality education on an equal basis, as that is a key ingredient of human capacity development and achieving a quality population for the long-term.

"Equitable Education"

means all the people are equally entitled to receive and access education and development; assistance is given to financially deprived persons to alleviate educational inequality and enhance the quality and efficiency of teachers.



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Nakhon Pathom: Institute for Population and Social Research Mahidol University

10

Outstanding Situations

PM 2.5: A Massive Threat to the Health of Thai Population

<https://www.thairath.co.th>
<https://www.posttoday.com>

In the past, the blanket of fog that greeted the morning in cooler parts of Thailand may have suggested a good day to come. However, that quaint image is turning into a nightmare, given that the morning haze is actually a product of the PM 2.5 air pollution. This pollution occurs annually and has become a more important threat to the health of Thai population. Of most concern is that it is a problem that may become too large to overcome.

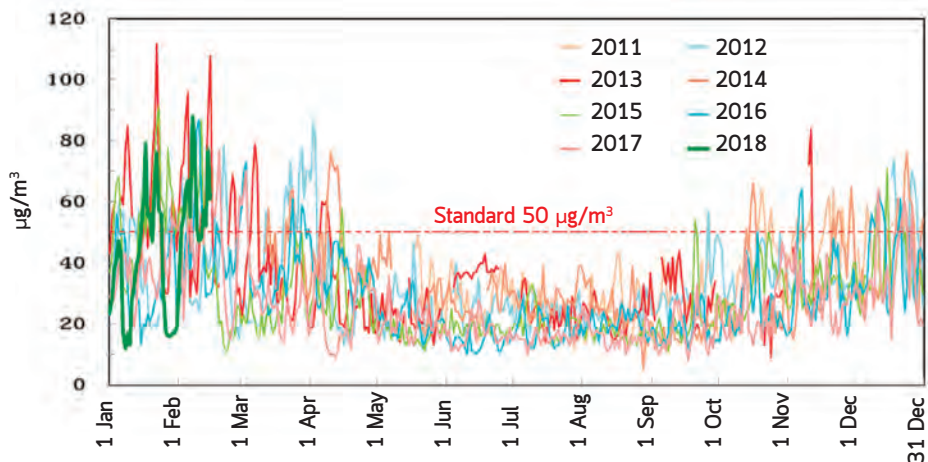
In the past, the blanket of fog that greeted the morning in cooler parts of Thailand may have suggested a good day to come. However, that quaint image is turning into a nightmare, given that the morning haze is actually a product of the PM 2.5 air pollution. This pollution occurs annually and has become a more important threat to the health of Thai population. Of most concern is that it is a problem that may become too large to overcome.

Air pollution, especially PM 2.5 is a problem that harms Thailand every year during the dry season, especially in the winter to early summer. In the past, the deterioration of environmental quality was most serious in northern Thailand. However, nowadays, air pollution is a serious problem for the whole country, including Bangkok and its vicinity, as well as many other provinces. Much of this pollution comes from human activities. Even in the southern region which does not have slash-and-burn agriculture,

they experience smog from neighboring countries. During some seasons, the PM 2.5 dust affects health of humans and domesticated animals. This pollution also has adverse consequences for the economy and society at-large. Collaboration among all the relevant sectors is needed to address both short- and long-term measures to combat this problem. This chapter focuses on PM 2.5 pollution, the scale of the problem, its impact on health, and guidelines for a response.

PM 2.5 pollution: Scope of the problem

The degradation of the environment and the worsening air pollution is a matter of increasing concern in Thai society. This is a problem that has the potential to affect everyone in the country. Most of the root causes of the air pollution are from man-made activities, such as motor vehicle transport, industry, and agricultural practices.



Picture 1 : Daily PM 2.5 dust concentrations in Bangkok and vicinity: 2011-2018

Source : Supat Wangwongwattana (2018)

In addition, the geography and topography of some parts of the country mean that air pollution can linger longer than in other localities and, thus, causes more damages.

Regarding the air pollution in Thailand's northern region, Asst. Prof. Dr. Somporn Chantara has observed that the cause of this is *man-controlled periodic burning of open areas of forest land, as well as cultivated areas*. Compounding the problem is the shape of the terrain in some provinces. For example, parts of Chiang Mai and Lamphun Provinces are like a bowl that can trap the pollution in lowlands, especially at the end of the winter season.¹ Another factor is that there is an abundance of corn crop cultivation in the north, and farmers burn off the stalks after harvesting. The area of land under cash crop cultivation in the northern region increased significantly between 2006 and 2015. That period was accompanied by a steady decline in forest cover. Problems of agricultural burning and deforestation have been known for many years. However, no solution is in sight.

In the beginning of 2020, the problem of forest fires and intentional burning of cropland in the northern region was worse than many previous years. The effects were particularly severe in Chiang Mai, Chiang Rai, and other provinces of the upper north. This had harmed the health of local people, and made some northern cities as some of the most-polluted cities in the world in terms of air pollution. Government agencies, the private sector and civic groups worked overtime to extinguish the forest fires. Sadly, many officers and volunteers lost their lives to the battle.²

The calls for the government to address this problem more comprehensively became louder and stronger.

In recent years, there has been more awareness about the level of PM 2.5 pollution in *Bangkok*. The case was particularly acute during January 4-11, 2020, when the mean level of PM 2.5 exceeded 180 µg/m³. The average level of PM 2.5 should not exceed 50 micrograms/meter³ for healthy living. This spike in air pollution sparked intense debate in Bangkok, fueled by social media. The increased awareness and condemnation put pressure on the government to act. In fact, the problem of PM 2.5 pollution in Bangkok is nothing new. The data in Figure 1 show that the level of measurable air pollution has been increasing annually.⁴ However, the causes of this phenomenon are multiple, including the following: *Emissions from vehicles with internal combustion engines, especially those which use diesel fuel; the burning of cropland such as sugar cane and corn in central provinces surrounding Bangkok and its vicinity; seasonal weather when there is less natural air circulation and wind speeds are low*. These causes are multiplied by daily activities in the urban area which create a vast smog blanket over Bangkok and its vicinity clearly seen from the high altitude.⁵

While the air pollution in the north, Bangkok and central provinces can be attributed to activities within Thailand and also across the border, *the air pollution in the southern region of Thailand comes directly from neighboring countries*.⁶ *The air pollution comes mostly from Indonesia where there is excessive burning of*

cropland and forests to clear land for palm oil plantation.⁷ The trade winds carry peat smoke from east to west, hitting other countries along the way, e.g., Singapore, Malaysia, and southern Thailand. This is recognized as a regional health issue and is being addressed in the context of ASEAN. In response to the air pollution in Thailand, the Thai authorities have enacted laws⁸ such as the Public Health Act, B.E.2535, Article 5 Sources of Nuisance, to help address the problem.

Adverse health impacts of PM 2.5

High concentrations of PM 2.5 in the atmosphere are a threat to the respiratory systems of humans and animals alike.⁹ WHO has asserted that PM 2.5 and PM 10 pollution can directly affect morbidity and mortality of vulnerable persons. Indirect evidence of this relationship shows that the number of cases of respiratory illness/distress declines when the air pollution declines. Accordingly, WHO has set a standard for the 24-hour average level of PM 2.5 to be no more than 25 $\mu\text{g}/\text{m}^3$, or not more than 10 $\mu\text{g}/\text{m}^3$ per year on average.¹⁰ That target level is considerably more ambitious than the current Thai standard of 50 $\mu\text{g}/\text{m}^3$.

The PM 2.5 pollution also affects other vital systems of the body, not just the respiratory track. The smallest particles can penetrate the circulatory system and infect organs of the body. The pollution can even contribute to maladies of the brain, such as Parkinson's disease.¹¹ The PM 2.5 particles can also act as a 'vector' for other harmful pollutants such as heavy metals, and polycyclic aromatic hydrocarbons (PAHs) from vehicle emissions or other sources. The accumulation of these pollutants in the body can even lead to long-term health problems such as cancer.

Solving this problem from the root cause is difficult, and not much progress has been made in that regard. Short-term prevention includes limiting physical contact with the particles in the air by wearing a sanitary mask, installing air filter systems at home, etc. However, those that are not aware of the danger, or do not have the



means to protect themselves, or are aware but do not care about prevention are vulnerable to adverse health impacts in the future.

Recent reports are documenting *the ill-effects of PM 2.5 on mental health*. One report analyzed the association between types of air pollution and psychological condition in adults and children.¹² One explanation of a positive correlation is that people who know the dangers of air pollution yet cannot prevent the exposure when they go outside for school or work will experience stress in the face of an invisible threat. This stress may lead to

behavioral adaptations which worsen the person's health. For example, India regularly records some of the highest PM 2.5 levels in the world. Now some vendors sell fresh air in a can, even though doctors warn that this has no preventive effect and can even cause harm. Nevertheless, people who are exposed to the pollution ignore the warnings.¹³ In Thailand, some groups demand that fresh air is a basic right. The protesters include students,¹⁴ members of the general public, and civic organizations. They join forces in the hope of actually spurring effective action.¹⁵

The problem of PM 2.5 is also affecting many other countries in Asia, such as South Korea, India, Vietnam, and China. China estimated that one million persons died from the air pollution, with the economic loss of 267 trillion yuan in 2018.¹⁶ In November 2019, India declared a state of emergency as the level of PM 2.5 pollution in the capital city of New Delhi reached dangerous levels.¹⁷ At the end of 2019 Australia became a victim of air pollution, but this time due to massive bush fires which caused the government to declare a state of emergency and order the evacuation of many communities. Air pollution from bush fires had spread to New Zealand, and had stained the mountainous areas called the Southern Alps.¹⁸ The pollution was trapped in the snow and might cause further problems when the ice melts. NASA had even reported that the smoke from the Australian brush fires reached stratosphere and, thus, threatened to spread throughout the globe.¹⁹

Solving the problem of air pollution and PM 2.5

Many countries are trying to address the problem of air pollution, and they are using both active and passive measures. Some are inventing new technologies, such as the air purifier towers in China, or devising measures to discourage the use of motor vehicles in France and Spain. Incentives to use public mass transit are promoted in the Netherlands and Finland, whereas the use of bicycle instead of motor vehicles is campaigned in Denmark.²⁰ The UK and France have even set deadline when internal combustion engines can be used in certain locations.

Thailand has issued its own sets of measures to combat air pollution. For example, these include restrictions on grilling activity, spraying water vapor to clean the air, and campaigns to use sanitary masks to protect

against PM 2.5. While these efforts may be reassuring to the population, actions such as spraying water vapor will have no effect in cleaning the air of the smallest pollution particles. Also, activities like spraying water vapor could actually do more harm than good by contaminating rain water with larger pollutant particles. Furthermore, if the source of the water to be sprayed in the air is not clean, that practice could actually spread bacterial diseases to passers-by. Longer-term measures include the banning of the use of polluting vehicles on the road, and conducting spot-checks of vehicle emissions to detect defective exhaust systems. However, the success of those measures depends on the level of enforcement, which is inconsistent.²¹

Thus, Thailand and other countries are using passive measure to combat air pollution; i.e., they are addressing the problem on the surface, as opposed to the root causes. As noted, most of the pollution problem is due to human activity. Merely appealing to the public or forging agreements among countries will do little to address the root causes. In addition, laws and legal measures are only as good as their enforcement.²² In order to successfully combat PM 2.5, all related sectors need to focus on the individual human activity that is causing the pollution in the first place.²³ In the past, government agencies have lacked efficiency and effectiveness in the pollution-control measures. In other cases, agencies lack the equipment and technology to measure pollution levels. Also, in this digital era, the communication needs to be fast enough to attract public attention.²⁴ The concept of fresh air as a basic right may be the key to mobilizing the public and government to act. In the meantime, many citizens are taking measures to protect themselves.²⁵

The Thai government has now introduced the following 12 short- and long-term measures to address the air pollution problem:²⁶

1. Expand the area which restricts large trucks in Bangkok;
2. Prohibit large trucks from entering inner Bangkok on odd days during January and February;
3. Inspect every passenger vehicle with black exhaust (excluding city buses);
4. Inspect and prevent any polluting vehicle from using the roads;

5. Inspect factories for air pollution emissions;
6. Control construction activities of mass rail transit lines and other construction sites so that they do not pollute the air or cause traffic jams;
7. Prohibit burning in open areas in Bangkok and its vicinity;
8. Give provincial and local administrative organizations the authority to control burning in open spaces, and control motor vehicles, industrial factories, and construction sites to prevent pollution;
9. Reduce the price of fuel which has less than 10 ppm sulfur emissions since that level minimizes air pollution;
10. Encourage the public to refrain from using a private motor vehicle to commute, and ensure that all government vehicles are inspected to ensure that they are non-polluting;
11. Promote regular oil changes for diesel-burning vehicles older than 5 years;
12. Promote awareness and understanding about air pollution.



and the number of people who are truly interested in reducing air pollution is low. Nevertheless, public information campaigns must continue to ensure that all persons of all ages are aware of the problem and share responsibility for the solution.

Summary

The problem of PM 2.5 is part of the larger threat of air pollution in Thailand today, which has shown worsening trends. The sources of the pollution are both domestic and regional, and these are being exacerbated by global climate change, urbanization, and the expansion of economic activities. In Thailand, the problem resumes every year toward the end of the calendar year and at the beginning of the New Year, since that is a period of low atmospheric circulation. Thus far, the Thai response has been superficial and passive, and focused on the immediate effects of air pollution, e.g., wearing a sanitary mask, or installing air filters at home. However, the problem of PM 2.5 pollution needs to be addressed from the top of the government down to the individual level. All sectors need to be involved: the public and private sectors and the citizenry at-large. Unless Thailand tackles this problem seriously, in each agency and population group, then this problem is likely to remain and fester, with lasting impacts on the health of the population and the national economy. One hopes that it will never come to the point where Thailand has large numbers of people dying each year due to the air pollution.



2

The Ban of 3 Toxic Pesticides: The Protracted Battle



<https://www.newtv.co.th>

In a historic event, the Thai government's National Hazardous Substances Committee has issued the resolution to ban three toxic substances: Glyphosate, Paraquat, and Chlorpyrifos, effective on December 1, 2019. Instead, that ban never came to pass, as the new Committee convened later and decided to delay the ban on the two pesticides (paraquat and chlorpyrifos) for six months; while glyphosate was downplayed from a ban to the restricted-use category. These flip-flops of policy reflect the ongoing battle of the forces promoting and opposing the ban, which has prolonged for many years. It appears that this confrontation is set to continue indefinitely into the future.

Introduction

On October 22, 2019, the National Hazardous Substances Committee resolved to ban three agricultural chemicals, including glyphosate, paraquat, and chlorpyrifos by discontinuing the sale and cancelling the use of said chemicals in Thailand, starting from December 1, 2019 onwards. However, on November 27, 2019, the Committee overturned the previous resolution, and postponed the ban on paraquat and chlorpyrifos for another six months, and changed glyphosate's category to restricted use. That meeting occurred after the Hazardous Substance Act (Version 4) 2019 became effective. A significant development was the change of the Committee structure whereby the

Minister of Industry was appointed as the Chairperson, and there was a reduction of the number of committee members from the Ministry of Public Health (MOPH) to only two persons.¹ The reverse of the resolution was protested by a group of experts and representatives from the MOPH that are on the Committee, and they were joined by many lawyers and civil society. This ruling was also contrary to the guidelines of the House of Representatives which passed a unanimous resolution to ban all three types of substances without delay. These policy shifts reflect the on-going struggle between the proponents and opponents to the use of these toxic agricultural chemicals, and for which there is no end in sight.

Use of pesticides in Thailand

Thailand has been using pesticides for a long time. Farmers have been encouraged to grow cash crops and monoculture crop in a large area as raw materials for many industries such as sugar-based products, animal feed, and biomass power plants. The expansion of cash-crop farming has created more dependence on chemical pesticide. The amount of imported pesticides during 2005-2017 increased from 75,473 tons to 197,758 tons, or more than 2.6 times in just 12 years.² This was done without having to expand the agricultural area. Fully 75% of the imports were herbicides. The problem of high-risk pesticide chemicals led to a ban in 2017 of some chemicals, which reduced the amount of imports. In 2017, it was found that the imports of these toxic chemicals included 44,501 tons of paraquat, 59,872 tons of glyphosate, and 3,325 tons of chlorpyrifos. These three chemicals accounted for 54.5% of the total amount of import of 267 pesticides in that year.

Although the amount of pesticide use more than doubled, the average yield per rai of cash crops did not improve. Comparing the yield per rai of cash crops in 2008 and 2016, data from the Office of Agricultural Economics and the National Statistical Office show that most of the production per rai decreased. For example, rubber production declined from 241 to 224 kilograms per rai, while sugarcane declined from 11,157 to 9,152 kilograms per rai, and oil palm from 3,214 to 2,409 kilograms per rai. Only maize experienced an increase in crop yield, from 652 to 654 kilograms per rai during that period.



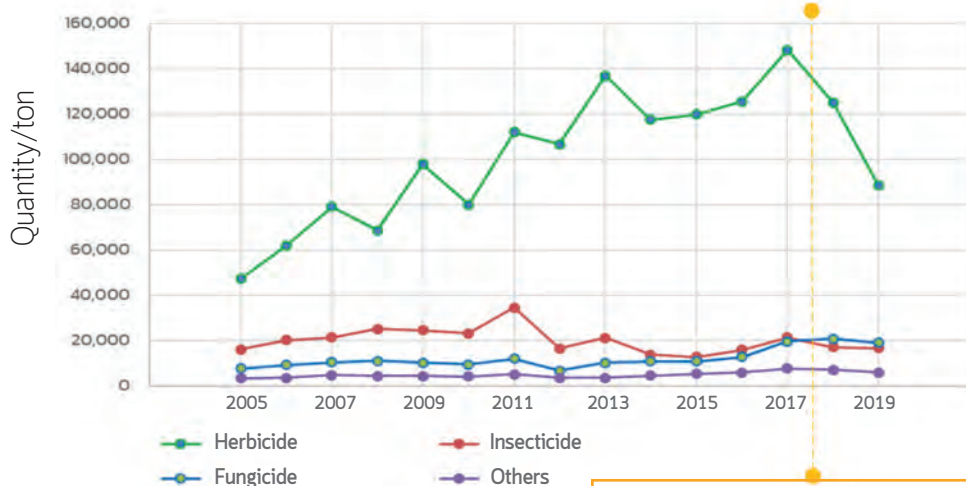
<https://market-comms.co.th>

On the other hand, the inappropriate use of chemicals to eliminate pests has caused problems of pest outbreaks among plants, such as the outbreak of brown plant-hopper (BPH)³ which destroyed millions of rice plantations. When more chemicals are used to eliminate insects, aphids will evolve with increased resistance. Currently, Thailand has found at least nine species of BPH that are resistant to chemicals used to eliminate insects in rice fields and weeds.⁴ A report by the project on International Survey of Herbicide-Resistant Weeds found species of weeds that are resistant to 259 herbicides including 167 pesticides (with 26 destructive types). This epidemic is documented among 93 types of plants in 70 countries. Fully 43 types have glyphosate resistance, and 31 have paraquat resistance, among others. It is noteworthy that there have evolved more than 100 types of weeds that resist two or more different groups of herbicides, and at least 20 species

are resistant to four groups. Therefore, the use of toxic herbicides has not been effective for long-term elimination of weeds and, what is more, their use is threatening the global food security situation.

A study of the Faculty of Economics of Kasetsart University has assessed the external effects on health and the environment of the use of pesticides by analysis using PEA (Pesticide Environmental Accounting).⁵ An analysis of pesticide imports in 2018 found

Quantity of imports of pesticides, 2005-2019



Resolution of the Advocacy Committee on High-Risk Pesticides

Source : The Office of Agricultural Regulation (2020)

that the capital cost to health and the environment amounted to over 21 billion baht. In addition, these chemicals are exempt from import tax and VAT, dating since 1992. That amounts to approximately 10 billion baht per year that the government loses in order to subsidize Thai farmers. But the policy is actually doing more harm than good, especially when considered against alternative methods of pest control, such as organic mowing and mulching. Thus, whether it was aware of it or not, past Thai government policy has promoted the use of toxic pesticides and herbicides which have cost the country dearly in terms of environmental and health damages.

Health impacts of the three toxic agricultural chemicals

In August 2019, a doctor in Tak Province posted a warning about a boy who died after being exposed to a leak in a tank containing paraquat.⁶ In December 2019, Prof. Dr. Theerawat Hemajutha published news of another young boy in Chachoengsao Province whose skin was damaged from the middle of his back to his hips from a similar accident.⁷ In addition to farmers, the group of people at next highest risk from these toxic chemicals is family members and members of the community where these pesticides are used in mass quantities. A Study of the College of Medicine and Public Health, Ubon Ratchathani University found that sugarcane farmers in the Northeast region were concerned about the toxicity of these substances. Fully 91% were afraid that their own children will stray into a pesticide spraying area, and 81% fear the neighbors will blame them if there is any contamination from their own spraying. The adverse health effects of paraquat, chlorpyrifos and glyphosate are summarized as follows:⁸

Paraquat, with trade name of “Gramoxone” (among others) is a herbicide used to eliminate combustible weeds, i.e., by destroying the part that is green. It has quick action and is widely used. However, paraquat also has serious risks to health, such as the following: (1) High toxicity for humans, and no antidote to accidental skin exposure. Even when diluted, paraquat is a deadly poison; (2) Paraquat has been associated with pathogenesis of Parkinson’s disease and other adverse effects on the nervous system; (3) It can affect the reproductive system, pregnancy, and the development of the embryo in the womb; (4) Residue of

paraquat has been found far from the cash-crop-cultivation land, i.e., in the non-agricultural environment, food plants, vegetables, fruits and animals that are bred for human consumption; (5) Residue of paraquat has been found in humans, and can be passed on from a mother to the fetus in the womb; and (6) Paraquat is a substance that is too toxic to be used safely, even when practicing prevention.

Glyphosate, also known as the trade name “Round Up”, is a herbicide which destroys plants at their roots. It is the most popular herbicide in Thailand. It is also used in countries that grow GMO-resistant glyphosate plants, and causes “super weeds” to evolve that are resistant to this chemical. Initially, it was thought that glyphosate was safe, as safe as table salt as was advertised by one brand. However, in 2015, the International Agency for Research on Cancer (IARC) under the WHO announced that glyphosate is a carcinogen in humans, and that declaration caused consumer agencies to be more alert and check food, processed products and meat for traces of the chemical. Since then, many research studies have documented the adverse effects of glyphosate, including the following: (1) Being carcinogenic in humans; (2) Causing an increased risk of developing Non-Hodgkin Lymphoma and invasive breast cancer; (3) Interfering with the function of the endocrine system; (4) Destroying microorganisms and, thus, causing drug resistance; (5) Combining with heavy metals in groundwater and, thus, causing chronic kidney disease; (6) Being transmitted from mother to the fetus and, thus, causing damage to the placental cells; and (7) Spreading residue in processed food and beverages.

Chlorpyrifos, common trade name: “Lorsban”, is a chemical that removes organophosphate insects, and is commonly used in the cultivation of vegetables and fruits.



There is a lot of research showing the adverse effects of exposure, for example: (1) Produces ill effects on the brain, cognitive function, IQ, muscle control, and ill effects on the fetus in the womb even if exposed to very low quantities; (2) Interferes with the endocrine system function, neuroendocrine, estrogenic and androgenic thyroid effects; (3) Stimulates the growth of intestinal cancer cells; (4) Produces residue that has been found in vegetables, fruits, breast milk and sera in the newborn's umbilical cord.

Ban of the three chemicals in other countries

The confirmed negative impact on health and safety of humans and wildlife has caused many countries around the world to ban or limit the use of all three types of agricultural chemicals as follows: Countries for which have banned **paraquat** (data as of December 30, 2019): 55 countries including the United Kingdom (Inventor) Switzerland (market owner), China (manufacturer and major exporter), Brazil (one of the countries that used it most in the world), Malaysia (used to prohibit, then allowed use only in oil palm, then banned again in March 2019). The rest, divided by continent, are as follows: **Europe:** Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovenia, Slovakia, Spain, Sweden, United Kingdom, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Austria, Croatia, Bulgaria, Switzerland, Russia; **Asia:** Chinese Taiwan, Republic of Korea, Sri Lanka, Vietnam, Lao PDR, Cambodia, Syria, Kuwait, United Arab Emirates, Malaysia; **Africa:** Burkina Faso, Cape Verde, Chad, Gambia, Guinea-Bissau, Mauritania, Niger, Senegal, Ivory Coast, Mali, Togo; **Oceania:** Fiji; **South America:** Brazil.



Glyphosate is prohibited or banned from import in the following countries: Oman, Saudi Arabia, Kuwait, United Arab Emirates, Bahrain, Qatar, Austria, Germany, Malawi, Vietnam, and Luxembourg (the latest country to prohibit its use starting on January 1, 2021). The countries with restricted usage include Argentina, Belgium, Bermuda, Canada, Denmark, France, Italy, Malta, the Netherlands, Spain, Portugal, Colombia, and Sri Lanka.

Regarding **chlorpyrifos**, the European Food Safety Authority (EFSA) issued a confirmation statement on August 31, 2019 affirming that chlorpyrifos adversely affects development of the nervous system and the brain of a child, even when exposed to trace amounts. The evidence comes from both laboratory animals and epidemiology. This chemical also adversely affects the reproductive system. The EFSA said that *“It is not possible to determine the level of chlorpyrifos exposure that is safe and, thus, it does not meet the criteria for renewal of approval for use.”*

The EFSA declaration prohibits the use of chlorpyrifos. Indeed, in the European Union, the registration for this chemical already expired January 31, 2020. Previously, European countries had already banned chlorpyrifos, such as Denmark, Finland, Germany, Ireland, Latvia, Lithuania, Slovenia, Sweden, Norway, Iceland and Switzerland. Other countries have strong restrictions on use, such as the United Kingdom, which allows use for only one type of plant only. Other than European countries, other countries have joined the ban on this chemical, such as China (banned in fruits and vegetables), Yemen, South Africa, Malta and Vietnam, among others.

The protracted fight to ban these three toxic agricultural chemicals in Thailand

For many years, civil society joined forces with academia and government agencies involved with the health of the population to call upon the Hazardous Substance Committee to ban use of these three toxic agricultural chemicals, but their protests largely fell on deaf ears. However, the situation began to change in April 2017, when the MOPH and National Hazardous Substances Committee resolved to ban paraquat, chlorpyrifos and glyphosate by the end of 2019, together with calling for the Department of Agriculture to terminate new registration and limit the import of these three chemicals

immediately. However, the Department of Agriculture felt a time extension was needed since it could not eliminate the existing stocks in country by the deadline. Also, the local proprietors said they could not easily re-export their stock as it was already mixed in a formula that might not be consistent with the needs of other countries which would otherwise accept the export. Thus, a six-month extension of the deadline was requested.⁹



The push of various groups to ban the three chemicals¹⁰ led to the confrontation between ban proponents and opponents.¹¹ Significantly, this became a political issue in 2019 when Thailand had an elected government, and the topic could be put on the legislative agenda of the House of Representatives. The House set up an “Extraordinary Committee on Guidelines for Controlling Chemicals in Agriculture”, of the House of Representatives. On November 21, 2019, the House voted unanimously (423 to 0) to approve of the banning of the three pesticides, and to set up a fund to help affected farmers to transition to more intelligent machinery and eco-friendly methods. The House also called for establishing a system for monitoring toxic residues in agricultural products and put Thailand on track toward the development of sustainable agriculture to 100% of the cultivable area by 2030, which is the target year of the related UN Sustainable Development Goals (SDGs).

On the other hand, on November 27, 2019, during the meeting of the newly re-structured Hazardous Substance Committee, the Permanent Secretary for Agriculture proposed that the Committee considered a “review” of the resolution to ban the three chemicals (at the meeting on October 22, 2019 which was intended to be effective from December 1, 2019). A new resolution was proposed to delay the ban of paraquat and chlorpyrifos for six months until June 1, 2020, and to change the category of glyphosate to “restricted use.”¹³ That is an action which is contrary to the Committee’s resolution on October 22, 2019, yet occurred under the advocacy of Mananya Thaiset, Deputy Minister of the Ministry of Agriculture, and Chairperson of the four working groups of the Committee.

The “reversal of the resolution” of the Hazardous Substance Committee astonished many people. Assoc. Prof. Jiraporn Limpananon, President of the Pharmaceutical Council was interviewed about this and felt that the decision was out of the ordinary and not based on consensus opinion. She also said she was resigning from the Committee in protest.¹⁴ That observation is consistent with the opinion of the representative of the MOPH who said there was no vote in the meeting, either by a show of hands or calling on individuals.¹⁵ Asst. Prof. Dr. Prinya Thaewanarumitkul, Lecturer at the Department of Public Law, commented that when there is no quorum at the time of voting, and the Committee members do not have a vote in the matter, then the new resolution is not lawful. In other words, the resolution by fiat is equal to no new resolution.¹⁶ The Ombudsman, who noted that the Committee had previously resolved to ban all three chemicals by January 1, 2020, also felt that the Hazardous Substance Committee must provide an explanation for this reversal of policy.¹⁷

The Network to Support the Ban of Deadly Toxic Substances has 686 members.¹⁸ The Network joined with the Consumer Network Organization to issue a press announcement appealing to all parties to respect the resolution of the Hazardous Substance Committee, dated October 22, 2019, and reconsider implementation. A formal complaint was filed with the Administrative Court and the Criminal Court for Corruption and Misconduct Case as a case of corruption, and recommended a reprimand, citing Suriya Juangroongruangkit, Minister of Industry, as Chairperson of the Hazardous Substance Committee at the meeting dated November 27, 2019. The complaint also called on the

government to assist affected farmers during a transition off the use of the three chemicals, and to follow the proposal of the Extraordinary Committee on Guidelines for Controlling Chemicals in Agriculture, of the House of Representatives.

A way forward for Thai management of toxic chemicals in agriculture

The prolonged struggle between the groups proposing and opposing the ban of the three types of high-risk pesticides/herbicides reflects limitations in the structure of governance in the control of agricultural chemicals. In other words, the current controls are not functioning in a way to protect the health of the population and environment. In view of this dilemma, the following are four approaches to resolving this issue:

1. Enact a law on chemical pesticide control which is specific to the toxic substances that should be banned. This law should be separated from the Hazardous Substances Act as proposed by the National Human Rights Commission¹⁹ because control, advertising, distribution, and user exposure for agrochemicals is different from other chemicals in industrial plants. In addition, the control measures should apply the concept of 'Precautionary Principle,' with full participation of stakeholders, and transparency in considering which chemicals to ban or restrict. The decision must be based on an analysis of potential adverse effects on health and the environment. The committee that reviews that impact should be comprised primarily of staff from the MOPH and the Ministry of Natural Resources and Environment.

2. Collecting chemical pesticide tax. The tax should reflect the level of hazard and potential for harmful impact to more rationally structure the price of pesticides. The tax revenue should be proportionate to the amount the country has to pay for restoration of health and environmental damage from use of toxic pesticides. If such a tax were levied, insecticides such as chlorpyrifos would

be ten times more expensive than they are now. This tax revenue would also be used to support research and development of biological products or alternative methods for managing weeds and plant diseases.

3. There are clear criteria for eliminating toxic pesticides. For example, if the source country of the pesticide has banned its use in their own country for health reasons, then there is no reason why Thailand should have to incur that risk. But any move to ban a pesticide/herbicide must be based on solid evidences and science.

4. Establish a national surveillance system to detect and monitor prevalence of pesticide residues. This system should receive participation from all related sectors, and the public should be able to view the information. These data should be used for early detection and resolution of problems, as in the RASFF (Rapid Alert System for Food and Feed) of the European Union. Under RASFF, when countries encounter a contaminated product, they return the product to the manufacturer or distributor, or destroy it. But if the tainted product inadvertently goes to market, within 24 hours, all member states are notified and they, in turn, notify all retailers to remove the product from the market. The public is also made aware of this information in real time.

Epilogue

The prolonged battle over the banning of the three types of toxic pesticides discussed in this chapter reflects problems in the Thai system of regulating chemicals for agriculture. This experience has also clearly demonstrated that the controls in the system are not working to protect the health of the farmer and the public. Thus, Thailand should enact issue legislation to control specific chemicals used to eliminate pests/weeds. There should be special taxes on sales of toxic chemicals commensurate with the damage they may cause to health and the environment. There must be clear criteria for the removal of pesticides posing a serious hazard. Finally, there should be continuous monitoring and alert systems to detect residues of these chemicals as they work their way through the food chain. The general public needs to be aware of the potential threat of these chemicals – not just to farmers, but all consumers in the marketplace. That will be an important factor in the push for a safe and equitable agricultural and food system, which places a premium on public health and environmental safety.





Plastic Pollution in the Seas: Thais Join the Movements to Reduce Plastic Waste

<https://www.technologychaoban.com>

Currently, there are many sea and wildlife animals that sacrifice their lives due to plastic waste. Many kilograms of plastic waste were found in the belly of dead deers at Khao Yai National Park in Nakhon Ratchasima, and Khun Sathan National Park in Nan in 2019. Those events shocked the nation and has awakened Thais to the plastic waste crisis. Measures were introduced to stop distributing plastic bags at malls, supermarkets and convenience stores throughout the country since January 1, 2020. That is an important step toward reducing plastic waste in the country leading up to the ban on seven types of plastic by the year 2021. The plan is to substitute renewable materials that are environmentally-friendly and increase the efficiency of state waste management.

Plastic is a wonderful material. It has features of being light-weight, durable, yet flexible, and cheap. That is the principal reason why it is used so much in products and packaging, but also causing excessive use of plastic. The production of disposable plastic (single-used plastic) greatly increased convenience in consumption of humans, but the disadvantage of that type of plastic is that it does not degrade. This throw-away culture, combined with the single use behavior of humans, has caused enormous problems, both on land and at sea. This is a global problem, and all societies need to implement measures together to reduce the production and use of traditional plastics,

especially the practice of single-use plastic, and increase the efficiency of waste management by the government. This article presents a summary of the plastic waste problem and Thailand's efforts to solve it.

The problem of plastic waste flooding the world and health problems

The production of industrial plastic has been around for over half a century (since the 1950s), and the first plastic bag was produced by a Swedish engineer in 1965.¹ After that, the amount of production of plastic has increased rapidly and continuously in the estimated amount of not



<https://www.chiangmainews.co.th>

less than 8.3 billion tons (equivalent to the weight of one billion elephants). It is estimated that every minute around the world, people use 1-2 million plastic bags and 1 million plastic bottles.² The use of plastic straws in the United States is estimated to be 500 million per day.³ If allowed to continue this way, it is estimated that, by 2050, the world will have plastic waste in the amount of 12 billion tons.⁴

Plastic helps create so much convenience for humans that it is easy to overlook the fact that it does not degrade naturally. Plastic bags and straws that are used for only 10 minutes and then thrown away will remain intact in the environment for hundreds of years. Even though plastic has excellent usability features, it is not easily recyclable when discarded. Researchers estimate that only 9% of the plastics are recycled for re-use, 12% is recycled by burning, and most (79%) is disposed of in landfill or residual areas of the environment.⁵ A research team led by Jenna Jambeck assessed the amount of plastic waste from different countries which end up in the sea. The team found that, in 2010, about 5-13 million tons were dumped into the sea. That is equivalent to one truckload of plastic being dumped into the sea every minute.⁶ There has been speculation that about 300 million tons of plastic waste are currently floating in the oceans around the world, including over 5 trillion small pieces of plastic with a combined weight of over 250,000 tons.⁷

Plastic waste in the environment is damaging ecosystems, marine wildlife, land animals, and humans. With this uncontrolled dumping of plastic waste into the seas, the cumulative effect on marine life and coral is devastating. Scientists estimate that 1 million seabirds each year die from ingestion of plastic.⁸ About 700 species of marine life are adversely affected by plastic waste.⁹ Even though plastic does not degrade, it can break apart into small pieces called “micro-plastic” smaller than 5 millimeters down to the nanometer level. This plastic residue in the environment can and does easily enter the human food chain. Scientists have reported finding micro-plastic in all environments around the world, including the seas, the beaches, mud deposits, the deepest depths of the ocean to the ice in the polar region.¹⁰

As the micro-plastic has a small particle size and can float on water, it easily spreads along streams, evades the water treatment process, and enters the flow through piped water taps in households for consumption. What is worse, the micro-plastic particles can absorb other pollutants from contaminated water sources such as heavy metals, which also persist in the environment (Persistent organic pollutants: POPs). This ingestion and absorption of micro-plastic particles and toxic substances is a definite risk to health of humans, and can interfere with the hormonal system and trigger gene mutations, with the potential to cause cancer, among many other ailments.¹¹

The problem of plastic waste in the sea has become an urgent agenda of the global community. The United Nations Environment Program (UNEP) announced that 2018 is the “Year of Beating Plastic Pollution,” and urged all governments to implement measures to reduce or eradicate disposable single-use plastic.¹² A small whale died and washed up on the shore of Songkhla Province on June 2, 2018. In its stomach was found 80 plastic bags weighing a total of 8 kilograms.¹³ That gruesome discovery occurred just three days before World Environment Day (June 5, 2018) causing the foreign mass media to spotlight the excessive use of plastic in Thailand. Some stories observed how even bananas and boiled eggs are wrapped in plastic, and Thailand was dubbed as “the land of plastic.”¹⁴ When combined with Jambeck’s data, Thailand was ranked 6th worst in the world for plastic dumping into the sea (150,000 - 410,000 tons per year).¹⁵ This shameful news made Thailand a target of global wrath.

Problems of plastic waste in Thailand and guidelines for a solution

If returning to look at the production and consumption of plastics and the situation of waste management in Thailand, it is hard to argue with foreign criticism of past practices in the nation. The Pollution Control Department reports that Thailand uses 45,000 plastic carry bags per year, while Bangkok consumers use an average of 3 to 8 plastic bags per day. Country-wide, people in Thailand consume about 4.4 billion plastic bottled beverages per year, used 6,758 million foam containers for food per year and discard 9,750 million single-use plastic drinking containers per year.¹⁶ However, the government’s previous measures focused only public campaigns to try to persuade people to reduce the use of plastic bags and foam containers. Those campaigns were found to be ineffective, and the plastics industry continued to expand every year. During the past ten years, plastic waste accounted for 12% of the total waste. Data from the Pollution Control Department estimated that the amount of plastic waste generated was approximately 2 million tons per year, and only 25% is recycled, while the remainder is mostly single-use plastic which is disposed in landfills, incinerated, or dumped in the sea, thus contributing to the plastic waste and micro-plastic pollution of the marine environment.¹⁷

As noted, Thailand ranked 6th worst in the world for dumping plastic into the sea, and this shameful distinction helped galvanize the country to address the problem more seriously. A group under the Federation of Thai Industries has undertaken a project to promote government cooperation with the private sector and civil society to find sustainable solutions to eventually eradicate plastic waste (or Public-Private Partnership for Sustainable Plastic and Waste Management). These three sectors signed an MOU on June 5, 2018. This spurred 34 organizations to set a goal to completely replace single-use plastic waste in accordance with the ‘circular economy’ concept, and raising public knowledge and understanding of proper use of plastic to reduce dumping in the Thai sea by at least 50% by the year 2024.¹⁸

The Pollution Control Department under the Ministry of Natural Resources and Environment is the host of the Subcommittee on Plastic Waste Management, which has the Permanent Secretary as chairperson. One success has been the abolition of the use of plastic covering of bottled water containers (cap seal) as a voluntary measure taken by industry during 2018. Based on this experience, the Ministry issued guidelines for cooperation between the public and private sectors in drafting a roadmap and draft action plan for plastic waste management. A goal was set for reducing and discontinuing use of seven types of plastic, and replacement by use of renewable materials that are eco-friendly. The first goal was to eliminate the cap seal plastic, which was accomplished in 2019. The next goal



was to eliminate plastic products containing Oxo, and then, by 2022 eliminating microbeads from plastic, plastic bags with handles with a thickness of less than 36 microns, foam food containers, and single-use plastic cups and straws. The goal for 2027 is that all plastic waste is captured by the waste management.¹⁹

However, the draft roadmap does not have a provision for an act of law that will help enforce these measures. Thus, there is no guarantee that government will achieve the goals.²⁰ As can be seen from the case of plastic bags that use Oxo, that practice is still going on, and industry gets around the crackdown by using another term, and claims it is biodegradable. However, that material does not meet the standards for compostable plastics. Progress in legal measures has only occurred in the area of micro-plastic beads in cosmetics, after the Thai Food and Drug Administration (FDA) issued a notification from the MOPH on the Characteristics of Prohibited Cosmetics Import or Sale (Version 2), 2019. Cosmetics which contain plastic microbeads were banned from import, production or sale beginning January 1, 2020.²¹

The year 2018 can be considered a watershed moment when the government and private sector agreed to work toward reduction of plastic waste. However, initially most measures were voluntary campaigns, i.e., to persuade all related sectors to reduce plastic on their own. The Ministry of Natural Resources and the Environment reported progress on this “Do good deeds to reduce environmental hazards campaign”, from the beginning of the activity on July 21, 2018 until August 31, 2019. Results show that the campaign was able to reduce the use of plastic carry bags (i.e., with handles) by more than two billion pieces, or approximately 5,755 tons.²² But the number of plastic bags that were taken off the market still accounts for a very small proportion when compared with the total volume of plastic carry bags, or 45 billion per year. Plus, the campaign to stop using foam boxes and single-use plastic was not as effective as it should be.

Plastics found in the stomach of forest wildlife and marine animals: Another force driving the nation to stop distributing plastic bags.



A major turning point in the issue of plastic waste occurred in the second half of 2019 when plastic waste was found in the stomachs of dead wildlife and marine animals such as wild deer at Khao Yai National Park and at Khun Sathan National Park, as well as the famous little dugong named “Mariam”, which was closely followed by Thais on social media.²³ Although the autopsy results showed that Mariam died from infection in the bloodstream and purulent lungs, a large number of Thais believed that plastic in her stomach played a role in Mariam’s death.²⁴

The deaths of such wildlife and marine animals have helped to reinforce awareness about the problem of plastic waste in Thailand and led large segments of society to call on the government to issue strict plastic waste reduction measures, and seriously enforce them. Warawut Silpa-archa, Minister of Natural Resources and the Environment, invited representatives of the department stores, supermarkets and convenience stores to discuss measures to reduce plastic waste on September 6, 2019. That produced the idea for a national campaign to “Say No To Plastic Bags”, which was first implemented by 43 large chain stores (later expanded to 75 retailers). One key measure was the elimination of plastic carry bags, starting on January 1, 2020, which was more strict than the goal set in the roadmap (which just focused on thin plastic bags, i.e., less than 36 microns) and only by 2022. However, the government still allowed four types of products to be able to use plastic bags, including foods that need to be heated in the package, fresh food, meats, and fruits.²⁵ The Thai Retailers Association expects that, if these goals are taken seriously, then that will reduce up to 9 billion plastic

bags per year. The number of plastic carry bags used in department stores, supermarkets and convenience stores total 13.5 billion bags per year, representing 30% of the total 45 billion plastic bags used per year.²⁶

After 75 major retailers stopped distributing plastic bags from January 1, 2020, most Thais are cooperating by using personal cloth bags or reuse plastic bags and containers instead of single use. People are using a variety of non-plastic containers such as sacks, satchels, buckets, etc. as a substitute for plastic bags.²⁷ A Nida Poll survey during January 7-8, 2020 among a sample of 1,262 people of various careers and ages found that 57.7% agreed with this measure, but felt that the mall should have other types of bags, or replacement services, and most (79%) adjusted by using a cloth bag or other personal bag in place of plastic.²⁸

However, in the social media world, some academics and many members of the public did not agree with the measures to eliminate plastic bags. They saw these measures as taking advantage of consumers, even to the point of making a complaint to the Office of the Consumers Protection Board (OCPB). Their reasoning was that retailers should procure paper bags or other substitutes, or the product price should be reduced.²⁹ The complaint also criticized the retail department stores for not distributing bags, or replacing them with spun plastic bags for sale and profit. Another complaint is that Thai consumers are urged to reduce of plastic while Thailand accepts delivery of plastic waste from other countries.³⁰ The argument is that, while consumers at retail outlets are reducing plastic, the overall volume of plastic in the country has not declined. Thus, the government should also restrict import of plastic waste.

These criticisms point to the need for government to promote a unified awareness among the population and a consensus about the road ahead. The use of plastic carry bags is a matter of concern in countries around the world, and 127 countries have laws to ban these or prevent free supply to consumers at retail outlets. Others require a fee or tax to be added if a plastic bag is used for a purchase.³¹ Many studies found that measures to stop giving away free plastic bags or charging extra for the use of a plastic bag are effective measures that help adjust behavior of consumers and are more flexible/acceptable than an outright ban. That way, there can still be policy to restrict plastic bags, but still provide a way out if a consumer has not brought their own bag. This flexible approach prevents a backlash and encourages customers to be compliant.³² Thus, the public needs to understand that charging for plastic bags is not exploitation by the retailer of the consumer, but an incentive to change behavior of the masses. In addition, retail stores and convenience stores that do collect a fee for plastic bags can publicize how they use that revenue to donate to public causes such as hospitals or environmental conservation foundations.

Another issue to consider is that merely replacing plastic bags with cloth or paper bags which are not reused very much may actually consume more energy and chemicals to produce and is not a sustainable solution to environmental protection. In some places, such as California, and many cities in the United States, local governments have enacted laws requiring the provision of low-energy-consumption alternatives to standard plastic bags, such as degradable or recyclable plastic bags.³³

<https://inhabitat.com>



The next step of plastic waste reduction measures

Measures to stop distributing plastic bags by supermarket chains and convenience stores around the country is an important first step to reduce waste from plastic bags in Thailand. It will probably take some time for people's behavior to adjust to the new norm. However, this measure has weaknesses, namely, compliance depends on voluntary measures of the stores. There are cases where employees of convenience stores still relent and provide plastic bags if a customer complains.³⁴ Also, most of the small retail shops, fresh markets, and hawkers still package products in plastic carry bags. These total tens of billions of pieces per year (i.e., 70% of 45 billion bags). Moving forward, the Ministry of Natural Resources and the Environment announced that it would push for a law under Draft Act 3R prohibiting the use of seven types of plastic by 2021, to be replaced by environmentally-friendly materials instead.³⁵ If passed into law, that would shorten the time to achieve the original roadmap goals by one year.

In addition, the advocacy mechanism has been modified from the original "Subcommittee on Plastic Waste Management" into the "Subcommittee on Plastic and Electronic Waste." Minister Warawut is Chairperson of the Subcommittee to ensure progress is made toward laws and measures to control the import of waste from foreign countries.³⁶

Many parties hope that the draft law will be enacted and should cover all types of community waste to enable an integrated waste management system nationwide. The goal should be sustainable waste management that focuses on preventing or reducing waste at the source, while requiring increased responsibility of manufacturers (Extended Producer Responsibility: EPR) to reduce plastic waste from the origin of product production and packaging. Industry needs to design products and packaging for easy recycling, and participate in systematization, recall or collection of packaging waste or product waste from consumers. There could be a refund guarantee mechanism (deposit-refund) for packaging and various products to create incentives for consumers to return waste to the manufacturer. These measures have been implemented in developed countries with success (such as the German packaging law issued in 1992).³⁷



In addition to the role of the government, consumers should change their behavior of using single-use containers so that re-use and recycling become the norm. One way to reduce waste is by replacing throw-away plastic water bottles with refillable personal water bottles. Consumers should resist the temptation to order food and products online which often is delivered with an excessive amount of plastic containers and wrapping. If everyone chips in and helps each other modify their lifestyle only slightly, then that will have a huge impact on reducing plastic and other types of waste nationally.

Summary

Over the past five years, Thai society has started to become more aware of the plastic waste problem, especially since it was publicized that Thailand ranked the 6th worst country in the world for polluting the seas with plastics. This was followed by the documentation of dead whales and sea turtles due to ingestion of plastic waste. This fate has also affected forest wildlife, and the combination of events galvanized the government and private sector to upgrade measures to reduce plastic waste, and mount campaigns to encourage consumers to use personal cloth bags when shopping. Department stores, supermarkets and convenience stores have bought into the campaign nationwide to not use plastic bags for consumer purchases, starting on January 1, 2020. It is important to monitor compliance with that and other measures to build momentum for a sustainable solution. These measures will need to be backed up by laws and serious enforcement. This requires the understanding and cooperation of all sectors, including the government, goods producers and consumers who need to join forces to implement measures to reduce plastic waste, and make Thailand a 'good-practice' case for contributing to solutions to a major global environmental problem, instead of being a part of the problem. The threat from plastic pollution is no less than the global warming crisis that the world is facing at present.





Clinical Depression among Youth: What Can Be Done?

<https://www.tcjthai.com>

Depression is a major problem for young people around the world. Depression affects thinking, feelings, behavior, including abnormal clinical mood conditions and debilitating health problems. Depression is more likely to occur in children and persons age 10-18 years. Youth sufferers of depression are at risk of becoming adults with depression. Parents with depression are at risk of having children with depression as well. Depression is a leading cause of teen suicide. Youth in Southeast Asia have the second highest suicide rate per 100,000 population among regions around the world.

Depression is a leading cause of teen suicide, although the suicide of a youth cannot be attributed solely to depression. However, the data clearly show that the incidence of depression is associated with risk of suicide. People with depression tend to have low self-esteem and high emotional fragility, including having difficulty managing their own emotions. Therefore, when encountering a particularly stressful event, the depressed youth might see suicide as the quick way out. Youth victims of bullying are especially vulnerable to unpremeditated suicide.¹

From a WHO survey in 2016, children and youth in Southeast Asia have the 2nd highest suicide rate per 100,000 population in the world after Europe. The startling

thing is that suicide is being found in cases as young as 10 years old. The WHO survey report lists the top three causes of death of people age 15-29 years as accidents, suicide, and being abused.² A repeat of the WHO survey in 2018, found the top-ranked causes of death of youth age 10-19 years remained the same as the survey results in 2016. This article is a discussion of the situation of depression and suicide in Thailand, youth risk factors for depression, and ways to prevent and reduce depression.

Youth Depression Situations in Thailand

The Department of Mental Health reported that, in 2017, persons age 20-24 years had a suicide rate of 4.9 per

100,000 population. That rate increased to 5.33 by 2018. Statistics from calls to the national mental health hotline #1323 indicate that there is a rising trend in youth calls to the hotline. Of 70,534 calls to the hotline for counseling, 10,298 were from persons age 10-19 years, accounting for 14.6% of the total. The top five issues which they called about include stress or anxiety, psychiatric problems, love relationship problems, depression, and family issues.³

In addition, another risk factor for depression among child and youth is the weakening of the strength of the family. A survey by the Thai National Statistical Office (NSO)⁴ analyzed the proportion of children living with both parents in the household from 2002 to 2012 and found that the proportion was decreasing over that period. That measure is a proxy indicator of the loosening of family ties.

A synthesis of studies on mental health of students in Thailand since 2013-2015^{5,6,7,8,9} produces the following findings:

1. The higher the year of education, the more depressed are the college students;
2. In one university, fully 6.4% of a sample of 1,600 students had thoughts of suicide;
3. The first person that a college student turns to for help when having personal problems is a peer;
4. The place for committing suicide is mostly a dormitory, followed by home;
5. The number one cause of suicide is controversy with close acquaintances, followed by problems with school, and love relationship problems;
6. Factors associated with depression include health/ chronic illness, anxiety, stress, bad relationship with parents and friends, lack of someone to confide in, experiencing mental suffering, automatic negative thinking, pondering negative events, and the personality of the parents;
7. Factors associated with freedom from depression include adequate income, ability to recover energy when feeling down, good family atmosphere, and self-esteem.

Risk factors for Thai children and youth with depression

In Thailand, the main risk factors for depression are as follows:

1. **People who are at risk of depression are those exposed to loss, and those close to them.** There are



many studies found that students in Faculties of Nursing had higher risk of depression than other departments, perhaps because of frequent exposure to suffering and death of others. Thus, this group and their peers are at elevated risk of depression.

2. The repeated publishing of news stories about suicide or self-harm in the media. Youth are particularly susceptible to “copy-cat” behavior when it comes to suicide. The more they hear about it, the greater the temptation there is, if only to be famous for a day or two (posthumously). The news of suicide in the media can affect the following people:

- People with depression who are emotionally fragile, and may feel a goading to follow that path when they see no way out
- Others at risk include those close to someone who repeatedly consumes news about suicide and self-harm.

Therefore, when teen suicide happens, society should not look to blame anyone. There are many people in society who are already in “a fragile state of mental health”. All it takes is the right kind of trigger to set them on a path of self-destruction. This is the cumulative effect of adverse events in life and, perhaps, a genetic predilection. The persons close around these vulnerable individuals are also at risk of depression, as if the condition were contagious.

3. Over-emphasis on achievement and competitive comparison

Being a diligent student and trying to be a good child may not be enough to build social immunity in life. Ironically, the children who always get good grades and never disappoint their parents/teachers are at elevated risk of depression, as are children who are poor students. Many students in countries of Southeast Asia experience mental health problems from academic pressure. For example,

in Vietnam, the Mai Huong Psychiatric Hospital, located in Hanoi, conducted a survey of 1,200 primary and lower secondary school students and found that 19.4% had a mental health disorder, and the most common cause of this disorder was parental pressure to do well in school.¹⁰

In Thailand, research sponsored by the Thai Health Promotion Foundation (ThaiHealth) found that Thai children studied harder than children from all countries in the world except for Japan. Most schools in Thailand have a schedule for children to study 8-10 courses per day. Some students burn out from this course load and lose the motivation to learn. The study also found that 87% of Thai children spend only ten minutes a day talking with their parents.¹¹ Singapore, a country that is quite competitive in academics and the work force,¹² has begun to modify its compulsory education curriculum to teach students more life skills than theoretical knowledge. The new curriculum is more about learning for living, and eliminates class grades, but instead encourages students to compete with themselves, not against others. In addition, many psychologists have proposed the theory that each

child is competent in their own way. This is similar to the Multiple Intelligence Theory of Gardner.¹³ That outlook creates the realization that it is fruitless to compare students against one another; each student should be encouraged to find their own competencies.

4. The way of life of children who are addicted to electronic screens/children in cities who need to rush

Someone has coined the term for children of this generation as “screenagers” because of the amount of time they spend on electronic devices. Staying up late at night, waking up early and not getting enough rest puts youth at risk of depression. Researchers at the University of Pittsburgh conducted a study using brain wave measurement with 35 youth age 5-15 years. Children who did not get enough sleep were less satisfied.¹⁴ Many research studies have found that the frequency of using social media correlated with symptoms of depression, which strongly suggests that the number of hours spent using social media, the greater the risk of developing clinical depression.¹⁵

Preventing and reducing the occurrence of depression

Depression is a health problem and a social problem. This condition is debilitating and undermines the quality of life of the population. Thai society and network partners should work together to prevent and reduce the occurrence of depression as follows:

1. Cultivate a Growth Mindset.¹⁶ One cause of depression is negative thinking process or falling into a cycle of negative thought. A person who quickly concludes that they are a failure because of a relatively trivial mistake can lead to a sense that they have no potential. By contrast, youth need to see that mistakes are learning opportunities; temporary failure can be the path to self-improvement and success. Different thought processes cause children and adolescents to react differently when faced with the same problems or challenges. Youth who are at risk of automatic negative thought are those with rigid outlooks on life. Parents and teachers can play an important role in helping the child to take a broader view of life and adversity. That way, the child can learn from mistakes and temporary set-backs as a means to development perseverance and resilience. Instead of running away, the child learns to embrace criticism for

<https://www.rajavithi.go.th>

self-development as well as develop the ability to analyze an adverse event to see how it could have been handled differently.

People with a 'growth mindset' consider obstacles as opportunities for learning. By contrast, the person with the fixed negative outlook will see an obstacle as something that should not be there because it prevents them from doing what they wanted to do.

Therefore, it can be seen that the thought process is extremely important for children and youth. Practicing the positive thinking process will build psycho-social immunity for children and youth to overcome problems and obstacles that they encounter throughout their life.

2. Accumulate life assets for children (adding supportive factors; subtracting risk factors)

Train youth to encounter and accept both failure and success. If all they are told is that they are successful, then the child is at risk of not being able to cope with failure when on their own. Even children who have never done anything successfully should be given opportunities to explore their own potential, and build self-esteem gradually that way.

One question alluded to earlier is why do so many of the top students come down with symptoms of depression? Society tends to think that those students should be 'on top of the world.' However, each student is different, and each has acquired different levels of immunity to expectations of achievement and adversity. Youth have unequal ability to be resilient. Those youth who are the straight-A students may live in fear of not scoring 100% on each exam. That can produce enormous internal pressure



<https://www.123rf.com>

and anxiety. Those persons have never learned how to cope with an occasional bad grade or sub-par performance. Thus, they are very vulnerable to depression when that inevitably occurs. Youth need some sort of outlet to process these stressors. Some students can talk with parents or peers. Other students are introverts and cannot easily talk with anyone.

Classroom experience is also important for self-awareness and awareness of others, since each student has different capacity to cope. Thus, the teachers should be careful not to view all students as the same. Some type of language may be unsettling to some students while others can easily process it. In addition, one teaching method may not be suitable for all learners. Thus, teachers need to give students both positive and negative experiences. The higher-aptitude students may be given more challenging assignments, or given impossible problems to solve in order to build immunity from failure. The students with lower aptitude may need a series of tasks which they can succeed at and progressively move onto more difficult assignments. That will instill both pride and perseverance.

Two research projects conducted by Piyawan Visessuvanapoom^{17,18} were implemented continuously over a period of two years to study the use of supplementation learning (Scaffolding Instruction) to increase ability of graduate students. In the first year of the research, the students received supplementary learning to help them gain skills when learning to do it alone. Without the supplemental learning, students may perform at a level 7 out of 10; when providing supplementation learning, students may perform up to a level of 9. Thus, the research found that supplementation did improve learning outcomes and work skills. But, at the same time, during the work process, students may have adverse emotional states such as worry, stress, fear, etc. In the second year of the research, emotional assistance was added to augment the supplementation learning. Both research studies concluded that reinforced learning should help skills development, and that dealing with emotions is part and parcel of superior performance.

3. Understand children as they are (social capital, mental capital, general ability)

Each child and youth has differences and hidden potential. In addition, their background mental and physical

health differs. Psychological and cognitive domains help define the individual, such as perception, attitude, mindset, life assets, life skills, personality, ability to speak, ability to recover inner strength (i.e., resilience) after confronting a setback, self-esteem, and aptitude. In addition, each child may also have different levels of social support, such as love and attention from family, friends and teachers. Accordingly, when children encounter problems or the same challenge, some may not get discouraged or deterred, while others will collapse in the face of adversity.

In the classroom, activities include interaction between teachers and learners, and this dynamic creates a “classroom atmosphere” which is a foundation for academic emotions, which can be both positive and negative, and have positive and negatives effects on performance. The negative emotions may inhibit learning and also produce undesirable behavior. If it intensifies, a negative disposition can create chronic problems, such as inability to complete assignments on time, truancy, skipping class, etc. An accumulation of these negative behaviors can produce risk of depression in the student. Therefore, the teacher must strive to create a positive learning environment and good classroom atmosphere which is characterized by friendliness, acceptance, listening, and giving special attention to students who are lagging behind the rest of the class.

4. We influence each other’s social environment

Depression in children and youth occurs because of both internal factors, such as heredity, and external factors such as events. Therefore, everyone in society, the parents, family members, teachers, and peers should share responsibility for promoting good mental health for children and youth, such as the following:

- 1) Quality time spent by parents or family members in looking after and talking to children and young people;
- 2) Creating an atmosphere in learning institutions that encourage children to feel safe and accepted, including anti-bullying by promoting constructive attitudes toward one’s teachers and classmates;
- 3) Train talented children to meet adversity and have the ability to deal with failure. Train non-talented youth to have confidence and good self-awareness by giving them successful experiences, including strengthening skills that are necessary for work and psychological support;



4) The media should participate in the promotion of good society and, therefore, producers of media should promote content that sparks creativity;

5) Listen a lot. Sometimes people who are frustrated may need only an ear from a close acquaintance so they can vent. Accordingly, the WHO organized a campaign called “Depression: Let’s talk”¹⁹ for people in the early stages of depression to be able to express their concerns. This can help the sufferer realize that they are not alone, and they have value. The campaign has guidelines that should be implemented in various social groups and settings.

Summary

Depression is a big problem for Thai children and youth. At present, children and young people from the age of 10 upward are vulnerable to depression. The present lifestyles of Thai children and youth, the changing status and strength of the family, media consumption, and living in a society that likes to compare individuals against one another, are all factors that put Thai youth at risk of developing symptoms of clinical depression. Accordingly, the society from the family to the national level should be aware of the severity of this problem because children and young people with depression tend to grow into adults who are clinically depressed. Reciprocally, parents with depression tend to produce children with a vulnerability for depression. This is an emerging and growing problem that should not be neglected or overlooked. Everyone in society should play a role in promoting psycho-social immunization within the child, and instill them with determination and resilience to be able to deal with adversity. This requires creating a quality environment so that children grow up with a healthy level of self-esteem, and acquire the requisite life assets to lead productive and socially-engaged lives.



Keeping an Eye on Medical Marijuana Policy: Dream or Reality

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Although Thailand is the first nation in Southeast Asia to have medical marijuana laws which allow the use of marijuana and Kratom to be studied and researched for their medical benefits and treatment of diseases, but that is just the beginning. “Unlocking” marijuana was given a boost during the 2019 popular elections as some political parties proposed a “Free Marijuana Policy” by encouraging laws that would allow cannabis plants to be planted freely in every home. However, marijuana is an addictive substance and, thus, it is important to have control measures. Granting permission to use marijuana for medical care needs to be done with the right knowledge and understanding in order to prevent problems from occurring later.

Today, cannabis is a plant that is recognized as medically useful. In the United Kingdom, marijuana is extracted for use in the treatment of multiple sclerosis. Currently, the substance is approved for medical use in 24 countries such as Australia, Austria, the Netherlands, UK, Spain, etc. Cannabis extracts are used for symptomatic treatment of neuropsychiatric symptoms, and treatment of appetite disorders in cancer patients, among other applications. Some countries allow the cultivation of marijuana for medical use¹ such as Canada, Israel, the Netherlands, UK, Switzerland, and some states in the United States, and the trend in many countries is toward approval of medical marijuana use. This chapter is a summary and discussion of the development of the ‘free cannabis policy’ in Thailand, consisting of the introduction of policies, related laws, the

social movement for cannabis among various groups, and the impact of the free cannabis policy.

Free marijuana: From political campaign posters to government policy

The free cannabis policy is 1 of 6 urgent policies² of the Bhumjaithai Party used in election campaigns. On January 1, 2018 California legalized the sale of marijuana for recreational use to buyers age 21 years or older. Saksayam Chidchob, the Secretary of the Bhumjaithai Party, said that legislation made California the largest marijuana market in the world, with a value of the marijuana business of not less than US\$15 billion, or 495 billion baht⁹ which would generate an estimated \$3 billion in sales tax, or about 100 billion baht. This law allows

residents of California to grow marijuana at home (but no more than 6 plants), with the state collecting a fee of \$1 per plant per year (30 baht per year). The intention is that home cultivation would be for personal use to relax or mix with food. The law also allows mixing of marijuana with products sold on the general market as a way to generate for income for the public. However, the law stipulates that there cannot be more than 8 grams of cannabis per serving. Thailand should consider similar laws to allow marijuana for medical treatment such as symptomatic treatment for anorexia in AIDS patients, reducing nausea in cancer patients, treatment for heart disease, or even used for recreation. The Bhumjaithai Party sees marijuana as a cash crop that generates income for farmers. One marijuana plant can yield up to 1 kilogram (kg) of product. If sold in the United States, that would earn 70,000 baht per kg. In an area of one rai, a marijuana farmer could cultivate 6,400 plants. In theory, that would generate an income of 448 million baht per rai. After the election, the Bhumjaithai Party joined the government, and was able to place the 'free marijuana' policy on the national agenda.

After the election in 2019, General Prayut Chan-Ocha, the Prime Minister, presented the government policy agenda to Parliament on July 25, 2019.³ One of the 12 priority agenda items was to develop technology for the use of marijuana, hemp and other herbal remedies in medicine, and to create economic opportunities and generate income for citizens.⁴ However, the content of this policy focuses on providing assistance to farmers and develop innovation only, and does not specify exactly what and how it will be conducted. This concept deviates from the Bhumjaithai Party platform when it was campaigning during the election season. Thus, the issue of "free marijuana" has become a contentious topic, and an opposition group has materialized.

Even though the policy agenda did not explicitly call for decriminalization, medicinal marijuana has been directly advocated by the MOPH under Anutin Charnvirakul, leader of the Bhumjaithai Party as a Deputy Prime Minister and the Minister of Public Health. Anutin has advanced the agenda for a liberal marijuana policy of the Party continuously in the midst of pro and con arguments. Accordingly, the MOPH issued four ministerial announcements related to marijuana and folk medicine.⁵ The effect has



been that, since August 19, 2019, 19 hospitals, with both traditional and modern medicine departments, began to treat patients with cannabis under control of the Thai traditional medicine authority.

On August 30, 2019, the Government Gazette website⁶ published two announcements about marijuana and Kratom, including a public health announcement on drugs that are criminalized as a Category 5 substance (Version 2), and included the stipulation that extracts of cannabis and Kratom are not to be considered harmful or criminal drugs. Instead, they should be included in the class of herbal treatment or medicinal drugs, and used only for therapeutic purposes. However, the media and the public interpreted this news as a sudden liberalization of marijuana. Accordingly, the Bhumjaithai Party drafted two laws related to marijuana to be included in the Amendment to the Narcotic Drugs Act (No.)⁷ and the Thai Institute of Narcotic Plants bill.⁸ These draft laws were proposed to the House of Representatives on September 12, 2019 to pave the way for legalization of cultivation of six cannabis plants per farmer, as per the Party's campaign policy.⁹

However, the free cannabis policy movement has been compromised by a number of academics including the chairman of the International Narcotics Control Board (INCB),¹⁰ Wirot Sumyai, who pointed out that Thailand is a signatory to the 1961 UN Convention on Narcotic Drugs together with 196 countries around the world. If Thailand wants to legalize cultivation of marijuana, it must leave the UN Convention, and that would cause Thailand to lose the benefit of purchase and import of many types of useful

drugs. Also, for many countries that grow marijuana freely, it would be considered a violation of international law. Advocating for a free marijuana policy is not easy because the opposing forces have grown, and it is unclear whether the Bhumjaithai Party policy will ever see the light of day.

Use of marijuana for medical care

Currently, despite the announcement of the MOPH on the re-classification of cannabis and Kratom, the announcement did not have the legal effect of removing those plants from the five types of criminal narcotic plants. Only the dried core, stem, and fibers, including hemp seeds, are not considered prohibited drugs and can be used for medicinal purposes.

Niyom Termsrisuk, Secretary-General of the Office of the Narcotics Control Board (ONCB)¹¹ asserted that cannabis is still a Category 5 drug under the law, and production, cultivation, import, export, distribution, possession, or consumption of cannabis without permission is a violation under the law. The announcement of the MOPH is in accordance with medical marijuana policy only, and the general public is not allowed to possess marijuana. Niyom also announced the arrest of 42 marijuana smugglers in 2019¹² and the seizure of 10,266 plants, most of which occurred in the northern region. After relaxation of the restriction of use of cannabis for medicinal purposes, there was almost a doubling in the number of arrests for marijuana use and possession: Up to 130,000 during 2019. There was also a 100-fold increase in hospital admissions for overdosing on marijuana use.¹³

Following that, clear progress was made on medical marijuana when the Thai Traditional Medical Council announced a training program for Thai traditional medicine practitioners on marijuana use through mixing cannabis as part of an herbal therapy. This would implicitly allow marijuana

cultivation, and cannabis procurement for authorized practitioners in Thai traditional medicine in five areas, namely, Thai medicine, Thai pharmaceuticals, Thai massage, traditional birth attendants, and traditional healers. According to the Thai Traditional Medical Professions Act, B.E. 2556 (2013), Thai traditional medical practitioners must comply with the rules and conditions as per announcements of the MOPH, and must pass a training course on using Thai traditional medicine when mixing in marijuana.¹⁴

In addition, in 2019, the Department of Medical Services of the MOPH issued a manual for medical marijuana use called “Guidelines for Medical Use of Cannabis”¹⁵ The guidelines contain standards for medical marijuana, and the conditions for which it is effective. The guidelines include taking a history of the patient before providing medicinal marijuana, dosing, contraindications, and precautions, among other advice.

Current call for ‘unlocking’ marijuana

Even now, the media and the public are still confused about use or possession of marijuana. Some of the misunderstanding has been caused by the government by not giving clear information to the public. This just feeds into desire of segments of the public who want to believe that marijuana will be decriminalized. Thus, the public pressure is mounting for a liberalization of marijuana law, and this has led to five urgent resolutions in the House of Representatives, sponsored by the Future Forward Party, the Pheu Thai Party, the Democrat Party, and Bhumjaithai Party. One effect has been the creation of an Extraordinary Commission to consider the use and solutions to liberalizing marijuana, including examining the effects of marijuana and Kratom. A 60-day period was set for completion of the review.¹⁶

Meanwhile, a network of people was formed among representatives academia and civil society on marijuana and Kratom.¹⁷ The network is led by a pharmacist (Niyada Kiatying-Angsulee), who is the Manager of the Thai Drug Watch, and includes academics from the Faculties of Law of Chulalongkorn and Thammasat Universities. The network submitted the matter to the President of the House of Representatives, with 10,000 signatures from members of the public to propose legalization of medicinal plants such as cannabis and Kratom. The petition



included the appeal to remove marijuana and Kratom from the Category 5 criminal narcotics list, and reclassify them as medicinal drugs that are safe for medical use. The petition also called for establishing a control system among people in the community as is currently done with other folk medicine. The petition proposed the establishment of an Institute of Marijuana and Kratom Medicinal Plants as a government agency under the supervision of the Prime Minister, with the authority to study the impact of these medicinal herbs. The network feels that these plants are safe if used correctly for medicinal purposes and provide a low-cost therapy for people in need.

Marijuana supporters and critics

In addition to the bill specifying the structure for liberalizing marijuana policy, the path forward is becoming clearer as various sectors have been involved in drafting guidelines for the implementation. The Thai Government Pharmaceutical Organization (GPO) and national network of Village Health Volunteers (VHV), led by Anutin Charnvirakul, Deputy Prime Minister and Minister of Public Health, are becoming a formidable front for advocating medical marijuana.¹⁸ The GPO is already accelerating the production of cannabis oil (in 5 ml bottles) for use in hospitals under the MOPH, and will be expanding products and services in the future. The Thai FDA has begun to allow planting of cannabis crops in controlled areas. The Chao Phya Abhai Bhu Bejhr Hospital, and the Rajamangala University of Technology Isan, and the Department of Medical Services are collaborating with the GPO and Maejo University to manage this initiative. In addition, the MOPH has a policy to upgrade the VHVs as a kind of “barefoot” doctor since they are a crucial link with the Tambon Health Promoting Hospitals in providing knowledge about health, and enable them to dispense marijuana pills, eventually allowing them to grow model marijuana plots as an example for villagers to study, while generating income for the VHVs as grassroots overseers of the medical marijuana movement.

From the above guidelines, the National Association of VHVs¹⁹ feels that, instead of allowing a VHV to plant six cannabis plants each, they should instead be allowed to grow the plant as a community enterprise under a “1 Tambon Hospital – 1 Plot” scheme. This plot could be managed by a subcommittee of the Tambon Administrative Organization,

and involve various sectors, the MOPH and local agencies to act as consultants and advisors. A state-owned marijuana organization would then buy marijuana from the VHV Association which manages community-enterprise marijuana cultivation. This would all be managed through the Provincial Public Health Office, and there would be a Thai traditional medicine practitioner assigned to every Tambon Hospital responsible for treating patients with traditional medicine and to conduct research on use and outcomes.

While a wide range of groups have come together with civil society to advocate for the ‘free cannabis’ policy, there are differing opinions on how to proceed. Decha Siriphat, President of the Khao Khwan Foundation and Withun Lianjamroon, Director of the Bio Thai Foundation are strong advocates for public access to medical marijuana. They are both pleased with the work of the MOPH to advance the policy, and the speed with which change is happening. As a result, more traditional practitioners and people in need are receiving medical marijuana. However, some issues may need to be considered more carefully. For example, in the case of the proposal to have VHV cultivate demonstration plots for marijuana cultivation, Rosana Tositrakul of the Thai Holistic Health Foundation, had previously proposed that it should be the local traditional healers who should grow the marijuana plant to treat their own patients. She does not feel that the practitioner role should be extended to the VHVs because it is the folk healers who are qualified and already protected by regulations which allow herbal therapy.²⁰

Vichien Keeratinijakal, herbal expert from Kasetsart University²¹ cited the example in some countries where a patient receives a physician’s prescription to grow marijuana on their private land just for personal treatment, and only if other drugs are not working. This approach is being tried in the US and other countries around the world. In fact, however, there is no country which has totally unrestricted cultivation of marijuana – perhaps with the sole exception of Colombia. Initially, marijuana should be treated as alcoholic beverages are. There would be restrictions, for example, like not being under the influence and driving a motor vehicle, and there would be age restrictions to deter youth access. A first phase of liberalization should allow the patient to grow marijuana for personal medical purposes and self-healing.

As for the political sector, while several parties have joined the free cannabis movement, they are leaving the advocacy role to Bhumjaithai. Perhaps that is because they see the policy as a double-edge sword, due to the strong pro and con factions. Furthermore, Bhumjaithai wants to go beyond medical marijuana to allow recreational use, and that extent of liberalization may scare off some political parties. Thus, as of this report, the free cannabis movement is focused only on medical use.²² This collective pause is reflected by comments of the Prime Minister on December 11, 2019²³ who observed that medical marijuana must be carefully studied and only used as appropriate. Cultivation of the plant must be in a controlled area; otherwise, production could get out of hand and cause a multitude of problems.

That said, the MOPH is moving forward on medical marijuana policy rather aggressively. The Committee for Medical Marijuana Advocacy has set up a website www.medcannabis.go.th²⁴ so that the public can have correct knowledge and understanding about safe medical marijuana use. Indeed, 110 medical marijuana clinics are being opened in hospitals at the regional, provincial, and district levels throughout Thailand. That is perhaps the most significant harbinger of a full unlocking of cannabis in the years ahead²⁵ as well as establishing a Medical Marijuana Institute in the Office of the Permanent Secretary of the MOPH.

Impacts of the free cannabis policy

To succeed, the free marijuana policy has to move one step at a time because the issue is being closely monitored by both the political and academic power centers. Medical marijuana must be under the control and supervision of a qualified practitioner. That is because cannabis is still a strong drug and can have adverse impacts on health if used improperly. Marijuana can affect the respiratory system, the cardiovascular system, cognitive function, and exacerbate mental disorders. That is why many countries that are more liberal than Thailand still have tight control measures for medical marijuana.²⁶ As for pushing marijuana for its economic benefits, Dr. Thira Woratanarat of the Faculty of Medicine of Chulalongkorn University²⁷ cited data from a study of economic value from the liberalization of marijuana from the state of

Colorado in the US. That study found that, for each \$1 collected from tax on the sale of marijuana, the public had to pay \$4.5 to address the adverse health consequences of marijuana use, both direct and indirect. In addition, there is an increased rate of school drop-out with increased availability of marijuana, and this especially affects high school students. What is more, the rate of cannabis use in various forms is increasing among students. There is still a lot of addiction among people with a low education, and marijuana tends to be a ‘gateway drug’ to the use of even more dangerous drugs. Therefore, as the Prime Minister indicated, the issue needs to be considered comprehensively.

Summary

Controversy over the “free marijuana” policy seems to have stalled the liberalization movement. However, the Thai medical marijuana policy seems to be moving quietly, but determinedly, along. As this continues to progress, it is crucial that government ensures that the public has correct knowledge and understanding about medical marijuana. They must know the benefits and harm of cannabis. Even as the country takes a more liberal view toward the medicinal properties of cannabis to alleviate and treat symptoms of various diseases, there must be strict control measures to prevent cannabis from morphing into addictive use. As for policy to address the economic benefits of marijuana and, ultimately, recreational use, the government must act cautiously so that the society will be well prepared for such liberalization. Whatever extent marijuana use is allowed, it must always be under close supervision of a physician. That is because, even with short-term consumption, some users experience memory loss, and it is possible that the chronic use can lead to more permanent brain dysfunction.



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Monitoring Private Hospitals: Health Policy VS Medical Capitalism



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In 2019, the Cabinet resolved to provide medicines, medical supplies, and clinical services as controlled products. This resolution allowed the Ministry of Commerce to oversee prices of drugs, medical supplies and services. This issue has been widely discussed in society, with proponents and opponents on both sides. Seen one way, this is just a matter of controlling prices as part of economic policies. However, seen more deeply, this saga also reflects the social aspiration of achieving a healthy population and equal access to quality health services.

Introduction

On March 22, 2019, the Cabinet passed a resolution which classified drugs, medical supplies and clinical services as controlled products. This had the effect of allowing the Ministry of Commerce to oversee the pricing of these three classes of products. Dispensing medicines and delivering medical supplies and services can be seen as a type of economic activity and, in the private sector, that means generating profits. That economic activity benefits the state through taxes collected and by drawing foreign

investment in the form of medical tourism from abroad. However, looking more deeply, this issue is more than just an economic strategy. It is related to the goal of achieving a healthy population and equal access to quality clinical services for everyone. This article discusses the health issue from both social and economic dimensions, and the impact of the March 22, 2019 Cabinet resolution. This section addresses the question why health consumers have to use the private sector, and proposes joint solutions between the government, public and private hospitals.

Health perspective from the social dimension versus the economic dimension

In the past, health was considered an individual matter. However, as societies have modernized, health of the population (i.e., public health) is viewed as one element of state security. Indirectly, the productivity of the state depends on having a healthy work force. Logically, then, health is a matter that the government should control and manage by establishing policies to be in line with the government’s requirements. A state needs a population that is strong, intelligent, and healthy for as long as possible. At present, this concept is still developing and extending to the strategy of engaging the population in helping to formulate health policy and programs at the national and sub-national levels. That is one vantage point of health and society. Another viewpoint is that health care is something that can be profitable through a system in which both the provider and client benefit. This view acknowledges that everyone needs health or medical care at various points in their life, and that the state cannot serve every health care need of the individual. Thus, the societal rationale for private health care is to fill the gap in public services. However, the business rationale for private care is that people are willing to pay large amounts of money in order to feel fit and well, since that is a basic human drive. In an open marketplace, there will be many private providers with a range of prices for the same service. Indeed, some of these hospitals are so successful that they are listed on the stock exchange. Hospitals may form conglomerates to control a large share of the market for private health services. In 2019, private hospitals and health businesses that were registered on the Stock Exchange of Thailand (SET) were valued at about 500 billion baht.¹

Even in times of economic slowdown or crisis, the business of private hospitals grew steadily. During 2019-2021, it is projected that the private hospital business will grow at an average of 10-13% per year, driven by structural changes in Thai society such as the transition into an aged society, increased urbanization, and the growth of the middle class, combined with a greater health consciousness of the populations around the world.²

The expansion of the private hospital business has been both good and bad for the Thai health system.

รายการ Description	จำนวนเงิน Amount	ส่วนลด Discount	สุทธิ Net Amount
Drugs and Parenteral Nutrition 1.1.1			
Medication 1.1.1	2,970.00	0.00	2,970.00
Lab Investigation and Pathology 1.1.4			
Lab Investigation 1.1.4	2,035.00	0.00	2,035.00
Packaged Medical Charge 1.1.14			
Other Medical Service Charges 1.1.14(2)	380.00	0.00	380.00
Physician Evaluation 1.2.1			
Physician Evaluation 1.2.1	1,000.00	0.00	1,000.00
Parichat Charoentawornpanich,	1,000.00		

<https://pantip.com>

On the positive side, people have more options to receive health services, and that helps reduce congestion at government hospitals. On the negative side, the growth of private medical care causes a brain drain from public facilities.³ Treatment fees, nursing, medicines and diagnostics can be much more expensive in a private facility compared to the same product in a government hospital.⁴ In an uncontrolled market, private outlets can charge basically any fee they want, and this regularly produces complaints about profiteering in those facilities.^{5,6} Law suits have been filed, with appeals to the government to intervene and provide some oversight and standardization. That is the background which led to the Cabinet resolution on March 22, 2019.

Progress of the implementation of the Cabinet resolution

As noted above, the 2019 Cabinet resolution introduced a provision to classify medicines, medical supplies, and clinical services as controlled goods and services. This enables the government to then compare products across sectors and providers, and to expose those providers who charge well in excess of the market price for their products. That way, profiteering outlets can be controlled. However, some observers were concerned that if, say, the price of drugs was standardized, then private outlets would compensate for their lost profit by reducing the quality of other products. For their part, the private hospitals argued that the government should let free market forces control prices (i.e., competition) since no hospital had a monopoly, and that the only way they could profit from the business of health care is to charge higher prices than the generic costs.

Despite these concerns, after the 2019 Cabinet Resolution, the Ministry of Commerce stepped in to prepare to control the prices of drugs and medical supplies, given their authority under the 1999 Act on the Price of Goods and Services,⁷ and issued Announcement No. 25 of the Central Committee on Prices of Goods and Services later in 2019.⁸ This announcement gave notice to the private sector that the government intended to impose controls on pricing of medicines, medical supplies, and clinical services.⁹ The announcement indicated that these standards would become effective one year from the date of the announcement.¹⁰

The following are the principles and conditions as stated in the announcement:

1. The hospital must inform the purchase price and/or the basis for the price of drugs, medical supplies, clinical service fees, and other service fees related to the treatment of diseases listed in the national illnesses list, and the Universal Coverage Emergency Patients (UCEP) care, and the Thai essential medicines list (Thai Medicines Terminology: TMT);

2. The hospital must show the QR Code which has information comparing the selling prices of drugs prepared by the Department of Internal Trade, at an area of public access in the hospital which is easy to read;

3. Upon request, the hospital is to estimate the cost of the medicine, medical supplies, medical service fees and other service fees related to the treatment of a patient before providing the product;

4. In the event that a drug is sold on an outpatient basis, the hospital is to issue a prescription and drug invoice to patients in advance, in which every page is clear and easily readable.

These measures are based on the three principles of consumer protection: (1) The prices of medicines and medical supplies must be transparent and fair (Fair Price), by requiring the private hospital to notify the purchase price of the product; (2) Consumers must have a choice (Consumers' Choices) by requiring private hospitals to display the QR Code with drug price comparison information; and (3) The hospital provides appropriate treatment (Reasonable Treatment). A sub-committee is appointed in the central and provincial levels to make

judgments in case of complaints of over-provision of medical services or the excessive medical service charge. Whenever there are damages or exploitation, the consumers will receive legal protection.¹¹

Despite seeming to be reasonable conditions, the Private Hospital Association sued the Administrative Court to cancel the aforesaid announcement and provide temporary protection. This puts the announcement on hold while the Administrative Court deliberates. The complaint of the Private Hospital Association is that they were not represented as a stakeholder in the formulation of these provisions, nor was there consideration of what damage might occur to private health and medical services if this announcement is enforced. In addition, the above orders apply only to private hospitals; government hospitals are exempt from any controls.¹² At the time of this writing, the case was still with the Administrative Court.

Why do consumers go for services from the private hospital?

When considering the context of socio-economic development and the health service system in Thailand at present, there are at least four direct and indirect factors which lead consumers to seek service from private health/medical outlets:

- 1. Growth of the middle class, awareness of rights, and personal and health service system needs in urban areas** has boosted demand for health services. If there are inadequate services in the public sector, then consumers who can afford it will turn to the private sector. Further, unchecked migration of the population to cities has meant that the expansion of public health/clinical outlets cannot keep pace with the growing catchment population, nor can they keep up with the demand by consumers for certain technology or quality of service. This produces acute gaps between supply and demand in the public sector, which the private sector naturally steps in to fill. Thailand has an extreme imbalance in distribution of clinical facilities and personnel, with an enormous concentration in Bangkok, at the expense of the rest of the country.¹³ Also, there is no rational structure to the collection of Tambon Health Promoting Hospitals, or district/provincial/regional hospitals which means they are not distributed in accordance with

the population or need for care. There are also imbalances in public-private distribution of outlets in any province with a large urban center.

2. Many private hospitals develop into specialized centers in order to be more competitive and capture a more sustainable market share. Currently, many private hospitals are marketing themselves in different niche areas of care and expertise. This is a business strategy to reach certain consumer groups and create demand in the potential consumer population. Some private hospitals specialize in psychiatric care, others in treatment of spinal injuries, some are specialized in the neuro-motor system, ENT, eye care, renal disease, and urinary tract infections, while there are cardiology centers, cosmetic surgery/beauty centers, among many others. There are also rehabilitation centers which offer “packaged” services such as a maternity package, general health examination package, vaccines package, and cosmetic surgery packages, etc. These packages have the effect of persuading the consumer that they are getting more for their money when a group of products is bundled into a “package” and, thus, there is considerable demand for these.

3. There are government policies that support the private hospital business. The emergence of private hospitals in Thailand is related to the country’s economy, including state policy that promotes private investment. The government recognizes it cannot meet all the needs of the population, and appreciates the role the private sector plays in filling gaps. That has the effect of easing the burden on public health and clinical outlets. There is also the lucrative business of “Medical Tourism” which the private sector is much better suited to host. Since 1973 onwards, investment in the private hospital sector has been strongly supported by the Thai government.

Accordingly, the number of private hospitals/facilities has expanded continuously. During the economic crisis in 1997, the reduction in incomes of the general public led some private hospitals to shift their customer base and to target disease-specific conditions and foreign medical tourism. The government also allows private hospitals to register on the SET, which enables those institutions to raise capital for expansion. In addition, the government also has an investment promotion policy through tax deduction for activities which contribute to Thailand’s goal of becoming a “Medical Hub” for the region. The most recent development is the Eastern Economic Corridor (EEC) which includes medical centers located in strategic parts of the country. This promotion of private hospitals has meant considerable profits for that sector, as well as all the related businesses that cater to the sector.

4. The Influence of advertising and business competition may prod private hospitals to motivate people to buy more health products/services than they actually need. In today’s digital age, there is no limit to the range and depth which people may explore to shop for services. This also means that hospitals can reach target consumers in ways that were never possible before. This can lead to deceptive advertising practices or hidden marketing. Consumers who lack the requisite knowledge in health and medicine (i.e., Health Literacy) may fall for disingenuous pitches from unscrupulous clinics which are concerned more with profit than actually improving a person’s health status. This is an issue for medical ethicists and professional councils to examine more closely and prevent harm to the unsuspecting public.

Seeking a joint solution through collaboration of government, the consumer, and private hospitals

The discussion above helps explain why more people are turning to private hospitals for essential and non-essential care. Private hospitals can tailor their products and services to certain groups of consumers, and the imbalance of the population in Bangkok and other large cities guarantees that the public sector will have a hard time meeting the needs of their catchment population. This means that people who can afford it, will turn to private outlets for improved access, convenience, and personalized care.



However, if considered from the economic angle, private hospitals are one engine of development and economic expansion which increases income and employment for people at all levels. Obviously, the state cannot reject the private hospital sector, but there should be some way to optimize the market so that the consumer has reasonable choices, and private hospitals are not overly restricted from participation in a free market environment. The government has the power to control and enforce the law, and is the key authority to balance the benefits for the public, businesses, and society at-large. The announcement of the Ministry of Commerce was the first step to try impose some control on the market for drugs, medical supplies, and clinical services to prevent exploitation of the consumer. However, the private hospital sector will always vehemently oppose external state control to the way it does its business. The following are some recommendations for a compromise solution.

1. The government and private hospitals should first pledge to cooperate with each other in good faith.

The Ministry of Commerce statement relied on consumer protection law which recognizes that, due to supply-demand imbalance in the public sector, private hospitals are essential to the country's health and medical system, by helping to fill gaps and reduce the burden at public outlets. What is more, today's health consumer is more particular and may demand a convenient service that is tailored to their needs. That said, the public and private sectors need to find common ground in the need to protect the rights of consumers as the first principle.

This is not just a superficial proposition of keeping the consumer happy. Instead, it recognizes that the private sector stands to benefit over the long-term if there is a standard service that is transparent and verifiable, even though costs may vary depending on the fair market environment. This will boost consumer confidence and increase demand across the board. A standardized system of services would also be a strong marketing point to international clients, and help make Thailand a genuine hub for private medical services in the region and beyond.

2. Government measures to protect the consumer should not just be about publicizing standard drug prices. Today, consumers can scan the QR code to look for drug prices and cost-compare by themselves. When they visit a private hospital, they can immediately estimate what the cost of certain products will be. This places more of the burden on the consumer to be aware of the costs and benefits of a health/clinical service. That would work for the savvy consumer, but may not work so well for the elderly or other disadvantaged populations who are not adept at using modern information technology. Thus, a balance must be found in which all three groups play a role in helping the consumer make a sound and cost-effective decision. This will require close strategizing and give-and-take among the government, private hospitals and consumer representatives.

3. The government should establish a mechanism to steer excess revenue from the private hospital back into the national health system or social welfare. In other words, the profit the private hospitals make should not all go into the pockets of the shareholders. It must be remembered that many private hospitals have benefitted from public sector investment in medical and nursing training, and many doctors and nurses who had spent their career in the public sector, switch over to private outlets when they reach mandatory retirement age (i.e., 60 years). Conversely, the private sector has still not ventured into the business of producing doctors, nurses, and other medical personnel. At the same time, the public sector must continue to upgrade its own personnel and facilities. One good example is the government's Banphaeo General Hospital that has developed its capacity to such an extent that is can compete successfully with the private hospitals in the locality.

4. Public health services should be under control and review of the consumer protection law system, just as the private sector should be. Thailand has a consumer protection system, and has passed various laws and policies such as the 1979 Consumer Protection Act, the 2008 Liability for Damages Arising from Unsafe Products Act, and the 2008 Consumer Case Procedure Act. There are agencies to supervise the implementation of these laws, and the overall market is monitored by the Office of the Consumer Protection Board. However, for many years, there has been resistance to subject public and private hospitals to the 2008 Consumer Case Procedure Act because it would open the door to frivolous malpractice suits which could cripple hospital administrations and erode services. Be that as it may, if Thailand's health and medical services are to be competitive domestically and internationally, they must be transparent and accountable for their actions. Thus, a middle ground needs to be found where hospitals and personnel are protected from mischievous complaints, but are also auditable.

5. Consumers should be protected in government hospitals just as if they were in private hospitals. At present, more and more public hospitals, especially medical schools, are operating in a manner similar to a private hospital. For example, there are special clinics or centers of excellence within government hospitals, such as the Bhumisiri Mangkhalanusorn of Chulalongkorn Memorial Hospital, the Siriraj Piyamaharajkarun Hospital, Sriphat Medical Center, and Rama Premium. The MOPH itself has a policy to cooperate with the private sector to work with large state hospitals to create Medical Center Complexes by having the Department of Medical Services implement a pilot project in Bang Sue District of Bangkok, and then expand the initiative to the other regions. This could be the trend in the future in which the distinction between of services between public and private sectors gradually disappears. That said, the government hospitals must be careful not to use their comparative advantage (i.e., being subsidized by the state, good name, public donations, etc.) to cause the private hospitals to lose market share unfairly. In other words, there needs to be an equivalent control system for both public and private hospitals.

Summary

The Department of Internal Trade has issued guidelines for notifying the consumer of the price of medicines, medical supplies, and clinical services in advance of selling a product. This guidance is still under review by the Administrative Court, and it is not clear how effective it would be if it were enacted as law. In addition, government measures to require the public to do cost-comparisons on their own before choosing a medical service provider or product may be placing an unfair burden on the consumer, especially those who have limited health literacy or skill in using information technology. In many cases, the reality is that people have no choice; their health or medical condition may be urgent and there is no time to get a second opinion or to “shop around.”

Private hospitals are indispensable because they provide tailored services to a discriminating consumer audience. Plus, the private hospitals help reduce burden on the over-stretched government outlets and help boost the economy by generating revenue from domestic and international clients, and creating employment locally. Even if it could, Thailand would never want to nationalize private medical service providers. Thus, the challenge is how to find the optimal environment which is satisfactory to the private hospital, the public sector, and the consumer. In its role of law promulgation and enforcer, the government has the central role to bring all parties together to find a satisfactory solution. The common ground should be consumer protection and satisfaction, with the vision toward a complete and comprehensive health and medical service system which is fair, meets international standards, and a market in which the institutions mutually reinforce each other.





E-cigarettes: A Giant Health Threat for the Thailand 4.0 Era

<https://themomentum.com>

Electronic cigarettes were invented with the hope of creating “alternatives” for people to quit smoking conventional cigarettes. That was until the false belief that e-cigarettes were safer, less dangerous, and effective to quit regular smoking was exposed. Reports from around the world show that electronic cigarettes are more toxic and dangerous than conventional cigarettes. The WHO has announced that e-cigarettes is not a device or tool for quitting smoking. The reality is that the method of smoking cessation using e-cigarettes is less effective than using other methods and also can lead to dual addiction as well.

Electronic cigarettes were invented by a Chinese pharmacist in 2003 by hoping to create a “choice” for people to quit smoking regular cigarettes. Globalization helped catapult the spread of the e-cigarette so fast that it became a “product” that generates huge income. As perhaps a coincidence, the advent of the e-cigarette matches the way of life of the new generation who wants to try novel things that their parents never experienced. Online social media rushed to propel the popularity of this product, but allowing the unproven belief that e-cigarettes were not a risk to one’s health, and could be a bridge to quitting conventional cigarettes. Indeed, the e-cigarette inventor himself could not quit smoking and became addicted to both types of cigarettes. However, in 2015, England reported that e-cigarettes were 95% safer than conventional cigarettes. Skeptics from India tried to refute that claim¹ by pointing out that the British report was based on an unproven hypothesis, and that there was no clinical and epidemiological evidence for the claim of safety. India was especially concerned about this new product since it was already facing an epidemic of new smokers in the younger generation. Studies there also found that, among those who use e-cigarettes to quit smoking, 80% were still addicted to nicotine. That finding is consistent with data from the US that found that e-cigarettes caused youth to become addicted at a younger age,² and reports from

around the world show that e-cigarettes are poisonous and can be more dangerous than conventional cigarettes, such as producing very high heat vapor that destroys respiratory cells.³ Therefore, WHO announced that e-cigarettes are not an effective device or tool for quitting smoking.⁴ This article presents a discussion of the situation of e-cigarettes in Thailand and around the world, the impact of e-cigarettes on user’s health, various laws and legal measures to control use, and policy recommendations for Thailand.

E-cigarettes consumption in foreign countries

Electronic cigarettes or e-cigarettes are a battery-powered device which transmits energy to a heating unit to create nicotine vapor which is then inhaled into the lungs (i.e., ‘vaping’). The e-cigarette contains a nicotine storage unit that can mix in flavoring agents and various substances to attract youth consumers.⁵ However, studies have found that these flavorings can cause cancer. Also, the amount of nicotine vapor can be adjusted to increase ingestion while affecting others in close proximity through exposure to second-hand and third-hand vapor.⁶ The early versions of the e-cigarette were shaped like a normal cigarette. The second generation modified the tube to look like pen. The third generation resembled a metal cartridge and led to

replacing the term smoking to “vaping” or as an advanced personalized vaporizer. The fourth and current generation is a “Pod,” designed to match the life style of the new generation. The nicotine is in a self-sufficient cartridge that resembles a flash drive that can actually be re-charged with a computer or electronic device with a USB port.

The e-cigarette is classified as a type of cigarette using a “heat-not-burn” or “dry” mechanism (Heated Tobacco Product: HTP). An example of a commercial product is IQOS. The e-cigarette usage rate is increasing rapidly around the world, and vendors are targeting youth, people with a sensitive personality, who are gullible and inclined to believe that e-cigarettes help quit “smoking” and are not a threat to the user’s health. But the truth is that this method of quitting smoking using e-cigarettes is less effective than using other methods, and carries the risk of dual addiction.

Currently, the European Union, WHO and the American Lung Association have come out with a joint statement that e-cigarettes are less effective than other methods to quit smoking.⁷ The incentive for people to “vape” are the variety of flavorings, such as fruit, candy, alcohol, together with a nicotine delivery device designed to look modern, and “hip.”

The American Journal of Public Health (online edition, January 2020) reported that, in the last five years, American teenagers started smoking at a progressively younger age.⁸ Between 2017-2018, American high school students were using e-cigarettes more than ever. Teenagers who have used e-cigarettes have four times the odds of smoking other types of nicotine sources than those who have never used an e-cigarette. Study results in North America, Europe, and Asia show that teens who have never smoked before will have a tendency to start smoking cigarettes after first trying e-cigarettes.

The Tobacco Control Research and Knowledge Management Center (TRC), the Action on Smoking and Health Foundation Thailand and network partners have produced a summary of the situation of e-cigarettes in countries around the world, as follows:

United States: TV/cable broadcasters such as CBS and CNN stopped advertisements for e-cigarettes as reports of illness and death attributed to vaping increase. The US FDA has informed Congress that e-cigarettes are not safe, harm blood vessels and blood flow, and reduce the ability of the lungs to fight infection. In addition, some of the flavoring agents are toxic. Thus, a number of states have started

banning flavored e-cigarettes, such as Massachusetts, New York, California (Los Angeles), Oregon, Rhode Island, Alaska (University of Alaska Anchorage) and Texas (supermarkets). Even though the US FDA approved the sale of the IQOS brand of e-cigarettes in April 2019, it prohibited claims that there is less danger than a normal cigarette. The US Centers for Disease Control and Prevention (CDC) recommends stopping the use of e-cigarettes that contain marijuana. The New York courts rejected an appeal to delay the e-cigarette industry ban, and Apple Inc. has withdrawn its app regarding the use of e-cigarettes.⁹

India bans all forms of e-cigarettes, primarily to protect the youth since e-cigarettes are seen as a threat to the health of the future of the nation. India also views e-cigarettes as a gateway drug to other addictive substances.

Korea: The Ministry of Health and Welfare recommends abstaining from use of e-cigarettes until results are verified about the relationship between e-cigarettes and lung disease.

Israel: The Ministry of Health prohibits the sale of e-cigarette-flavored cartridges because of concern about the amount of nicotine they contain.

Philippines: There is the case of a 16 year-old girl with lung injury from smoking e-cigarettes. Therefore, the country announced the prohibition of e-cigarettes nationwide.

Malaysia: Started with imposing restrictions on the sale and use of e-cigarettes. However, as more cases emerged showing harmful health effects, the lack of evidence that they help conventional smokers to quit, and news of related deaths in the USA, Malaysia banned all types of the devices.

The situation of electronic cigarettes in Thailand

E-cigarette usage began in Thailand before 2007. Thailand Health Promotion Institute, the National Health Foundation first disseminated warnings about these devices in 2008. After that, the MOPH’s Department of Disease Control and the Thai FDA considered the prohibition of import and distribution of e-cigarettes and, in 2010, the MOPH issued a measure prohibiting the import of e-cigarettes and domestic sales. In 2014, the Ministry of Commerce issued an official prohibition of the import of e-cigarettes. In 2015, the Office of the Consumer Protection Board issued an order prohibiting sale of e-cigarettes or related services. In 2017, e-cigarettes were included in the Tobacco Product Control Act, B.E. 2560.



<https://health.mthai.com>

Throughout this period, e-cigarette merchants tried to lobby the courts to cancel the prohibition of e-cigarettes, but the government stood fast. The merchants went so far as to organize forums with academics to discuss the possible virtues of e-cigarettes to build credibility and shape public opinion. Thailand is a state party to the WHO Framework Convention on Tobacco Control (WHO FCTC) and has obligations under Section 35 in preventing the tobacco industry from interfering with government policies. The fact that the tobacco industry provided financial support to educational institutions is a violation of the WHO convention. This is in line with the international Stopping Tobacco Organizations and Products (STOP) network which exposed strategies of the tobacco industry to weaken public health systems, dispute data on the harm of tobacco, contract and disseminate research favorable to Big Tobacco, lobby policy makers, and use international trade agreements with threats of litigation to fight any restrictions on their products.

The National Alliance for Tobacco-free Thailand, TRC, tertiary institutions and network partners have worked together to advocate policy on controlling e-cigarettes in Thailand. One strategy is to make the public aware of the marketing strategy of the e-cigarette companies^{10, 11} and jointly review the restrictions with the Ministry of Commerce, academics, and lawyers from the MOPH. This has had the effect of convincing national policy makers to maintain the ban on e-cigarettes to protect the health of Thais.

Conventional cigarettes have used flavoring (e.g., menthol, cloves), and these products have spread into Thai society. However, in 2007, Baraku began to penetrate the market, and the flavorings attracted youth as something new and stylish. Online social media made it easy to publicize, promote and access Baraku (e.g., Facebook, LINE, Instagram and WhatsApp). The Baraku was a springboard to e-cigarette use and, by 2010, e-cigarettes were constantly being modified

to adapt to the styles and norms of the digital-age generation. Merchants used media to reach people of all ages, together with around-the-clock promotion, from the grassroots to the mega-malls, leading to unrestricted growth of the market.

In 2017, the Thai Youth Institute conducted a survey of 1,674 persons age 15-25 years, from all over the country, and found that 39.8% believed that e-cigarettes can help to quit smoking conventional cigarettes, and 76.9% had been exposed to misrepresentations from social media about the product.¹² South Korea introduced IQOS, the first HTP for sale in that country, and subsequent surveys found that 96.25% of HTP users still smoked both conventional cigarettes and HTP. South Korea, therefore concluded that e-cigarettes cannot help people quit smoking according to the claims.

Health effects of electronic cigarettes

The US Centers for Disease Control and Prevention has given a name to the illness associated with use of e-cigarettes: E-cigarette- or Vaping-Associated Lung Injury (EVALI)¹³ and warns of the dangers of nicotine salts in e-cigarettes that may affect the development of the adolescent brain. The first case of death related to e-cigarette smoking was documented in 2010 in the UK of a man who died of lung disease.¹⁴ Since then, the US has reported a continuous increase in the number of cases of illness and death due to vaping. Most recently, in January 2020, a total of 2,668 cases of pneumonia were recorded of vaping users, of whom 60 died.¹⁵ This figure is surely an undercount because physicians in the US have found that the effects of vaping can last up to 12 years.¹⁶ In addition, there are probably many other illnesses that have occurred due to vaping which have not been classified as such or not reported to the public unless the illness is serious or results in death.

A study by the University of California (Riverside) found dangerous metals in vapors from e-cigarettes such as chromium, lead, and nickel, which are carcinogenic. Duke University found that mint flavorings and menthol in e-cigarettes can cause cancer in youth. In North Carolina, there were 70 cases of children under 5 years of age who were poisoned by the chemicals in e-cigarettes, either because they swallowed the liquid content, or were contaminated in the eyes or by skin contact with toxic substances in the cartridge. The National Institute of Medical Engineering has conducted research that shows that e-cigarettes pose a risk to health and release

toxins. Youth who use e-cigarettes are at risk of coughing, and vaping can worsen symptoms of asthma. The University of Sydney, Vermont University, and Australia's Woolcock Institute of Medical Research found that e-cigarettes with flavored additives causes asthma symptoms to worsen. The Royal Adelaide Hospital of the University of Adelaide found that vapor of e-cigarettes that have flavoring can cause lung cells to die.

In November 2019, Thailand found the first case of pneumonia in a person who mixed marijuana with e-cigarettes.¹⁷ The Thoracic Society of Thailand (under Royal Patronage) has also found patients with suspected lung injury, and inflammation from e-cigarettes. The Faculty of Medicine of Ramathibodi Hospital reported that over 95% e-cigarettes contain nicotine, and that causes the heart to beat faster than normal, causes high blood pressure, and even stroke. There are heavy metals in e-cigarettes that are toxic to the lungs and kidneys. There are carcinogens in the fruit flavoring agents or aromas added to the e-cigarettes. The aroma has the effect of destroying bronchial mucosa with PM 2.5 particles and nanoparticles that penetrate vital organs of the body.¹⁸ In response to the claim of the tobacco industry that e-cigarettes reduce the risk of starting conventional cigarette smoking and can wean smokers off tobacco products, over 100 studies were conducted between 2008-18. Of those studies, 75 reports are relevant to Big Tobacco, and though they found that it is true that the heat-not-burn mechanism of e-cigarettes produces less smoke than conventional cigarettes, there was no evidence that vaping was less harmful to the body. Thus, it can be seen that risk from smoking is increasing around the world, and this is directly attributable to the relentless promotion of products by the tobacco industry.¹⁹

In addition to illness and death from e-cigarette use, there are also reports of serious injuries from explosions of e-cigarettes, starting in 2013. E-cigarettes have exploded in pants pockets, in public spaces, stores and train stations. Another harmful by-product of e-cigarettes is that users tend to consume more alcohol the more they vape.

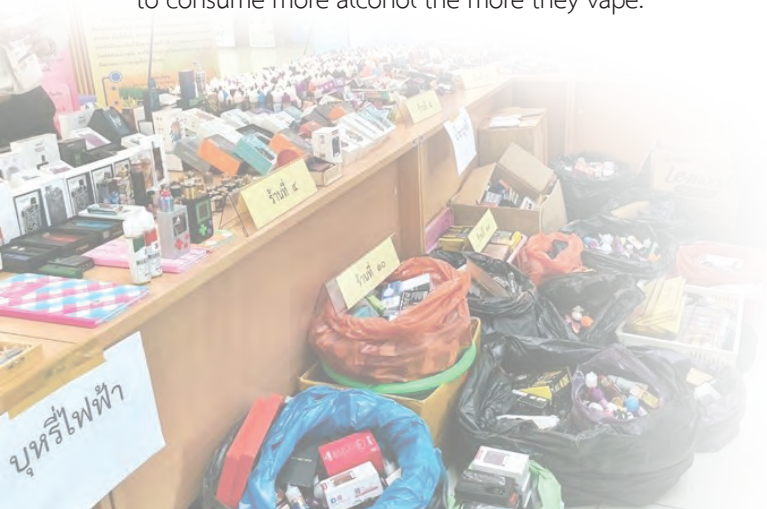
Comparing tobacco control policies and laws on e-cigarettes of different countries

National policy, laws and regulations regarding e-cigarettes in each country are different. Some countries allow trade and import of e-cigarettes while others have banned them entirely. Even in the US, which has strong law enforcement, each state is taking a different approach because of differences in politics and constituencies. Plus, they have to fight the e-cigarette industry at the local level. Also, legal complaints take time to work their way through the justice system. At the time of this writing, there were over 1,000 lawsuits in the US against e-cigarettes. New York City sued the seller of online flavored e-cigarettes while, in Washington State, there are lawsuits on behalf of youth with lung ailments that allege that e-cigarette manufacturers are to blame. Schools are suing e-cigarette companies regarding marketing to youth, and subtly suggesting that vaping is safe. The San Francisco Prosecutor's Office and lawyers on behalf of many states have commented that the advertisement of e-cigarettes on websites may be subject to civil litigation in accordance with the Food, Drug and Cosmetics Law of 1938 if the product label does not provide sufficient warning. There are also lawsuits against the e-cigarette industry in Canada.

Taiwan enacted an e-cigarette control law in 2018 and designated e-cigarettes as an illegal product. They also attacked advertising that claimed e-cigarettes helped smokers quit conventional cigarettes. However, demand is still strong, and youth are able to buy e-cigarettes secretly on the internet. Thus, vaping is becoming more prevalent in high school students and, importantly, those who vape are 3.47 times more likely to smoke marijuana than non-vapers.

Initially Thai law classified heat-not-burn cigarettes as a dry type of e-cigarette. However, after extensive advocacy, Thailand has now banned the import, sale or service of e-cigarettes. However, e-cigarette merchants are still finding ways to get around these bans. They open online markets to allow trade in e-cigarettes, they hire opinion leaders to pretend to be consumers who praise the products, they cite popularity of e-cigarettes in other countries of the world, or hire academics to organize forums to try to persuade the public and authorities to have a more open-mind about e-cigarettes. Their strategy at the national level is to lobby key policy makers who have the power to overturn the bans.

In Thailand there is continued smuggling and trading of e-cigarettes on the black market. Law enforcement and



detection of these practices is not as effective as it should be. This is the same problem around the world as, for example, almost 40% of stores in England sell e-cigarettes illegally (i.e., to persons under age 18 years). This is a difficult problem, especially when merchants use online media to penetrate the market to reach people of all ages. From the report of the Thai Youth Institute, availability of e-cigarettes is through online sources (80.8%), night markets (39.2%), and friends or close acquaintance (31.3%).²⁰

Dr. Amphon Jindawatthana, a member of the Senate, appealed to the Prime Minister to give higher priority to the eradication of the illegal e-cigarettes trade by imposing new control measures and strengthening law enforcement.²¹ Wirasak Wangsupakitkosol, Deputy Minister of Commerce, explained that, during February - August 2019, the Consumer Protection Board arrested 80 offenders of the e-cigarette trade ban. In 2019, the Customs Department arrested eight e-cigarette smugglers at the Sadao checkpoint, and 6,031 offenders were detected at Suvarnabhumi Airport, and 28 at Don Muang Airport.

In 2019, the Royal Thai Police's Crime Suppression Division on Consumer Protections arrested 16 e-cigarette smugglers. In addition, there was an amendment to the Consumer Protections Act by increasing penalties for smuggling offenses. Also, a special operations team has been appointed to monitor the online illegal trade. The government has invited entrepreneurs who own various websites to come together to discuss the guidelines on the crackdown of illegal trade in e-cigarettes through online platforms, and assist in the apprehension of offenders.²² However, much of the action has been passive measures that are not really reducing the availability and use of e-cigarettes. Therefore, government and civil society need to proactively work together to solve this problem of the 21st century.

Guidelines for effective control of electronic cigarettes

Thailand is fighting the e-cigarette industry which is a giant multinational interest group that has professionals working to support it, and which has enormous budgets to combat any attempt to ban or control trade in these products. Thus, a new movement has emerged called the "3 Forces for Coordination" consisting of: 1) The policymakers/government authorities and law enforcement; 2) Academic power by TRC, tertiary institutes and academic institutes to help with surveillance, evaluation, and research which can be used for public benefit; and

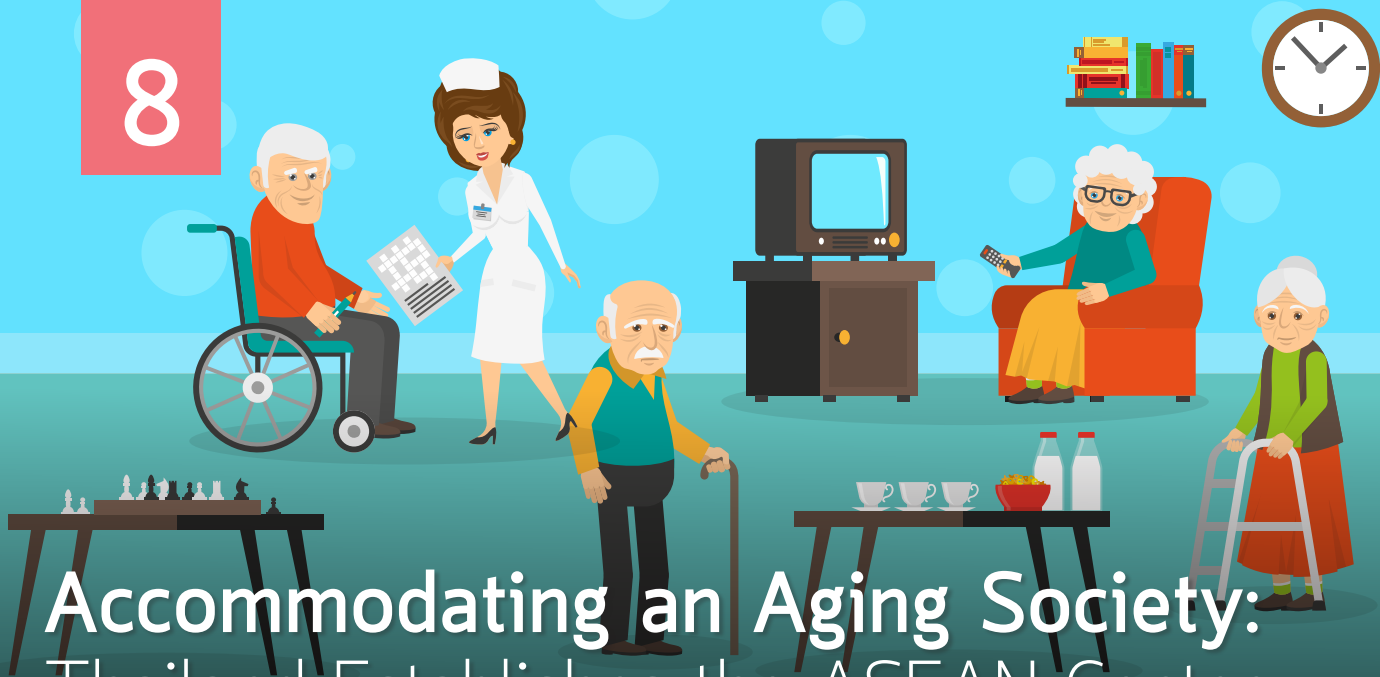
3) Social power by the Action on Smoking and Health Foundation Thailand, federation, networks of professionals, and the Thai Youth Institute. The goal is to improve public policy and create a platform for both online/offline information exchange, using advanced communication technology.

Because the e-cigarette industry is targeting youth, the three powers cited above must work together to create a youth development strategy. This is a model that instills "non-smoker DNA" for life. The slogan is that "Gen Alpha is permanently smoke-free within 15 years." The strategy intends to create social immunity from the time the youth is still in the womb, with a focus on raising the child from birth in a family where the parents are role models. That will be reinforced with a school curriculum that instills knowledge and attitudes starting in preschool all the way through high school. If done consistently and continuously, this strategy should produce protections for the next generation of youth that will carry on into adulthood. At the same time, national efforts to eradicate illegal trade and smuggling of e-cigarettes must continue. Currently, all three power centers have strong knowledge management systems to move legislation based on evidence and a vast trove of data, both domestic and international. This information can be synthesized to produce effective measures to be able to keep pace with the evolution of the products, promoters and procurers. Only that way can the country ensure the protection of the youth of today and tomorrow.

Summary

The e-cigarette usage rate is increasing rapidly around the world. E-cigarette companies are focusing squarely on youth and people who are easily persuaded. That way, clever marketing can convince youth that e-cigarettes are safe and trendy. In fact, e-cigarettes will not help conventional smokers quit, and the device can have serious and fatal impacts on health. Nevertheless, the tobacco industry is determined to prevail in the marketplace. Thus, despite legislation, restrictions, and bans, the demand for e-cigarettes and vaping is as strong as ever. Currently Thailand is trying a model program of 3 Forces for Coordination including government/policymakers, academia, and social power to steer public policy in a more effective direction. The public is encouraged to join this effort through online and offline forums and social media. That way, there is a reasonable chance of producing a new generation of life-long non-smokers.





Accommodating an Aging Society: Thailand Establishes the ASEAN Center for Active Aging and Innovation

<https://www.freepik.com>

Thailand hosts the ASEAN Center for Active Aging and Innovation (ACAI) By 2020, Thailand will have a population age 60 years or over as much as 18% of the total population. Furthermore, in less than 15 years, it is expected that Thailand will become a “complete aged society” when the proportion of the population age 60 years or older reaches 28% of the total population. Thailand, therefore, is promoting active aging in the ASEAN region, which is manifested by the establishment of the ASEAN Center for Active Aging and Innovation (ACAI).

The aging of the population is a phenomenon that is occurring in many countries around the world. It represents a transition from high fertility/high mortality societies, to low birth/low death societies. At the same time, longevity of the population is increasing. Nowadays, the world population has become an aged society, whereby the proportion of the population age 60 years or over is estimated to be one billion people or 14% of the world’s total population.¹ In addition, most developed countries have become complete aged societies while, in others, aging is accelerating rapidly. In Thailand, the rate at which the population is aging is one of the fastest in the world.

Thailand became an aged society in 2005 and, in 2020, Thailand will have a population age 60 years or over that comprises 18% of the total population. Furthermore, in less than 15 years, it is expected that Thailand will

become a “complete aged society” when the proportion of the population age 60 years or older reaches 28% of the total population.² Thailand, therefore, is promoting active aging in the ASEAN region, which is manifested by the establishment of the ASEAN Center for Active Aging and Innovation (ACAI).

This article is a discussion of ASEAN’s aging society, strategies for accommodating the Thai elderly, ASEAN cooperation in establishing the ACAI, and reflections on the guidelines for cooperation of the ACAI.

ASEAN and the aging society

It is not only Thailand that has an aging population. The elderly population of the ten ASEAN member countries comprises 74 million people, or 11% of the total ASEAN population.³ Thus, it can be said that ASEAN has the status

of an aged society. Singapore has reached that distinction the fastest in ASEAN, with up to 21% of the population who are elderly. Singapore is the only ASEAN member country that has become a complete aged society. At the same time when compared with neighboring countries, Thailand is rapidly aging, and is second “oldest” after Singapore.

The impact of being an aged society not only affects the country at the individual level or at the family level, but also has broad effects at the national level as well. While countries in ASEAN are experiencing a rapid increase in the number of elderly, the number of births is decreasing at an even faster rate due to decline of marriage, and reduced fertility norms. In addition, populations of ASEAN countries are living longer than ever before due to advances in public health and medicine. These demographic shifts are already apparent in the shortages of indigenous labor in the working-age years. The increasing number of senior citizens today and in the near future means that governments have to plan now for how to accommodate this demographic “Tsunami.” It is undeniable that there will be a massive increase in the demand for eldercare across the physical, psycho-emotional, economic, social, environmental, and housing dimensions.

Thailand is increasingly aware of what is looming on the horizon and is starting to increase measures to support the aging society. There are various security measures to improve the quality of life of the elderly, both in health, livelihoods, and encouraging society to help empower its senior citizens.⁴

Thailand and the elderly policy and strategy

Thailand is alert to the rapidly changing population structure and the implications of being an aged society. Thailand participates at both the global and regional level in joining treaties, declarations, and action plans for the elderly. The 1st UN World Assembly on Ageing was held in Vienna, Austria in 1982, and produced an international plan of action which provided guidelines on accommodating the elderly. Then followed the 1991 UN Principles for Older Persons which provide guidelines for self-reliance, participation in society, taking care of older persons, helping them achieve self-satisfaction, and living with honor and dignity. Member countries used this framework to develop



their own set of guidelines, tailored to their socio-demographic situation. Thailand produced its 1st National Plan on the Elderly for the period up to 2001.

Later, the 2nd World Assembly on Ageing was organized by the UN in Madrid, Spain between April 8-12, 2002, and this forum produced the Madrid International Plan of Action on Ageing (MIPAA). That seemed to represent a turning point for Thailand when it realized the urgency of the situation and the need to redouble efforts in implementation of the action plan and adopting a clear vision of the road ahead. The MIPAA articulated three areas of focus for the action plans: 1) Elderly and development; 2) Elderly with good health and well-being, and 3) Elderly who have confidence that there will be a supportive and suitable environment for senior citizens.

As a member of the UN, Thailand is playing its part in implementing its vision of what needs to be done. There is the 1st National Plan on the Elderly as cited above, the 2nd National Elderly Development Plan (2002-2021; Revised in 2009); and the 2003 Elderly Persons Act (revised in 2010), as a roadmap for the way forward.^{5,6}

Although Thailand has been an aged society for a period of time (i.e., since 2005), the programs for the elderly in the past have been considered less successful than they should be. Less than half of the indicator targets for strategies under the 2nd National Plan on the Elderly (2002-2021) have been achieved. In addition, there are stubborn problems and obstacles which are impeding progress, just as the number and needs of Thai senior citizens is increasing.⁷

The Ministry of Social Development and Human Security (MSDHS) has successfully persuaded the Cabinet to place the “Aging Society” as a national agenda item (as approved on December 4, 2018). The Cabinet set the immediate objective of the agenda as the integration of work between various agencies in the public, private, and civil society sectors with the common goal of promoting good quality of life in older age.⁸ However, the level of collaboration has not been optimal, especially in the integration of databases. Thus, there is a lack of consolidated information that would give the overall picture of what is happening with Thailand’s senior citizens and the trends going forward. The most important need at the moment is to create a sufficient number and type of personnel to help accommodate the growing population of elderly, and these personnel need to have an understanding of the government’s elderly development plan and vision.

Thailand’s 10th National Economic and Social Development Plan (2007-2011) includes a special focus on the aging society. The plan calls for measures to help older working-age citizens to save more for retirement, and introduce plans for long-term care. There will need to be support for social activities of the elderly, ensuring that communities monitor and support the elderly in their neighborhood, and protect the social rights of senior citizens.⁹ Such policies and plans will have to be adjusted to align with demographic trends and keep pace with the socio-economic changes in Thailand. The 10th development plan can be considered a watershed moment when the Thai government started to seriously embrace the challenges of caring for the elderly over the long-term.

Thailand and its cooperation with ASEAN on the elderly program

Thailand’s action in the past can be considered as preparation for when the Thai population will become a complete aged society, and to ensure quality of life and good health of its senior citizens. In 2019, Thailand has cooperated with ASEAN on the active aging agenda, whereby by General Prayut Chan-ocha, as Prime Minister and annual chairperson of ASEAN, suggested that Thailand establish an ASEAN Center for Active Aging and Innovation or (ACAI). This suggestion was announced at the annual ASEAN summit, and the Prime Minister proposed that Thailand start as host of ACAI given its readiness and vision for the task.

In proceeding to establish ACAI, Thailand held a meeting to prepare for the opening of the Center, first in July 2019. Participants included representatives from organizations related to elderly programs and issues across the social, economic and education dimensions. The objective was to discuss the current situation, and what new policies were needed at the ASEAN level, using the mechanism of the ACAI to help brainstorm and work out the details. A second preparatory meeting was held with representatives of the ten member countries. This event was called the “Partnership Meeting of ASEAN’s ACAI, during August 7-9, 2019. Participants presented the situation and policies of each ASEAN country, and discussed issues that needed joint advocacy at the regional level. There were experts from the health, social, and economic fields to share information and ideas. There were also representatives from partner nations of the ASEAN Community, including China, Japan, South Korea





and the Asia-Europe Meeting (ASEM). The participants summarized the deliberations into the following issues which the ACAI Center could spearhead: (1) Savings and the insurance systems; (2) Long-term care; (3) Primary care by focusing on community-based services; and (4) Development of a database or resource center to inform policy and innovations in the systems of services for older persons.¹⁰

Thailand launches the ACAI

ACAI was officially launched on November 3, 2019, in conjunction with the opening ceremony of the 35th ASEAN Summit, with General Prayut Chan-ocha (Prime Minister) presiding over the ceremony. General Prayut gave a statement asserting the position of Thailand in supporting sustainability for the ten ASEAN member countries: The Philippines, Singapore, Malaysia, Indonesia, Brunei, Vietnam, Lao PDR, Myanmar, Cambodia, and Thailand. These ten countries have a combined population of 650 million people, and are supported by China, Japan and South Korea as “ASEAN + 3” based on the following principle:

“ASEAN needs a new paradigm for economic growth that is dynamic, sustainable, and inclusive of all parts of the region so that no one is left behind. This paradigm must give importance to the development of human capital in tandem with environmental protection.”¹¹

The holistic approach to sustainability in this paradigm covers the following: (1) Caring for the elderly in the social and public health dimensions; (2) Enhancing economic potential; and (3) Promoting a favorable

environment, including development of architecture and applying science technology and innovation to promote sustainable and sufficient quality life, culminating in an ASEAN community that is caring and sharing.¹²

The ACAI has the following five missions that promote cooperation in support of the elderly between ASEAN member countries and various partners, regionally and globally:

1. Serving as a focal point for knowledge sharing for improved elderly care;
2. Being a center for joint training among ASEAN members to build capacity of personnel to return to take care of the elderly in their home countries (capacity training)
3. Being a forum for presentation of the policy on the elderly to governments of different countries using the empirical database (evidence-based policy advocacy)
4. Being the data center that will monitor the situation of the elderly, including various activities conducted through the center;
5. Supporting knowledge that is generated from research and innovations that are mobilized to support policy and services of ASEAN member states.

The Thai government has assigned the Department of Medical Services (DMS) of the MOPH to take the lead on behalf of the ACAI agenda. Accordingly, the DMS planned the “International Conference on ASEAN+3 Geriatric Medicine and Gerontology 2020” to be held during March 25-26, 2020 with the theme of “Welcoming the Aging Society of ASEAN.” The agenda for the conference included a presentation of a summary of operations from the ACAI

PREP Meeting: ASEAN situation, policy for older persons, and advocacy issues for ACAI, including a forum for discussion of health, social and economic issues, and innovation in preparation for the aging society in ASEAN countries. *However, due to the sudden outbreak of Covid-19, the conference was postponed indefinitely.*

Guidelines for the operation of the ACAI

The creation of the ACAI is a concrete way to spur countries to plan for human security. The role of the Center is to help the population of older persons in the ASEAN region to be as self-reliant as long as possible while enjoying quality of life. This should be a solid investment in the human resources of the ASEAN community which is a people-centered approach that leaves no one left behind as it looks toward the future.¹³

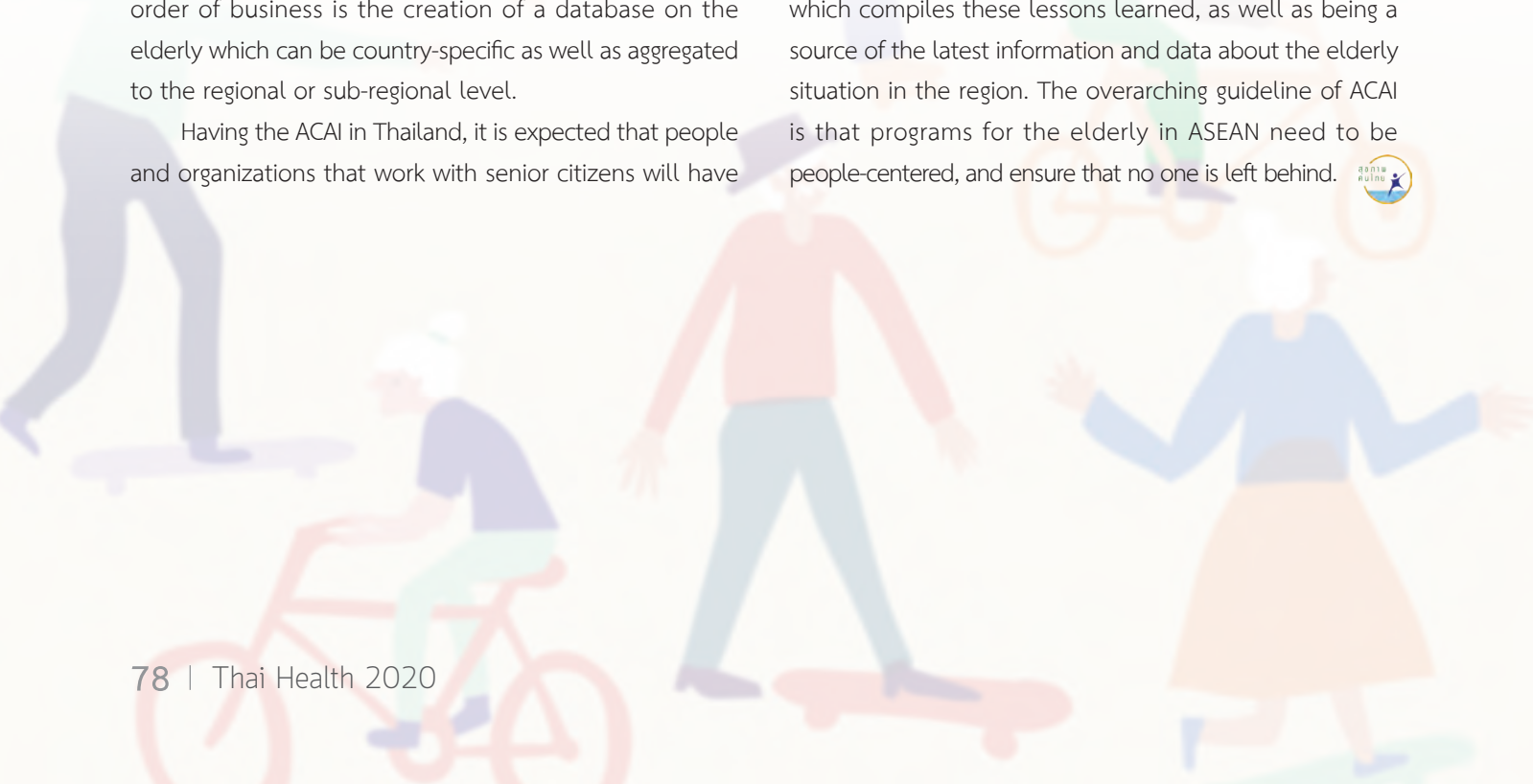
Thailand has been chosen as the location of the ACAI, and that presents a formidable challenge. The Thai MOPH has been designated to take the lead in operating the Center, and the first order of business should promote the continued collaboration of member states to exchange and discuss common issues, and identify the most pressing needs of senior citizens that are common among multiple member countries. It will be important to have a mentor country for societies that are just starting to become an aged society. That way, they can build on the experience of the countries which have already had to confront the needs of a growing population of senior citizens. A second order of business is the creation of a database on the elderly which can be country-specific as well as aggregated to the regional or sub-regional level.

Having the ACAI in Thailand, it is expected that people and organizations that work with senior citizens will have

first-hand access to the latest knowledge, news and technology on caring for the elderly directly from the Center. That will help these organizations provide standard care, both physical and psycho-emotional, and ensure as a stable lifestyle as possible in various aspects of retirement. Senior citizens need to be proud and dignified to have reached advanced age, and they should feel like they are still valued members of society and not a burden on their children or the community. In addition, the ACAI will help Thailand to get a first-hand look at the situation in other countries in the region, and that will help them anticipate the changes and challenges that they may face in the near future. By working together to formulate policy and plans, ASEAN member countries can enjoy economies of scale instead of each country having to develop their own guidelines and work plans from scratch.

Summary

Countries in the ASEAN community are currently facing the prospect of becoming complete aged societies in the near future. The establishment of the ACAI is a way to spur ASEAN member countries to start preparing now, if they have not already done so, to lay the foundation for security of their senior citizens. A key challenge for the ACAI is to encourage countries to share and collaborate so that all can apply lessons learned and avoid repeating mistakes that partner countries have made in trying to accommodate a booming population of elderly. This will require establishing a database and resource center which compiles these lessons learned, as well as being a source of the latest information and data about the elderly situation in the region. The overarching guideline of ACAI is that programs for the elderly in ASEAN need to be people-centered, and ensure that no one is left behind.





Walking and Running for Health: The Booming Sports Bussiness Era

Kornkanok Pongpradit

Thailand's overall sports business in 2019 increased by 6–7% year on year, in line with consumer behavior trends with heightened awareness and attention to health care and exercise. The prevalence of Thais exercising and playing sports increased to 24.4% in 2018. That is, approximately 1 in 4 of Thais (16.03 million people) choose to exercise and play sports, with walking and running for health leading the way.

During 2019, many types of sports businesses were clearly growing both in sales and revenue through various channels and media. The Department of Business Development expected that the sports business in 2019 would expand by approximately 6% from the previous year, in accordance with consumer behavior trends, with heightened awareness and attention to health care and exercise. Sports attire has also become a fashion statement, and the market in sportswear is thriving. Engaging in sports are encouraged by campaigns and continuous support by the government and private agencies in various areas such as football leagues, boxing, and other activities which involve healthy exertion.¹

Popular sports and exercises from past to present

If looking back in time, the fads and trends for different types of sports activities of Thais has ebbed and flowed. For example, in 1981 a group of joggers was

organized. Dr. Udomsilp Srisangnam who led a gathering of over 80,000 runners at the event called “Sky Run to Honor the Monarchy” (Royal Marathon-Bangkok). In 1987², Dr. Krisada Banchuen published a book about running in particular,³ and there was a burst of interest in tennis when “Super Ball” Paradorn Srichaphan and “Tammy” Tammarine Thanasukarn rose in the professional tennis world rankings. Golf became more popular after many successful Thai professionals competed at the international level, following the popularity of badminton which had a number of top Thai competitors, both male and female. According to May Ratchanok Intanon, many parents are interested in sending their children to certain schools in order to have the opportunity to excel at sports.

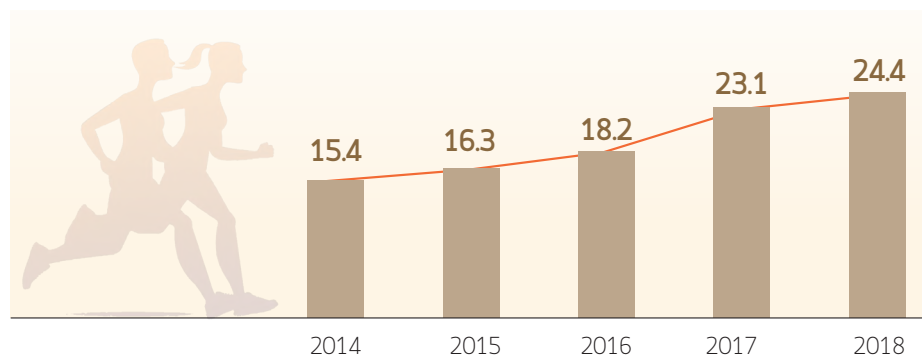
However, the popularity of various sports, as mentioned above, has not really translated into a “boom” in the industry and sports business. This may be due to the limited sporting events and opportunities, especially for those interested in just trying out a new sport. The

number of sports enthusiasts nationally is also small as a proportion of the total population. This may be due to equipment restrictions, the cost of playing a sport, or having a place to practice a sport.

That said, the popularity of running/jogging activities for health of Thais has increased significantly. Nowadays, people of all ages turn their attention to power walking and jogging. Data from surveillance surveys of physical activity of Thais over the past shows the increasing trend

in this phenomenon. The rebound of the number of Thais exercising and playing sports which involve vigorous movement has increased every year, from 15.4% in 2014 to 18.2% in 2016 and to 23.1 and 24.4% in 2017 and 2018, respectively. At the time of this report, approximately 1 in 4 Thais (16.03 million people) are choosing to engage in regular physical activity by exercising and playing sports by walking - running for health.

Figure 1: Percentage of Thais exercising for health by walking-jogging during 2014-18⁴



Source : Thailand Physical Activity Knowledge Development Centre (TPAK),
Institute for Population and Social Research Mahidol, University

This walking-running trend is becoming more widespread throughout the country. In 2019 alone, there were as many as 200-250 health running events per month or about 3,000 per year. This can be considered a unique phenomenon which has never occurred like this before in Thai society. Small and medium events attract approximately 1,000 - 5,000 people each. Such small-scale events are expanding to include the district and sub-district level. Larger events include provincial-level runs such as ThaiHealth’s Chombueng Marathon, Bangsaen Marathon, Amazing Thailand Marathon Bangkok, Phuket Marathon, Chiang Mai Marathon, etc. There can be tens of thousands of people⁵ who join these events such that, at present, there is not less than 15 million Thais who have participated in these running events for health promotion and other good causes.

Statistics of the Thai Jogging Federation show that, in 2007, there were only 5 million runners in Thailand. That means that, in the past ten years, the number of Thais who are interested in healthy walking and running activities have increased by approximately 10 million people.



Thairunning.com

In addition, government, civil society and local administrative organizations also encourage exercise in both walking and running at the community level throughout the country such that the popularity of the walk-run trend has become a movement.

Dr. Pairoj Saonuam Director of the Office of Health Promotion in Health Service System of ThaiHealth, said that, nowadays, Thais are starting to spend more time maintaining their health through exercise. Fully 70% primarily exercise with walking and/or using bicycles, and that is one goal of ThaiHealth as part of a strategy to reduce sedentary behavior. This can also help address socio-economic and environmental problems. There has been research on this topic, for example, in the Soi Ngam Du Phli neighborhood of Sathorn District in Bangkok, Hat Yai District, Songkhla Province, Na Thawi Subdistrict Municipality, Na Thawi District, Songkhla Province, Ranong Municipality, Ranong Province, Phitsanulok Municipality, Phitsanulok Province, Trang Municipality, Trang Province, and strengthening walking or biking for cultural tourism in Chiang Kham District, Phayao Province, among many others.⁶



Walking and running for health: Booming Sports Business

If just considering the sports business dimension, in each major running event, the organizer must provide sports shirts to the participants, souvenirs, meals, and beverages. In another corner, the runners themselves have to be prepared, using various equipment such as running shoes, warm-up suits, and running jerseys, or technological equipment used in running. This phenomenon is a boon to the sports business sector, which has been growing and expanding tremendously over the years.

From the information in Table 1, it can be seen that, during 2017-2019, the products with the highest growth rate are products in the sport shoes category (expansion of about 43%), followed by sports clothing (expanded by approximately 22%) resulting in the overall rate of expansion of the products in the sports related group by nearly 60%. The value of imported products in the sports gear group

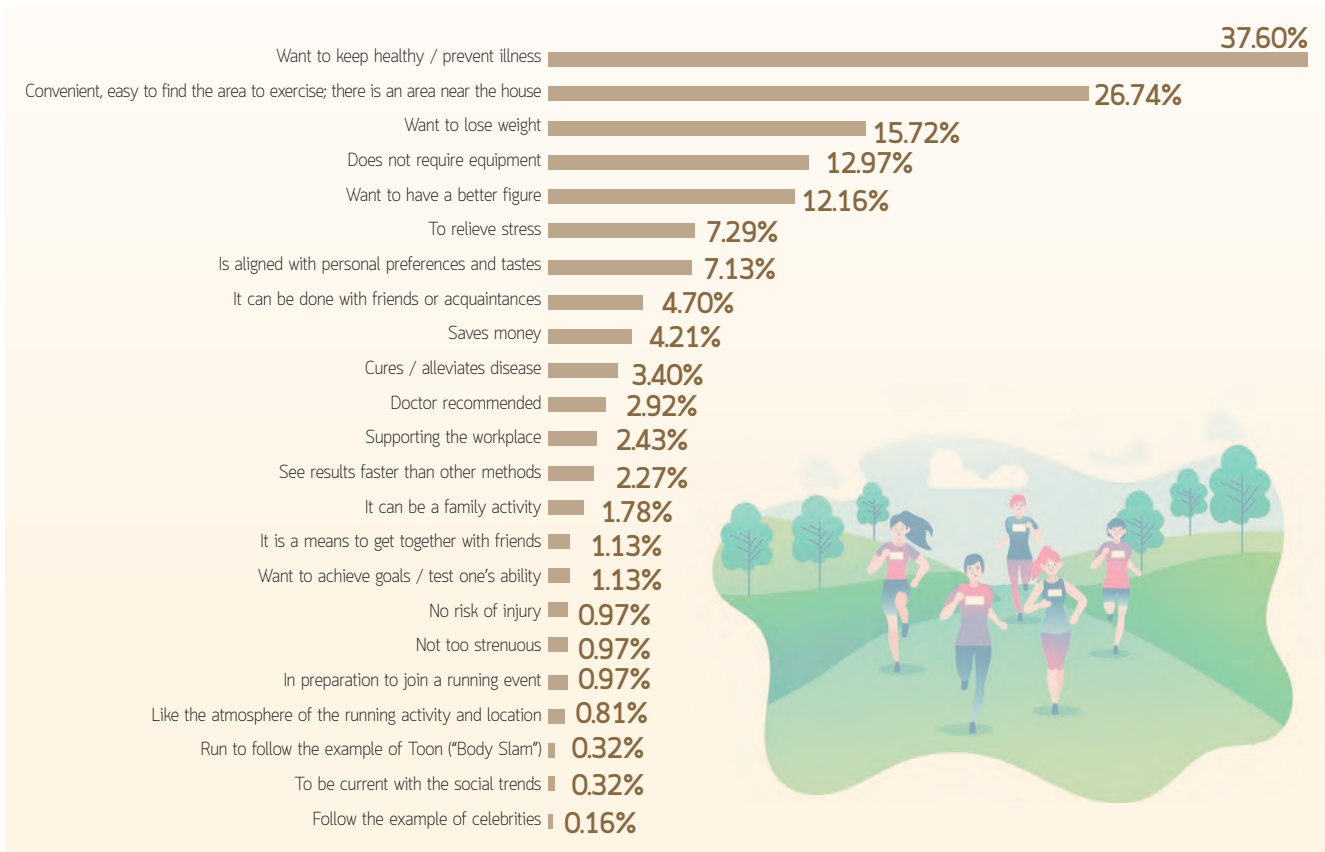
Table 1: Import value of important sports goods and equipment: 2017-2019⁷

product	Million baht value			Expansion By year (%)		
	2017	2018	2019	2017	2018	2019
1) Outfits	5,418.74	6,951.78	8,451.09	8.61	28.29	21.57
2) Shoes	3,168.16	4,509.98	6,470.50	6.80	42.35	43.47
3) Equipment	4,908.35	5,518.24	5,071.43	-1.67	12.43	-8.10
Total	13,495.24	16,979.99	19,993.02	13.74	83.07	56.94

Source : Information and Communication Technology Center Office of the Permanent Secretary In collaboration with the Customs Department

totals nearly 20 billion baht. The market value of business and sporting goods in Thailand in 2018 is estimated to have had a value of up to 120 billion baht and is expected to grow at least another 5% with the current rate of expansion. This increase in the sports business sector is occurring in tandem with the increased level of exercise. There is more demand for related products, whether it is shoes or sportswear, and there are products designed specifically for certain sports to the extent that they are becoming a fashion statement.

Figure 2 : Reasons for choosing to exercise by walking-jogging for health: 2018



Source : Thailand Physical Activity Knowledge Development Centre (TPAK),
Institute for Population and Social Research Mahidol, University

Why do Thais like walking-running for health?

In addition to the promotion of exercise through various media of the sports business, just considering the campaigns for health through sports and physical activity, it can be said that this is a time to let “100 flowers bloom.” This is especially the case for walking-running for health that has received the unprecedented attention of the public. The results of a survey show that most of the reasons for this trend are related to internal motivation, heightened health awareness, wanting to be healthy and have a healthy body, wanting to be resilient against common illness, and wanting to lose weight and be in good shape. People see the advantages of jogging/power walking as an activity that can be conveniently performed in terms of space and amenities that are nearest to home. There is no need to use complicated or expensive equipment or tools. Interest has also been stimulated by celebrity marathon events (see Figure 2).

Summary

Today, one can see pictures of healthy runners in the park, open areas, or along roads in different villages, where walking-running is a morning or evening routine. The phenomenon of exercising for health has created a new dimension of physical activity which is sure to impact positively on the health of the nation. When so many people put on their sports shoes to go for a walk or jog, this can be considered a transition to a new lifestyle and quality of life. At that moment, the risk of non-communicable diseases (NCDs) including obesity starts to decrease. All of this healthy movement will help reduce the preventable expenditure on chronic illness and other debilitating conditions. Thus, the trend in walking-running for health, aside from creating benefits for the industry and business in sports, also has a direct positive effect on the personal level of each participant. Taken as a whole, these exercise enthusiasts are helping to make Thailand a healthy society, with tremendous savings in health care costs, among many other benefits.





E-Sports: Gaming or Sports for Transnational Business?

<https://www.alleduguide.com>

E-sports is a video game competition that is popular with gamers around the world. E-sports can create considerable income for gaming companies as well as the players. The lucrative profits have led to the creation of many gaming-related businesses, such as the sale of equipment and products used in playing games that enhance the experience of playing games to be more realistic. E-sports has grown tremendously amid the questioning of whether it is a real sport or not. Is e-sporting a sustainable career? To what extent do e-sports adversely affect game addiction? And how will e-sports change the attitudes, values, and behaviors related to the health benefits of sports?

There is also a trend of global criticism towards e-sports regarding the age of the players, impact on adolescent brain development, online gambling, and how to tax revenue from gaming companies who have no physical office building or street address. Given all the potential adverse effects, the major question is this: Is e-sports promotion worth it or not? This article will discuss the growth and development of e-sports at the international level and in Thailand. This includes a review of health aspects of e-sports, the views of the various parties regarding e-sports, and ideas of civil society on reducing the negative impact of e-sports in Thailand.

What is e-sports?

Wikipedia defines e-sports as “...a form of competition using computer-mediated electronic systems through video game games, where serious players participate in the competition through computer-human interface, and compete for prize money and fan base of those observing the competition in

real time...” Oxford English Dictionary defines e-sports as “an activity involving competition in playing a video game, with many professional competitors and a live audience.” Cambridge Dictionary defines e-sports as “Computer gaming activity with other players on the internet, which is often played to win prizes and is broadcast for viewers to watch via the internet. Competitions are sometimes organized in a large venue.”

The website dictionary.com defines e-sports as an “Activity or tournament, especially video game competition, with professional gamers.” The Telegraph Newspaper website explained e-sports as “...professional video game competition in which there are losers, winners, and tournament activities each year. Commonly, many players from around the world compete.”

It can be seen that the definition of the word “e-sports” arose from the video game industry and has become a profitable business in and of itself. Currently, gaming competition activities have lucrative prize money, and are gaining popularity and support from the conventional business

sector. Private companies have organized competitions to attract online game players.

In the context of Thailand, the problem with the definition of e-sports as a “sport” means that it is eligible to receive certification of the Thai Ministry of Tourism and Sports.¹ Thus, in 2018 there was a public debate about classifying e-sports as a legitimate sport since there is no universal norm for what is and is not a sport. The gaming business has argued that electronic sports are non-physical sports as a compromise position.

E-sports development

The beginning of e-sports was in 1972 when the arcade game Pacman was showcased by Stanford University students as an organized competition. This was held in a laboratory environment and they called the competition “Intergalactic Spacewar Olympics” by using the space war game as the field of play. The prize for the winner was a one-year subscription to Rolling Stone Magazine. A decade later, video gaming had become ubiquitous in households, especially with the advent of computers designed primarily for use as gaming platforms. Players were family members or groups of peers, just as people used to play board games in the pre-digital era. The advent of the internet began to change the way computer games were played since people from all over the world could compete and form teams with virtual teammates.

By the end of the 20th century, the e-sports business burst into the “open era” with South Korea providing a major boost to the fledgling industry. From 1995 to 2005, South Korea invested over \$US32.5 billion in establishing a nationwide internet system, essentially making the entire country a “hot spot.” Then, and even now, South Korea had the highest internet access rate in the world as well as the highest data transmission speed in the world. South Korea had very cheap internet fees, and salons and internet cafes rapidly became a gathering place for teenagers to access games. In the early 2000s, a community of avid computer game players started talking about “**gaming skills**” especially in the context of playing the “Starcraft” computer game which is typical of a genre of gaming that requires tactical skills, and usually takes place in a science fiction context. The increasing number of players on this, and other, gaming platforms began to refer to this as a formal competitive activity, and leagues were formed, with local tournaments at popular internet shops. These tournaments expanded to large hotels and even



sports stadiums so that fans could watch the gamers live. In 2004, Busan, South Korea held a Starcraft tournament with professional players, and it was during that time that players around the world realized that South Korea was the international capital of e-sports.

In 2000, South Korea had introduced gamers to formal competition through the “World Cyber Games” which represented the first international competition with 17 countries participating. The competition was branded as a form of “Olympics” for e-sports gamers. Competition was held in five of the most popular games: Age of Empire 2, FIFA 200, Quake III, Arena Starcraft Warbler, and Unreal Tournament. That event became a regular extravaganza, and participation grew to over 800 gamers from 70 countries in 2013.

The book “Inside the E-sport Industry” by Carla Mooney explains that e-sports activities have their genesis in the 1970s when people still played arcade games, and competed with each other in the form of clubs. At that time, arcade gaming was not considered a sport. However, as an indication of how the genre had grown, by 2015, there were more than 6,000 fans attending a single e-sports competition in Madison Square Garden, New York City, which hosts professional basketball games. In 2016, there were an estimated 148 million gamers around the world participating in e-sports activities, and the number has been growing by more than 10% each year.²

The Sports Committee of Thailand’s Ministry of Tourism and Sports accepted the determination of the Asian Olympic Council that “e-sports is a sport that can be registered, and leagues can be established as a sports association.” Thus, the Sports Authority of Thailand Act, B.E. 2558 was amended

on July 27, 2017, to clarify that e-sports is a sport that has an international sports federation certification, with international competitions, and is a separate issue from the problem of video game addiction.

The dream job of Thai children

The documentary “All work, all play” (2015)³ revealed that, although e-sports gaming is popular and attracts more and more young people each year, actually the occupation of e-sportsperson is not sustainable. The peak age for excelling in e-sports is between 20 and 21 years since that is a period of heightened brain development, which increases sensitivity, and maximizes reflexes, which are key attributes in making the moves required during video game action. However, the brain starts to slow down between the ages of 25-26 years and, thus, gaming performance ebbs. In addition, being an elite gamer requires practicing up to 8-10 hours per day. There are also exhibition events with pay-to-play rewards, financial contracts with sponsors, and eligibility for prizes from competitions. For this reason, formal e-sports events require that players are age 18 years or older.

The Adecco Group Co. conducted a survey called “The dream job of Thai children” for the year 2019, which sampled 2,684 Thai children age 7-14 years to ask what occupation they aspire to most. The top ranked profession was “doctor” with the explanation that medicine is a profession that helps one to gain merit and have a good income. This preference overtook the previous top-ranked job of “teacher” which dropped to 2nd place. The 3rd ranked occupation was “professional athlete” such as football (soccer) player. The 4th ranked career was to be in the military, while, amazingly, the 5th ranked occupation for male and female Thai children age 7-14 years was “e-sports athlete or professional gamer.”⁴

Can e-sports wean youth off an addiction to video games or do they cause youth to become addicts?

Data from the Department of Mental Health revealed that, since 2018, the number of game-addicted patients increased by 1.5 times and further increased by 6 times in 2019. Children attending game-addiction treatment programs were as young as five years.⁵ Due to the lack of an organized prevention program to suppress unhealthy gaming, youth media literacy is still low, though probably not as low as their parents. In other words, there is a general lack of awareness in Thai society of the negative effects of gaming and online

media. Instead, parents are complacent and complicit in this problem by allowing their children to amuse themselves with games on mobile phones or other hand-held devices, even in their pre-school years. Some parents themselves set bad examples by being constantly checking their cell phones. These factors are boosting the prevalence of video game addiction in Thailand to unacceptably high levels. On the other hand, e-sports business operators are trying to portray organized gaming as a deterrent to video game addiction. They argue that e-sports teach children discipline and self-control which can be applied to other areas of daily life, and thereby protect youth from addiction.

The WHO notes that those who fall into electronic game addiction **can develop this affliction either by playing on- or off-line video games. Precursors include an inability to control oneself or divide one’s time, or have one’s screen time limited to a schedule. Increasingly, the addict will ignore basic daily activities necessary for a healthy and complete life, and spend more and more time playing the video game of choice.** This can culminate into real health problems and behavioral abnormalities which can become a dangerous pathology which threatens the family or event society. A child whose behavior and schooling is disrupted by gaming for a period of one year are considered to be addicted, while some with a severe case continue with this addiction for more than a year.

The Department of Mental Health issued a warning to parents, guardians and related parties that playing video games may adversely affect a child’s health. The Child and Adolescent Mental Health Rajanagarindra Institute, together with the Faculty of Medicine of Ramathibodi Hospital and the Faculty of Medicine Siriraj Hospital, collaborated on a research project **entitled “Problems of Game Addiction in Thailand 2015.”** They found that 13-17% of Thai teenagers are addicted to electronic games, or approximately 1.3-1.6 million youth. Furthermore, the trend is increasing





<https://game-addictions.weebly.com>

due to increasing popularity and industry promotion with advertisements, and the lure of being an “e-sports athlete.” This instills unrealistic aspirations among youth that they could actually achieve stardom in the e-gaming world. However, the data show that the odds of making a living in the e-sports world is virtually nil (0.00007%).

E-sports in school

Currently, e-sports courses are being offered in Thai educational institutions, e.g., at the bachelor degree level in the Faculty of Science and Technology, Program in Creative Digital Technology and Program in Innovative Digital Design, at Thammasat University, the Program in Multimedia and Game Development of the Faculty of Information Technology at King Mongkut’s Institute of Technology Ladkrabang, Bachelor of Technology (Computer Game Multimedia) of College of Digital Innovation and Information Technology at Rangsit University, Program in Game and eSports Business at the University of Thai Chamber of Commerce, Program in eSports Management at Suan Sunandha Rajabhat University and the study area of e-sports at Sripatum University.

In addition, the gaming business is also conducting activities in the school setting itself. This can take the form of promoting competitive video games and e-sports competitions for prize money, while disguising these activities as promoting knowledge through educational games. The business side of e-sports is penetrating educational institutions of Thailand, ranging from high school to undergraduate and graduate education.

The problematic issue is whether promotion of e-games in the school should be allowed or not. The thinking is that the school is an area that should focus on academic learning, discipline and training in life skills, developing the right attitudes, and being aware of risks. However, if the gaming companies and their affiliates are allowed to encourage school-age children

to spend more time with electronic games, this will inevitably instill the mindset in youth that they can pursue e-sports as a viable occupation. The fact that this is a nearly impossible dream means that those youth are being set up for failure and deterred from pursuing more realistic vocational options.

For younger children, the obsession with virtual experience in the online world means that brain development could be impaired by lack of enough exposure to the physical world. That said, there is the persistent misconception among school administrators and teachers that e-sports can prevent youth from becoming addicted to video games, and this is probably a symptom of the effective advertising and promotion of the e-sports industry. Plus, as noted, pursuing a career in e-sports is an unrealistic dream, and that prevents youth from having alternative occupational options. Youth need to understand the danger of “putting all their eggs in one basket” in pursuing a single occupation they see as fun and rewarding. Instead, today’s youth need to understand that they should follow a career path that provides economic security, while also pursuing avocations and hobbies which provide entertainment and stimulation. The two choices are not mutually exclusive.

E-sports in the Health Assembly: All stakeholders have the role to play

In 2019, the National Health Assembly included the issue of e-sports on its agenda, as part of an exploration of how to regulate this sector. It is recognized that e-sports are becoming very popular with youth, and many schools have established e-sports clubs, and even universities are setting up e-sports courses and departments. Youth have interest in this field both as players and commentators (i.e., e-sportscasters). Thus, it is a social movement that cannot be reversed or eliminated. In this regard, youth should have a voice in how society intends to control e-sports. There should be open forums to discuss the issue from a variety of perspectives. A key actor in this should be the E-sports Association of Thailand which is an organization that oversees the technical aspects of e-gaming, and encourages the implementation of measures to keep the sector responsible and safe. Thus, a resolution was drafted on “E-sports: Social Responsibility for Child Health.”⁴ The expectation is that the E-sports Association of Thailand will join forces with the Sports Authority of Thailand and relevant ministries to formulate guidelines or measures on enforcement

of e-sports activities so that they are safe, fair, transparent, open and constructive in order to protect children and youth, both as fans and contestants in e-sports competition.^{6,7,8}

Assoc. Prof. Adisak Plitponkarnpim, MD., Director of the National Institute for Child and Family Development of Mahidol University, presented a proposal at an academic forum on “Business Ethics Proposal for E-Sports to Reduce the Impact on Child Health and Development.” Dr. Adisak observed that, currently, there is a misconception that e-sports are a legitimate sport, and that it is acceptable to target youth to become engaged in this field. Yet, there is no regulation or monitoring of how e-gaming is negatively affecting the behavior and health development of children.

The most popular computer games usually involve a struggle to vanquish imaginary “foes,” often in violent ways. Yet the technology ensures that children and youth spend hours playing until many become addicted. This has myriad detrimental effects for the child, their family, and potentially society at-large. Contrary to the claims of the e-sports industry, e-gaming and video game obsession is causing the new generation of Thais to lack analytical thinking and self-control, and that is not in line with the 20-year national strategy that all ministries are focusing on to promote the development of skills that youth will need to navigate the 21st century. In this regard, the relevant agencies which work with children and youth need to lobby the E-sports Association of Thailand and e-sports businesses to implement the following seven measures to prevent harm to children and youth from electronic gaming in all its forms:⁹

(1) Refrain from portraying e-sports as a conventional sport because it has not been internationally accepted as such, nor does Thai society view it that way. In particular, the medical sector does not accept that e-sports is a “sportive activity.” Thus, the relevant state agencies, such as the Sports Authority of Thailand, should use the internationally-accepted definition of e-sports as consistent with information and policies from around the world.

(2) Specify measures to prevent children and youth from unsupervised access to online games, especially children under the age of 13, including access via social media or digital media. The E-sports Association of Thailand and the Sports Authority of Thailand should set the minimum age of contestants at e-sports competitions to be 18 years of age or older in accordance with international standards.

(3) The government must have policies and laws prohibiting holding competition of video gaming in schools, and prohibit promotion and marketing of e-sports business by gaming companies in educational institutions, from pre-school through to the end of secondary school.

(4) State and business agencies, associations, and organizers must have measures to prevent gambling in the context of e-sports, because the state does not currently have measures to thoroughly oversee that activity.

(5) Establish measures to restrict the age of people who play e-games by calling on entrepreneurs, associations, and related government agencies to regulate and check the legal-age access conditions.

(6) Prohibit sponsorship by businesses involved in selling alcoholic beverages, cigarettes, and e-cigarettes in e-sports competition, and prohibit gambling on e-sports sites, domestic and abroad.

(7) Promote media literacy to understand the pros and cons of online gaming and e-sports, help prevent youth addiction to video games, and keep the public informed.

Summary

In 2018, the number of game addicts increased by 1.5 times, and then increased further by more than 6 times in 2019. Addiction treatment centers have found children as young as 5 years who are already inseparable from e-games and electronic devices on which they run. Thailand does not yet have adequate preventive measures to control the e-gaming sector, especially as hand-held electronic devices are becoming ubiquitous for children and youth. These developments are occurring in the context of a struggle between interest groups. There are powerful multinational businesses which stand to reap huge profits from e-sports, and they are trying to portray e-sports as normative and as an alternative to sports that require physical exertion. On the other side is the medical and public health community which has evidence of adverse psycho-emotional effects of e-gaming at a young age, and game addiction. By contrast, the e-sports industry argues that e-gaming can be a career, and a generator of income of individuals and society. Therefore, the National Health Assembly has proposed an agenda on national health through social responsibility of e-sports as it impacts on child health. The proposal of the National Institute for Child and Family Development, Mahidol University should receive priority consideration and implementation.



4 Outstanding Accomplishments for Health

Dr. Viroj Tangcharoensathien and the Prestigious Award from WHO

Dr. Viroj Tangcharoensathien is a health economist with outstanding research results on public health policy which have had an impact on health policy in Thailand and abroad. Dr. Viroj recently received the prestigious “Director’s General Health Leaders” award, conferred by Dr. Tedros Adhanom Ghebreyesus, Director General, of the WHO at the 72nd session of the World Health Assembly in May 2019 in Geneva, Switzerland. Dr. Viroj received this award in recognition of his long list of outstanding academic achievements and positive influence on public health policy development at the national, regional, and global levels. Of special note is Dr. Viroj’s thinking on the universal health coverage (UHC) policy that has had the important effect of increasing rights and access to health services for everyone, without discrimination or prejudice. Thailand’s UHC is a model example for countries around the world to emulate. Dr. Viroj is the one who spearheaded the network between health systems development and health research. He is an agent of change in the Thai health system who helps lay the foundation for the national social security system in 1990 and the UHC system in 2001 in collaboration with Dr. Sanguan Nittayarampong, the first Secretary-General of the National Health Security Office. Dr. Viroj has produced outstanding research results on UHC which provided evidence of its viability and cost-effectiveness. He has proven that the “Gold Card” mechanism can reduce household debt and reduce infant mortality. The Gold Card is a symbol and promise of equal access in the health care system, and the reason why Thailand’s UHC has been lauded globally as a ‘best practice’ case. The Thai UHC also provides hope and inspiration to low- and medium-income countries that a welfare state is sustainable, at least in the health sector.



At present, Dr. Viroj is a consultant for the Office of the Permanent Secretary of the MOPH with a focus on international health. He is also an advisor with the International Health Policy Program. Dr. Viroj completed his medical training at the Faculty of Medicine Siriraj Hospital, and received a doctorate in Health Planning and Financing from the London School of Hygiene and Tropical Medicine, of the University of London.

Over his career, Dr. Viroj received many prestigious awards such as the Sam Adjei Distinguished Public Service Award in October 2018 in Liverpool, England, awarded by the Alliance for Health Policy and Systems Research and the Health Systems Global Network. In addition, Dr. Viroj received the Edwin Chatswick honor in England in 2011 in recognition of his continuous contributions to public health systems.



The Thai Health System Ranks among the Top of Asia and the World

Thailand's health system has been praised by many global institutions as one of top health systems in Asia and a model of excellence internationally. This recognition comes from the likes of Johns Hopkins University and the Nuclear Threat Initiative, who issued a report on the 2019 Global Health Security Index with a ranking of 195 countries in the world. That report listed Thailand as ranking 6th in the world and No.1 in Asia for health security with a total score of 73.2 points (global average = 40.2). Thailand is also regarded as 1 in 13 countries that are most ready to respond to an epidemic. These rankings are based on the following six indicators:

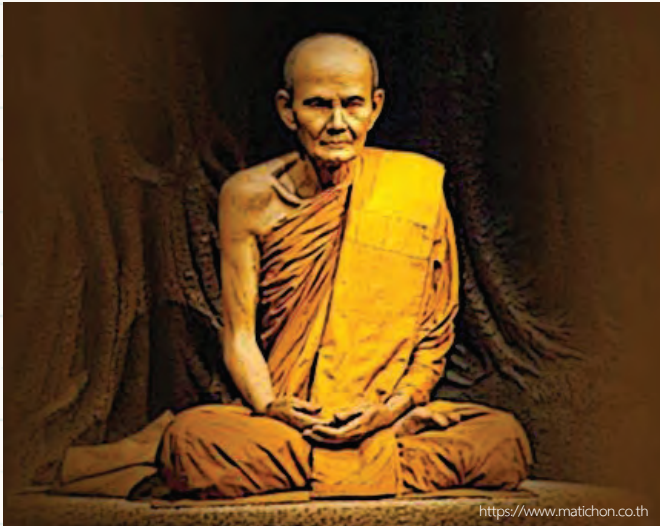
1. Disease prevention: Thailand = 75.7 points, 3rd in the world;
2. The ability to detect diseases and report fast: Thailand = 81.0 points, 15th in the world;
3. Countermeasures and mitigation of pandemic diseases and fast response: Thailand = 78.6 points, 5th in the world;
4. Having a strong and stable health system: Thailand = 70.5 points, 2nd in the world;
5. There is a commitment to develop the country's potential with plans and budget for disease prevention and control, and implemented according to standard international practice: Thailand = 70.9 points, 12th in the world; and
6. Risk of biological threats: Thailand = 56.4 points, 93rd in the world.

In addition, Thailand is also regarded as having the best health system in Southeast Asia by the CEOWORLD business magazine, published in the USA. CEOWORLD regularly ranks the countries with the best health systems and, for 2019, considered the following factors:

1. Public health infrastructure; 2. Efficiency of public health personnel, including physicians, nurses, and other personnel; 3. System costs; 4. Access to quality medicines; and 5. Readiness of the government to manage the system.
- In addition, CEOWORLD also considered other factors such as the environment, access to clean water sources, sanitation system and the control of health risk factors such as reducing consumption of cigarettes and tobacco products and management of obesity. CEOWORLD surveyed 89 countries around the world and found that Thailand has a health system that is the best in Southeast Asia and 6th globally, with a total score of 67.99 (maximum possible = 100.00), divided into Infrastructure (92.58 points); Expert personnel (17.37 points); Expenses (96.22 points); Access to medicines (67.51 points); and Government readiness (89.91 points).

The strong Thai health system has an important foundation that derives from the universal health coverage insurance system and the health service system reform, which has covered decades of implementation. The reforms have produced academic and social institutions to advance the field of public health, and developing quality primary health care which is affordable to the public. The reforms have also established a large number of public benefit organizations.





UNESCO Praises the Revered Thai Monks as Ambassadors for World Peace: Phra Ajarn Mun Bhuridatta and Supreme Patriarch H.R.H. Prince Wachirayanawarorot

In November 2019, the 40th UNESCO General Assembly passed a resolution to certify the celebration on the anniversary of important people and important events in history. Two venerable Thais were honorees of this celebration. One was Phra Ajarn Mun Bhuridatta, in anticipation of the 150th anniversary of his birth (January 20, 2020). The second was Supreme Patriarch H.R.H. Prince Wachirayanawarorot, recognized in anticipation of the 100th anniversary of his death (August 2, 1921). These revered monks are considered important persons in the pursuit of world peace, and Phra Ajarn Mun Bhuridatta and Supreme Patriarch H.R.H. Prince Wachirayanawarorot are the 3rd and 4th Thai monks to receive this honor (after the Supreme Patriarch H.R.H. Prince Paramanujitajinorasa and the honorable Buddhadasa Bhikkhu).

Phra Ajarn Mun was a teacher of Vipassana meditation, respected nationwide by Thais and international adherents. Phra Ajarn Mun acted in strict accordance with the teachings of the Buddha and helped clarify guidelines for the practice of the Dharma, both for the Sangha and laity. After his passing in 1949, many monks continued to serve as devout followers of his practices and traditions. For this reason he is considered the principal figurehead of Wat Pa, International Forest Monastery, even at the present time. Phra Ajarn Mun was a reclusive person, living in moderation, seeking inner solitude, and persevering in the Dharma since the first day he was ordained until the end of life. Phra Ajarn

Mun provided guidance on healing suffering with relief from greed, anger, and delusion. Phra Ajarn Mun preached the path to peace through meditation, resulting in multitudes turning their attention to study the guidelines he laid down. His teachings spread widely, both in Thailand and internationally.

Supreme Patriarch H.R.H. Prince Wachirayanawarorot was the 10th Supreme Patriarch of Rattanakosin. He organized the study of the Buddhist scriptures in the Thai language as part of a bachelor's degree "First-class theologian" which has become a rhetoric book as a text in the introductory course for novice monks, carrying up to the present time. In addition, he established Mahamakut Buddhist College to manage the study of novice monks. He laid the foundation for study of primary education in Thailand, with temples as schools, and monks as teachers. Mahamakut Buddhist College served as a model in the curriculum and teacher training. Prince Wachirayanawarorot helped to improve the administration of the Sangha, leading to the passing of the Buddhist Order Administration Act of Ratanakosin Year 121 (B.E.2445) which was the first Sangha act in Thailand. Prince Wachirayanawarorot was well-educated, and could communicate in many languages including Pali, Sanskrit, English and French. He wrote a curriculum for studying toward a Bachelor's, Masters, and doctoral degrees, entirely in the Pali language. Prince Wachirayanawarorot was the author of over 200 Thai and Pali treatises.



Citation:

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Two Decades of
Thai Educational
Reform: Failures
and Successes



Two Decades of Thai Educational Reform: Failures and Successes

https://www.matichon.co.th/columnists/news_281768

“If you let the people receive a bad education, and let them develop bad habits since childhood, and you punish them for all the crimes they commit based on what they had always learned, this simply shows how you have bred thieves in order to punish them later.”

Sir Thomas More from the Book of Greater Dreams (Utopia) (1516)

Over 500 years, in his immortal treatise (*Utopia*), Sir Thomas More hotly criticized British rule in many aspects, including education, and how that is linked to many manifestations in society, such as livelihoods, peace, tranquility, and moral and legal standards. That relationship is no different from what is occurring in the present day, namely, the status of education is reflected in the status of the host society.

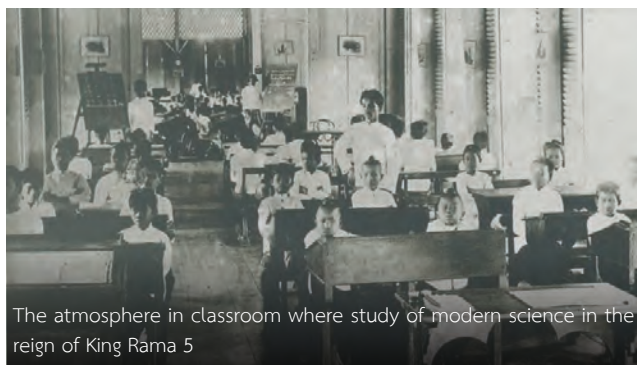
This special article in the latest report on the status of Thai health focuses on the issue of Thai formal education which is the cornerstone of health in every dimension. A sound education means that the person will know how to nourish and maintain good health of the body, mind and intellect throughout their life.

Efforts to improve the quality of Thai education have been going on for over a century. However, it is possible to identify at least four historical educational reform movements, which also coincided with critical changes in the administration of the country. The first reform occurred in the reign of King Rama V and coincided with Siam's independence. The next reform occurred as part of the Citizen's Petition in 1932, which called for development and increased coverage of quality education. The third reform occurred in the wake of massive student demonstrations in October 1973, in which there were calls for

changes in the structure of educational administration, teacher development, and curriculum reform. The most recent reform occurred alongside the economic crisis in 1997 which compelled Thai society to upgrade education to ensure Thailand's economic competitiveness in the 21st Century. This movement was part of the "People's" Constitution (1997) followed by the National Education Reform Act of 1999.

Since the passage of the Education Reform Act, up until 2019, the "reform" process has had two decades of implementation. Accomplishments have included increased access to quality education, decentralization of educational administration, and the active participation of all sectors in the development of education. These advancements are important. However, Thai society is still assessing the quality of education of the nation based on the quality of the graduates that it produces. Some students may feel that they are not moving forward, or are even sliding "backward" relative to other countries in the region that once lagged behind Thailand in education. The objective evidence for this comes from international standardized tests, such as Program for International Student Assessment (PISA) in science, mathematics and reading. In the 2015 round of PISA, Thai students not only scored lower than OECD countries, but also trailed behind Vietnam and Malaysia, despite the fact that Thailand spends as much as its peers on education, or even exceeds per capita or proportional expenditure compared to a number of developed countries.

In addition, each period of educational reform has led by a person considered to be a figurehead who was usually a revered thinker, scholar, or educational philosopher. Despite this public support and leadership, educational reform has not been as smooth and progressive as it should be.



The atmosphere in classroom where study of modern science in the reign of King Rama 5

https://www.silpa-mag.com/history/article_10847

Members of Thai society should help each other to ponder what are the main obstacles to significant reforms related to development of the potential of Thai youth and the future of the country's human resources that will lead Thai society to prevail in the midst of rapid change and globalization? Indeed, how can educational reform ultimately be effective?

4 Eras of Thai educational reform

The importance of education in Thai society is reflected through the lessons and specifications for people to receive a formal education, and that is a common theme in each era. This predilection can be traced to ancient texts as the "Jindamanee" which is theorized to have been authored by Phra Horathibodi during the reign of King Narai the Great. Those texts became the model that was studied in various eras, including the Jindamanee version of the King Borommakot edition; the H.R.H. Prince Paramanujitajinorasa edition, the H.R.H Krom Luang Wongsra Dhiraj Snid edition, and the Dr. Bradley's Edition.¹

When it came to the reign of King Rama V, there were six texts of Phraya Sri Sunthonwohan, and these formed the basis for the emergence of a formal curriculum and a system of teaching and learning. To a certain extent, changes in each period caused the educational system to be out of sync with the opportunities and needs of society. This disjunction led to the "reform" movements, which often meant a large adjustment, especially in terms of philosophy, structure, and system.

In modern Thai history, it appears that Thai society has implemented educational reform four times. Each time there were distinct factors leading to different reforms. The 1st reform era was born about 150 years ago in the reign of King Rama V (1853 - 1910). That time was a period of a strong Thai society which successfully stood up to the challenge of colonialism from the West. This spurred the ambition of Thailand to be at least as intelligent so as not to allow the Western nations from claiming that their imperialist motives were to 'educate the masses.' The reforms at that time involved a shift of the center of education from the temple (Buddhist monastery) to the government, or "Secularization." This led to the establishment of the Ministry of Instruction in 1892, which was responsible for education, religion, nursing, and museums. That can be considered a structural change

for the first time and also a setting of standards regarding education, course placement, and curriculum improvements, as stated in the Royal Code:

“Members of the Royal family, beginning from my children, and the lowest people can access the education equally regardless of nobility and peasantry. Education shall be the first priority and subsidized”

This proclamation was given at the Royal Council for civil servants on the occasion of the Royal proceedings to observe the Phra Tamnak Suankularb School in 1884. **This was the first articulation of a policy of education equality and education for everyone (i.e., universal education).** Clearly, the concept of education management in that era was influenced by the education system in England and, to some extent, in Japan. In addition, the establishment of a girls’ school by female members of the Royal family and missionaries in Bangkok and the districts **reflect efforts in the development of formal education for women, starting 150 years ago.**

The 2nd reform was initiated by the People’s Party in 1932, including some advocates who were foreign educators. That era coincided with a change of national administration from an absolute monarchy to a democracy. Thus, this 2nd reform can be said to be first to occur a democratic government. At that time, education was listed as one of the six principles of governing the country: *“[The State] Must provide full education to the people.”* The intent was to use education as an important tool in human development, and as a requirement of a healthy democracy in which the citizens must be able to read and write. They must have sufficient knowledge to exercise their constitutional rights and self-government through elected representatives who sit in the House of Representatives. At this time, the Primary Education Act, which was passed during the reign of King Rama VI, became effective throughout the country. The Act designated the Ministry of Interior to administer education outside of Bangkok, and this immediately increased access to education of people in provincial urban and rural areas. This also required an increase in teacher training to support expansion of education to provinces and districts.

“To improve the general educational qualifications of the populace requires a cadre of teachers of all types and classes until enough full coverage can be assured.”



(Government education policy announced on December 20, 1932. Chao Phraya Thammsakmontri was the Minister of Education).

The reforms included vocational education initiatives in agriculture, industry and commerce to create a career path for all members of society. In addition, there was expansion of higher education with the establishment of universities in regions to promote educational equality, and so that students would receive just as rich an education as those in Bangkok. **It can be said that the decentralization of education to areas outside Bangkok and the focus on vocational education are key contributions of this 2nd reform period.** However, it should be noted that the division of educational development burdens between the Ministries of Education and Interior which, despite the necessity of this in the context of that era, later became a source of inequality in Thai education, which widened over the years.

The 3rd reform took place as a consequence of the student-led uprising for democracy, which came to a climax in October 1973. The overthrow of the military government resulted in the installation of a caretaker administration led by an academic and jurist, Prof. Sanya Dharmasakti as the Prime Minister. An Educational Reform Committee was appointed to meet the demands, and was chaired by another academic, Dr. Sippanon Ketthat. The committee was charged with the task of reviewing the Thai education system and proposing educational reform plans.

The Education Reform Committee proposed the idea of *“Study for life and society,”* along with proposing 10 key points for reform: (1) Adjusting the education system to 6: 3: 3 (Primary 6 years, middle school 3 years and high school 3 years) and integrate education at all levels to be under the



Ministry of Education. Previously, non-Bangkok education was administered by the Ministry of Interior; (3) Decentralize educational management to local government; (4) Encourage the private sector to participate in educational management; (5) Amend the laws related to education; (6) Develop improved teacher training systems; (7) Reform the teaching and learning curriculum; (8) Expand the budget for education investment; (9) Expand educational opportunity; and (10) Develop other related systems which support the education system.

However, the proposal of the Reform Committee as a whole was not approved by the Cabinet at that time, and elements of the reform proposal were vehemently criticized as Communist. Despite the opposition, many of the points issued by the Reform Committee were, in fact, put into practice such as (in 1977) the improvement of the curriculum which aimed at training students to think and analyze more critically, and adjusting the system to the 6: 3: 3 which was particularly advantageous for school-age youth in remote areas in improving access.²

The 4th reform is the latest reform of education and refers to the period beginning in 1999, two years after the economic crisis. This reform was implemented under the 1999 Education Act, which was later amended twice, in 2002 and 2010. It was argued that the 1997 economic crisis made Thai society aware of the effects of globalization, and how Thailand needed to boost education of the new generation if it was to recover economically and compete with the rest of the world. The 1999 Act aimed at solving problems related to low high school enrollment, which had a huge downward impact on the enrollment rate for higher education. In addition, international standardized tests

continued to show that Thai students lagged behind in the STEM fields, especially science and mathematics. Both problems threatened to have a profound effect on maintaining the country's competitiveness and creating innovation in science and technology.

This reform was implemented through five successive governments, starting from the government of Thaksin Shinawatra, which had a relatively longer period than any subsequent government, but was abruptly cut short with the coup in 2006. All subsequent governments had durations of only one to three years and include the governments of Samak Sundaravej, Somchai Wongsawat, and Yingluck Shinawatra that ended with the clash between the "Yellow Shirts" and "Red Shirts." That was when there was another military coup (in 2014) and the installation of the National Council for Peace and Order (NCPO). These political upheavals greatly affected the continuity of the 4th educational reform. Significantly, the Cabinet of the NCPO approved the National Education Act on October 24, 2018. The Act consists of 78 sections which are guided by the following principles: (1) The educational system supports diversity, and differences, and developing the individual from pre-school to life education; (2) Improving the quality of education on the part of the teacher requires the establishment of a fund for teacher production and development. That will help screen the right people to enter the process of development, and selection of suitable individuals. Curriculum and educational management will give priority to emphasizing the capacity to create good and talented people in society; (3) Give independence to the school; (4) Implement systems management that is focused on quality development, not inspection, and use assessment results to develop and drive quality development; (5) Provide a national education plan to be developed by the National Education Policy Committee.

This 4th era of educational reform has lasted for over 20 years and may be considered as the period that has had the greatest impact on educational development, so that the competitive potential of the country's human resources will be able to lead Thailand out of the "middle-income trap" into an era of prosperity and higher incomes, i.e., to actually achieve the vision of "Thailand 4.0."

The dimensions of failure in boosting of quality Thai education commensurate with the budget

Discourses about education in Thai society speak with the same mind, i.e., that education is important to national development. But then most discussions of the problem show dissatisfaction with the quality of education at almost every level, and that is the reason why education reform always calls for an upgrade of the quality of education including mechanisms for quality development. Thai formal education is at a critical stage that requires a paradigm shift, especially when comparing the quality of Thai students with their peers from other countries through international gauges such as PISA which is administered every three years, in which Thai students can be compared with students from 72 member countries of the Organization for Economic Cooperation and Development (OECD). Since 2000, there has not been much media interest in the exam results. In the latest PISA (2018) the exam emphasized scientific literacy by giving 60% of the questions to science, and 20% each to reading and mathematics. A total of 8,249 students participated from 273 Thai schools. Thai students ranked 52nd (out of 72 countries) on the science test with an average score of 426; on mathematics Thailand ranked 54th with an average score of 419. These scores were a slight improvement over 2015. For reading, Thailand ranked 57th with an average score of 393 which is lower

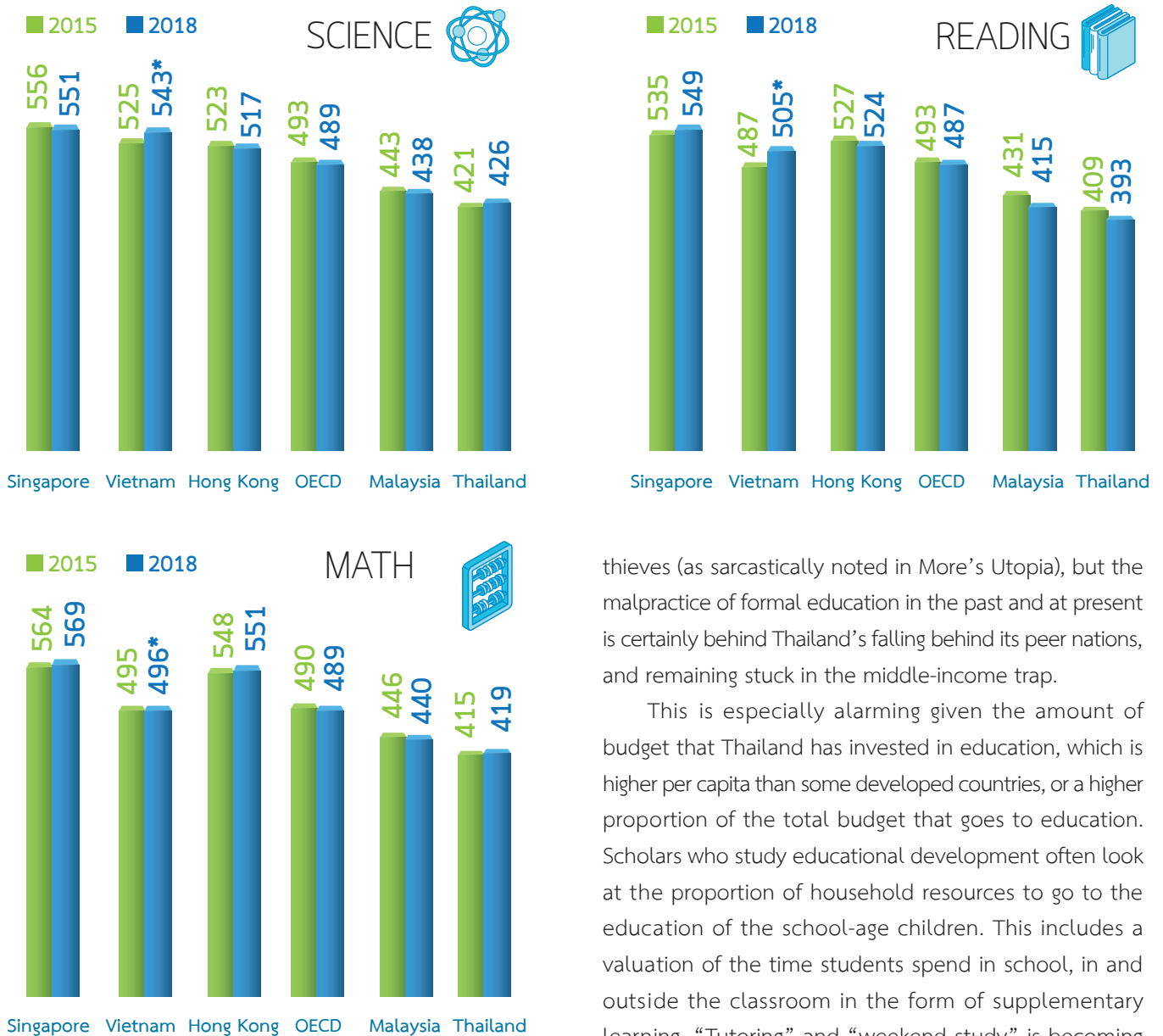
than its average score in 2015. By comparison, Vietnamese students ranked 8th in science, 22nd in mathematics, and 32nd in reading. Those scores represented an improvement over 2015 (Figure 1). In addition, the global test called Trends in International Mathematics and Science Study or TIMSS in the same year included 6,482 Thai students from 204 schools along with students from 39 countries. In math, Thai students ranked 27th and, for science, they ranked 26th.⁴

On the other hand, there has been the good news that Thai students have excelled in the Academic Olympics since 2010. Thais won an average of three gold medals in the field of physics per year. Thai contestants in the Mathematical Olympiad in 2017 ranked 7th in the world from (111 countries).⁵ However, in the aggregate, the science and math aptitude of Thai students is not keeping up with the rest of the world, and this can be attributed to the inequality of education. The annual Thai national standardized exam called Ordinary National Education Test (O-NET) classifies results by school type and geographic region, and the break-out clearly **reflects the differences in education quality by type and area. Students in the northeast and southern regions lag behind their peers in the north, central and Bangkok.** In addition, there are stark differences in scores for students by type of school, whether it is the schools under the Office of the Basic Education Commission (OBEC), private and public schools, and Bangkok schools. **There is a clear difference in the quality of education which is deeply rooted in the inequality of opportunity to access quality schools, in spite of the increase in the number of schools that pass the assessment criteria of the Ministry of Education each year.**⁶

The most regretful thing about Thai students' inferior performance on these standardized tests is that it reflects the shoddy implementation of education staff and administrators who are shirking their duty, with serious consequences for the Thai working-age population of tomorrow. Even though the Thai educational system is not training youth to become



Figure 1: PISA Scores of Thailand Compared to Other Countries of Asia and Southeast Asia



Source : OECD (2016) - PISA 2015 Results (Volume I): Excellence and Equity in Education. <http://dx.doi.org/10.1787/9789264266490-en> OECD (2020) - PISA 2018 Results (Volume I): Excellence and Equity in Education. https://www.oecd.org/pisa/Combined_Executive_Summaries_PISA_2018.pdf

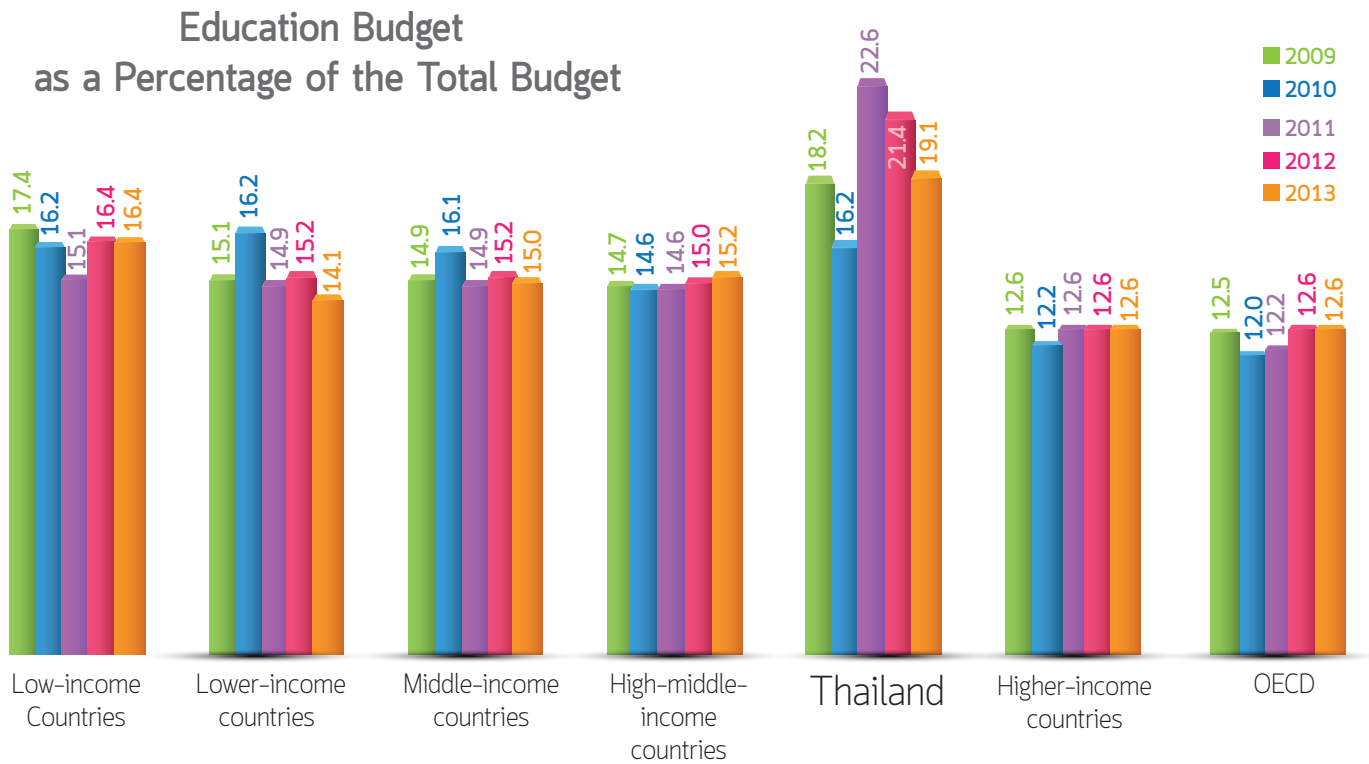
* Pisa score in 2018 of Vietnam are unofficial, OECD is pending to review. <https://vietnamnews.vn/society/569454/vn-gets-high-scores-but-not-named-in-pisa-2018-ranking.html>

thieves (as sarcastically noted in More’s Utopia), but the malpractice of formal education in the past and at present is certainly behind Thailand’s falling behind its peer nations, and remaining stuck in the middle-income trap.

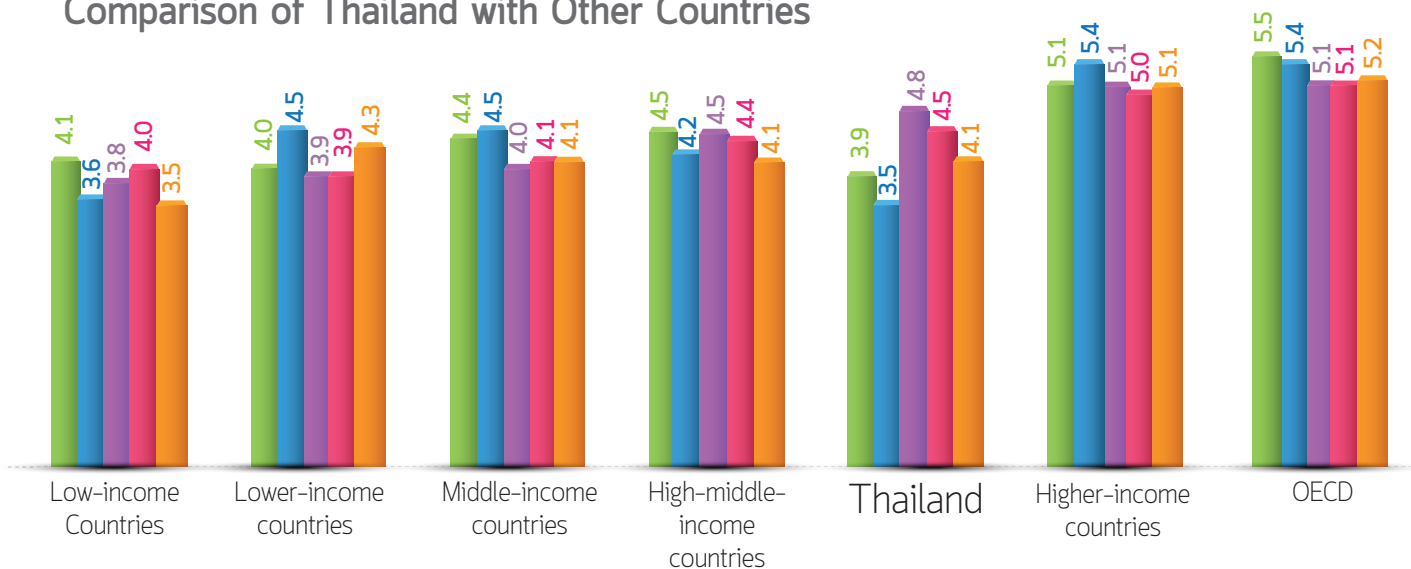
This is especially alarming given the amount of budget that Thailand has invested in education, which is higher per capita than some developed countries, or a higher proportion of the total budget that goes to education. Scholars who study educational development often look at the proportion of household resources to go to the education of the school-age children. This includes a valuation of the time students spend in school, in and outside the classroom in the form of supplementary learning. “Tutoring” and “weekend study” is becoming the norm for Thai students to make up for the deficiencies of the formal curriculum. Still, the central question is the following: What makes the quality of education in Thailand not as satisfactory as it should be?

Various academic studies that have analyzed the education system of Thailand identified weaknesses in many dimensions. From these studies, one can see the enormity of the problem, and realize that small changes may not lead to sustainable solutions. The level of reform has to be large enough in order to truly improve the quality of Thai students.

Figure 2 : Comparison of Education Budget of Thailand with Other Countries



Education Budget as a % of GDP: Comparison of Thailand with Other Countries



Source : World Development Indicators. <https://databank.worldbank.org/data/source/world-development-indicators>



<https://www.unicef.org/thailand/th/stories/> อดิษฐ์ว่างการดูแลเด็กปฐมวัยเพื่อเด็กไทยทุกคน

The curriculum content and strategy for learning in the Thai educational system is connected with most other issues behind the weakness in performance. There needs to be a modernization of courses to keep up with the changes in the world. The students, and especially teachers, may lack confidence in their ability to keep up with the latest content, given that online resources are at every student’s fingertips.

Despite the historical efforts to decentralize management of education to local government, the principal authorities are still located in the central departments and ministries. This means that the Ministry of Education can influence the appointment of the school administrators and teachers, including assessment mechanisms that are not favorably tied to the development of children’s learning (accountability), at the expense of assessment of teachers’ performance. This imposes a burden on both the school and the teacher. A study of the workload of teachers in 2015 found that from the beginning of the academic year through 200 days of classroom instruction, **teachers must spend time outside the classroom conducting activities unrelated to education, such as assessments, teacher evaluation, outside competitions, academic activities, in-service training, etc.** These non-teaching hours add up to 65 days, representing 32.5% of the school year. That has led to the movement to “Return the teachers

to the classroom” and returning the focus of the school to teaching, learning, and student development.

Structural problems arising from centralization of authority have a long history in Thailand. The attempts to expand the structure of the educational system in accordance with the expansion of society have created a bulky and unwieldy system. This is unnecessarily disruptive and makes the system overly complex. The large structure and centralized nature of the system is a major factor which inhibits any meaningful educational reform effort. Even though most thinkers about this issue agree with the necessity of decentralization of authority for education, the mechanisms by which to achieve that are not clear or agreed upon. If the end goal is to help students reach higher education, how can decentralization work when the university entrance exam process is centralized?

Nowadays, learning and knowledge seem to be separate entities and motivations. Ideally, students will identify their passion and be self-motivated learners, which eventually leads to a fulfilling career, with good income and stability. However, **there is a danger with excessive ‘vocationalism’ if it prevents the student to independently explore themselves and their intrinsic areas of interest.** The concern is that students will become overly focused on just earning the diploma (i.e., piece of paper) instead acquiring a true education, which Mounier and Tanchuang (2018), called the



“Diploma Disease.”⁸ Today, most youth study in order to get credentials that enable them to ascend to the next level in the educational system or land a job, while teachers merely “teach to the test” to get a high student passing rate.

Teaching and learning for scoring well in exams, especially competitive examinations to enter higher levels, inevitably lead to rote learning that focuses on the content that corresponds to the exam – instead of the curriculum for acquisition of true knowledge and self-motivated learning. The importance of the competitive exams opens up the market for supplemental education and tutoring that necessarily goes beyond or away from classroom, since the standard curriculum is a one-size fits all prescription from the central Ministry of Education. The focus on test-centered tutoring and extra-curricular teaching further stunts the educational opportunity for students. This can create a conflict of interest for teachers who also provide home-based tutoring outside class hours. In other words, there is a subtle incentive for those teachers to under-teach the classroom content in order to provide remedial instruction through lucrative private tutorials. The tutorial industry has expanded enormously from the home of the teacher, to full-fledged evening classrooms and buildings to accommodate the soaring demand for extra-curricular instruction. Some courses are in such demand that they have to be taught via online virtual classes. There are applications on social media platforms such as Facebook and LINE which are attempting to cash in on this tutorial industry.

The increasing requirement for outside-school tutoring further exacerbates the economic disparities

between the haves and have-nots in society. Those youth from higher-income families can afford the tutoring, do better on exams, and advance to higher education and professional careers, compared to those from lower-income backgrounds who do not have that option. This is increasing the cost of a quality education so much that today’s young married couples have to think very carefully whether to have children or not.

At the university level, one of the problems of the Thai education system is the production of graduates in fields for which there is no market demand (i.e., mismatched education). This reflects the rigidity and lack of flexibility in the educational system to more easily re-tool and adapt curricula to anticipate emerging needs in the labor market. This is leading to a variety of imbalances, such as qualification mismatch, field mismatch, skills mismatch,⁹ vertical mismatch, and horizontal mismatch.¹⁰ The result is unsatisfactory income, low job satisfaction, and inadequate production of graduates to fill gaps in the labor force. Generally, there is an oversupply of graduates in the social sciences and an insufficient number in STEM fields. This is impeding Thailand’s ability to transition from an economy with low value-added industries to production of innovation, thus making the vision of Thailand 4.0 more out of reach.

As for the vocational education, Thailand is not producing the number of graduates to meet domestic labor market needs. Thai society still undervalues a vocational degree compared to a college or university degree. Plus, vocational schools acquired the negative reputation of being a destination for delinquent students, or those without potential for higher education.

One of the problems in the debate about the problem of Thai education is the focus on the levels of the ministry, teachers, and students. In other words, **there is too little focus on parents and guardians of school-age youth. This is despite the fact that children spend more time at home with their parents than at school.** There is a Thai saying that the “*parents are a child’s first teachers.*” Yet society is ignoring the wisdom of this adage. Instead, increasingly parents see their role as simply the investor in the education of the child, and the teacher/school is responsible for the outcomes.

Parents and guardians are essentially washing their hands of their responsibility to help educate the next generation to be successful adults. They may have the view that, if a student fails, it is the failure of the teacher and formal education system, not the parents/guardians. This abdication of their role in educating their child is even more surprising when considering that today's generation of parents with school-age children have significantly higher education than their own parents had (i.e., they should value education more).

Indeed, there does not need to be more research or debate about the fact that there are glaring problems

with the Thai educational system. It cannot be denied that the problems are large and complex, and solving them will require reform at every level. There have to be changes in the structure and function at the ministerial level all the way down to the household and the role of the parents as the earliest educators of the child. It should not take international standardized testing to tell society that its youth are falling behind. Now is the moment for everyone in society to focus on this problem urgently and sincerely, since Thailand is running out of time in this crucial endeavor: The world will not wait for Thailand to catch up.



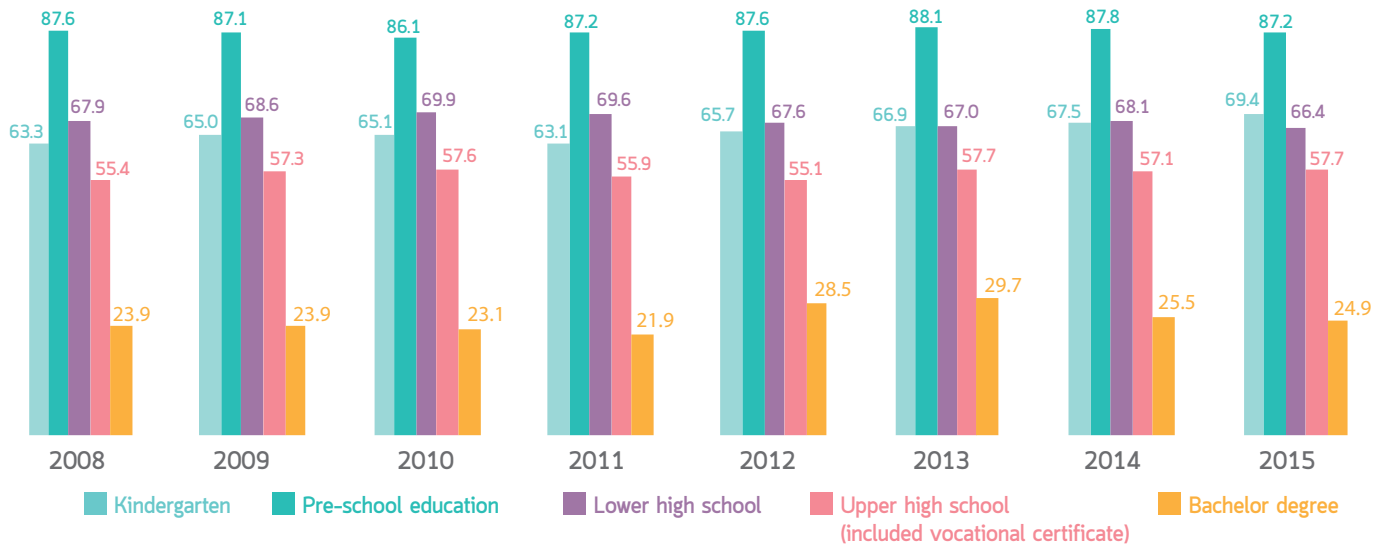
Inequality feeds into itself

In fact, the quality of education in Thailand is not all bad. There are talented educational personnel and educational institutions that are fully equipped to provide the needed training and support for the next generation. The problem is **that these resources are not evenly distributed around the country. This results in pockets and patterns of inequality in education which each era of reform has tried to fix**, but has not yet succeeded in any measurable way.

The net enrollment rate of Thailand at the primary level, which is the beginning of basic education, was at the approximate level of 87% from 2008 until 2015, and then edged up to 88% in 2017. The enrollment rate at

the lower (HS Grades 1-3) high school level has been approximately 67 - 68% from 2008 - 2017. Enrollment in upper (HS Grades 4-6) high school is about 55 - 57% throughout the same period. **This shows there has not been much progress in enrollment compared to the 12th National Economic and Social Development Plan which set the target for the enrollment rate of 90% for basic education. This also shows that a significant number of school-age youth are missing out on basic and compulsory education** which will surely affect the quality of human resources and the country's competitiveness in the near future.

Figure 3 : Net School Enrollment Rate of Thailand : 2008-15



Source : National Economic and Social Development Council (2015): Report of the Analysis of the Status of Poverty and Inequality in Thailand



<https://www.prachachat.net/columns/news-28932>

The problem of inequality becomes more apparent when classifying net enrollment rate in basic education by level of income of the population, by income decile. The first 10% group (i.e., decile) represents the lowest income level, up to the 10th decile, or the 10% with the highest income. For primary and secondary school (including vocational), the lower-income families have the highest student drop-out rate.

In kindergarten, the educational access gap of low-income and high-income people is not that wide despite the income disparities. The poorest 10% had a net enrollment rate of approximately 86-87%, while the richest 10% had an enrollment rate of about 91 - 92% for pre-school. However, that enrollment gap by income gets broader with each higher level of education. For example, at the lower high school level, the poorest 10% had an enrollment rate of approximately 63 - 64%, while the richest 10% had an enrollment rate of about 81%. At upper high school (including vocational certificate) the enrollment gap widens to 42-50% for the poorest compared to 72-78% for the richest. At the bachelor's degree level (including advanced vocational certificate) only 3 - 4% of youth from families with income at the lowest 10% can enroll in college/university compared to 58-63% of the richest 10%. When looking at the five bottom



income deciles (i.e., the poorest half of the country) only 48-51% are able to enroll in post-secondary education.

Decharat Sukkamnerd¹¹ reported the connection between educational inequality and inequality across generations in Thai society, based on information from the World Bank Global Database on Intergenerational Mobility.¹² **An analysis of the data suggests that two out of three Thais children in families in the lower half of the population by income will still be in the lower half as adults.** What is more, an estimated 36% will fall into the bottom quartile of households by income. Only one in three children of today will advance to the upper half of the population by income as adults. By contrast, of children born into the top quartile by income, only one in five will fall to the lower half income deciles as adults. Indeed, nearly half of those born into the top half of the population by income will progress to the top quartile as adults.

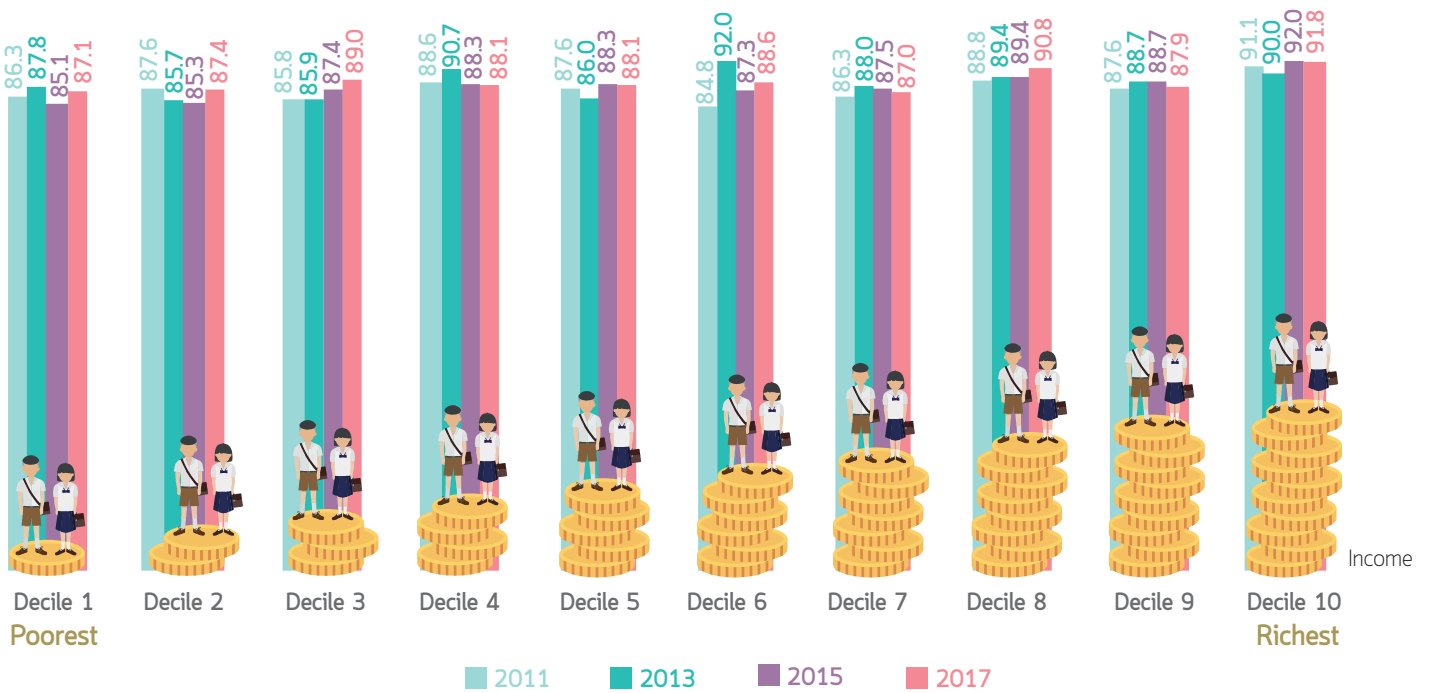
The World Bank calls this phenomenon “Intergenerational Privilege.” This means that privilege is inherited across generations. Largely, this is attributable to the fact that the higher income groups will have a better chance of getting a better education, access training courses, and have a wide variety of opportunities in life that will lead to better potential development than those with less income.

In the analysis of Thai educational inequality, Nonnarit Phisanlayabut (2016)¹³ studied the composition of inequality to identify predictors of education inequality.

He found that differences in educational institutions are important factors that explain differences the most, followed by availability and tuition fees. Many studies show that wealthier families are more than willing to invest in education of their child, even from the earliest ages. Parents seek the most prestigious school they can afford for their child, not only for the higher quality education, but also for the opportunity to make life-long friendships with children of other privileged families who are expected to help each other as adults. In Thai society, connections are often more important than raw merit in landing coveted job or opportunity.

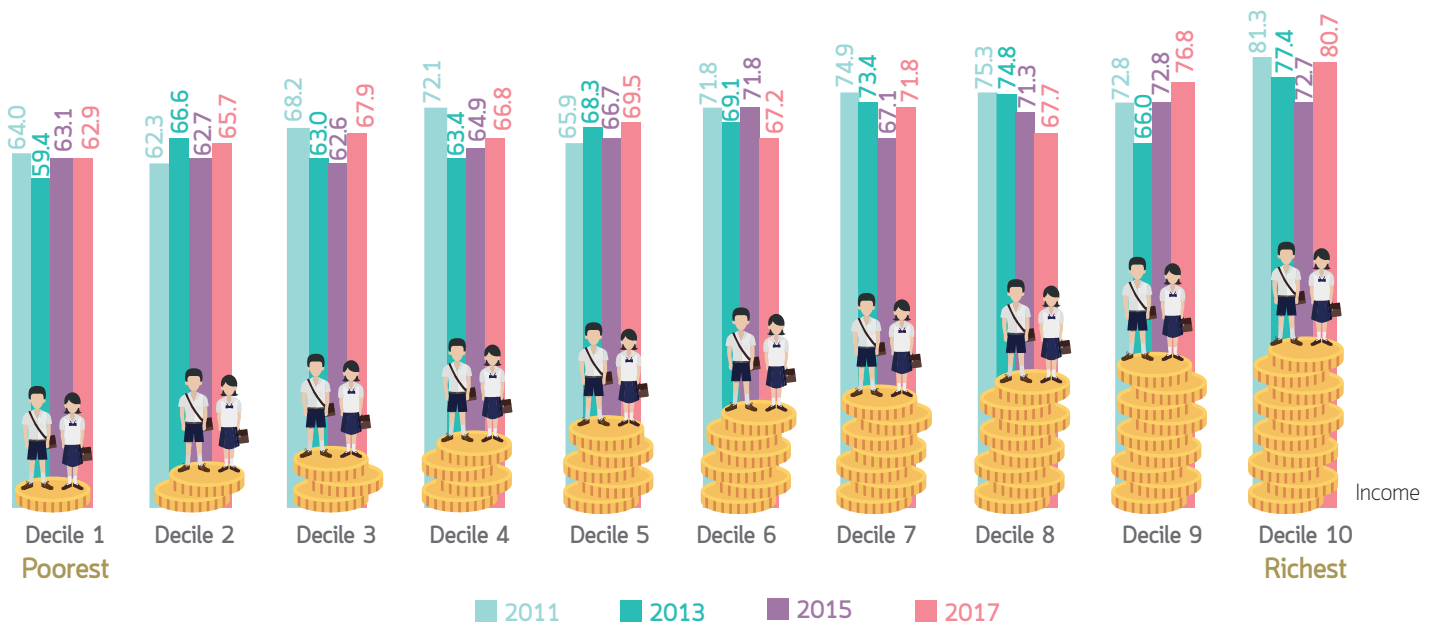
In 2019, there were 30,525 schools in Thailand. Half were small schools (less than 120 students) and most were in the countryside. Half of these smaller schools had 3.2 million students enrolled in K-12 grades. Because of their small size, they received proportionately less budget and resources. And while the government subsidizes much of the cost of compulsory education, these families in rural areas who send their child to a small school find themselves having to spend more each year for school-related expenses. Thus, as soon as these children complete their compulsory education, many do not continue with higher education since they have to help the family makes ends meet and/or could not afford the cost of going higher in the educational system. This is how the underprivileged generations cannot easily escape their disadvantaged status in society.

Figure 4 : Net School Enrollment Rate : Primary Education by Income Decile



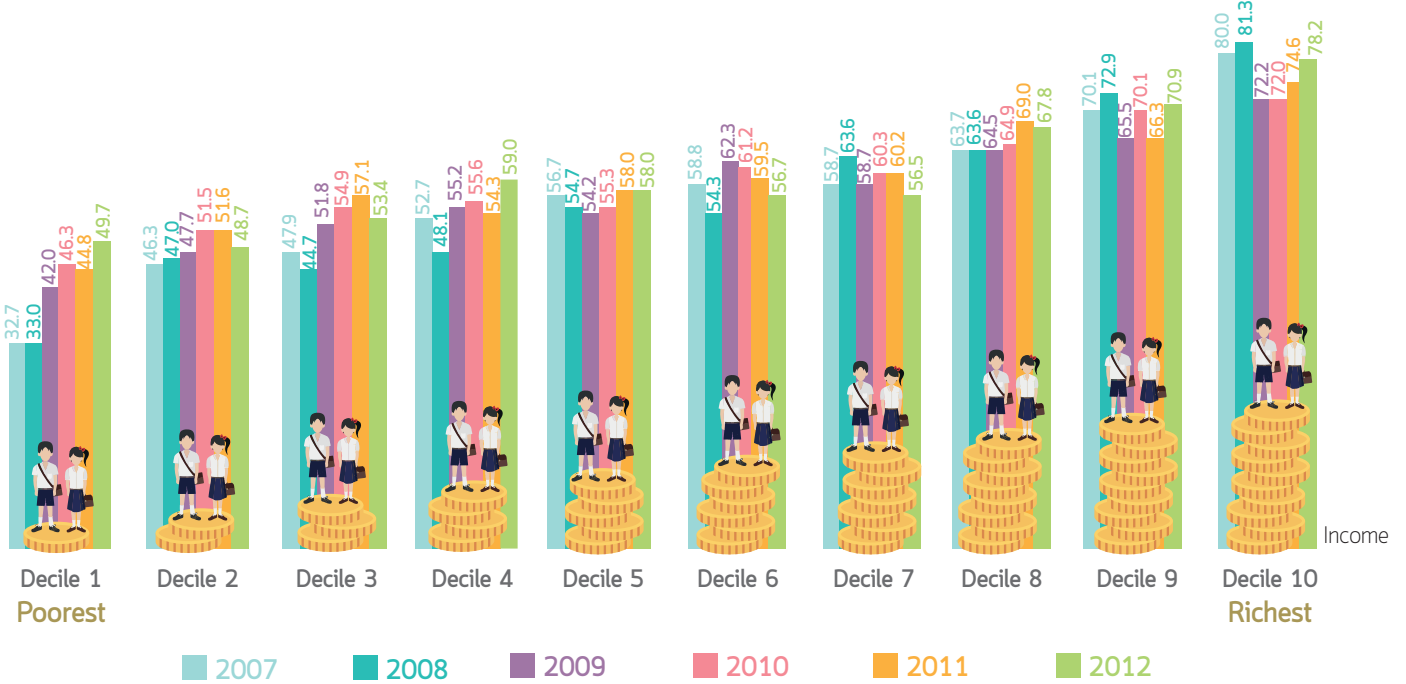
Source : National Economic and Social Development Council (2018) : Monitoring Report of Progress, Equality, and Reduction of Inequality in Thai Society in the First Year of the 12th Development Plan

Figure 5 : Net School Enrollment Rate : Lower Secondary Education by Income Decile



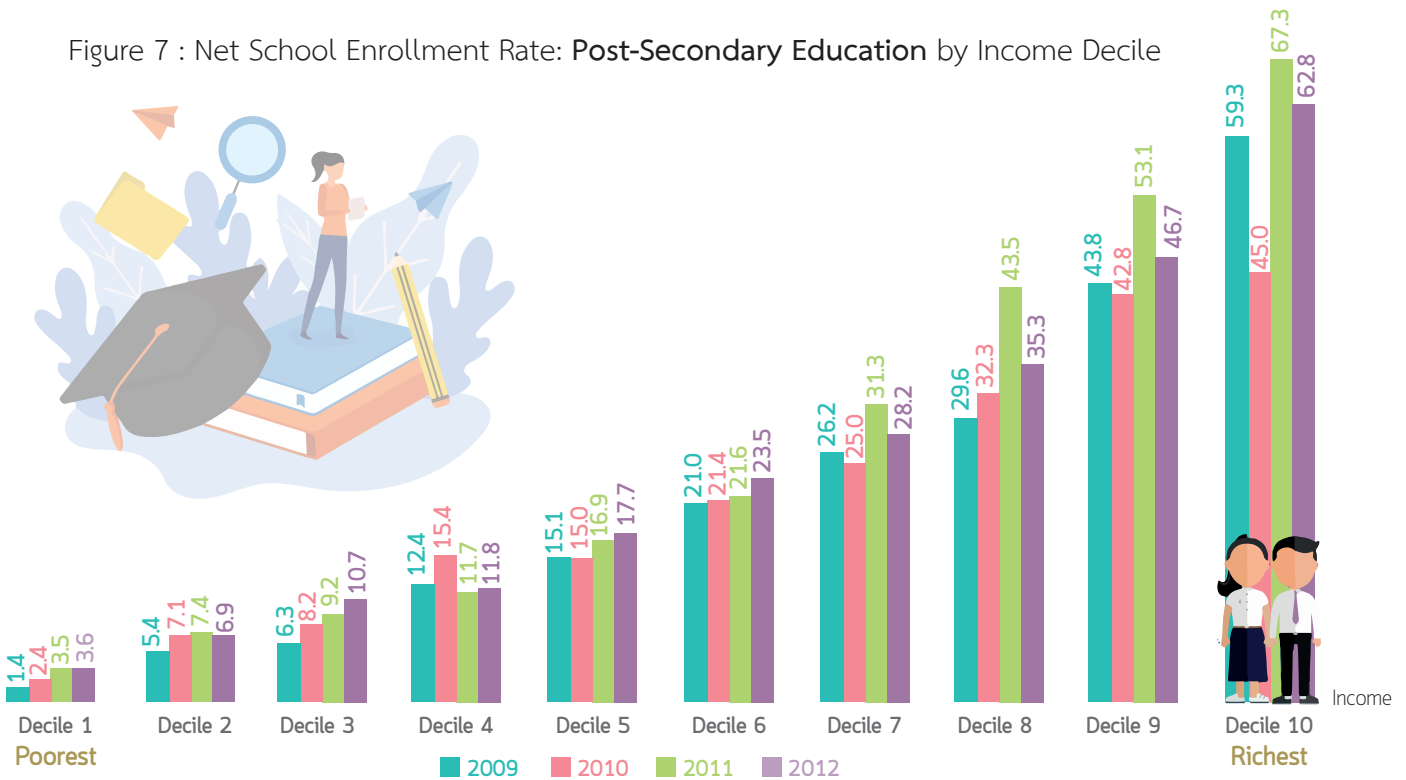
Source : National Economic and Social Development Council (2018) : Monitoring Report of Progress, Equality, and Reduction of Inequality in Thai Society in the First Year of the 12th Development Plan

Figure 6 : Net School Enrollment Rate : Upper Secondary Education by Income Decile



Sources : (1) National Economic and Social Development Council (2015) : Report of the Analysis of the Status of Poverty and Inequality in Thailand
 (2) National Economic and Social Development Council (2018) : Monitoring Report of Progress, Equality, and Reduction of Inequality in Thai Society in the First Year of the 12th Development Plan

Figure 7 : Net School Enrollment Rate: Post-Secondary Education by Income Decile



Source : (1) National Economic and Social Development Council (2015) : Report of the Analysis of the Status of Poverty and Inequality in Thailand
 Remark : Data on university enrollment by the National Economic and Social Development Council (2015) used data on expenditures to reflect income level

The lawn in front of another school



“The grass is always greener on the other side of the fence.”

“The lawn next to the house is usually greener.”

The PISA test results compare quality of students and education, and that can be connected to the competitive potential of each country in the future when these youth grow into adults. Many countries are being watched to see which has the best model of an education system that can consistently produce students who excel on standardized exams, e.g., in science, reading, and math.

Singapore and Finland are two countries which people are studying to see why their students consistently perform so well compared to their peers around the world. Clearly, performance is not just due to the core curriculum in their schools. There is also effective supervision and development of human resources for education. Students from both countries have outstanding scores in the Global Competitiveness Report of the World Economic Forum in the dimension of human capital, and in the Human Development Report of the United Nations Development Program (UNDP). Educators want to know what are the components of the educational “engine” in those countries and how do they work.

Anyone who has thoroughly studied the systems of both countries will know that the educational atmosphere and environment are completely different. What the two countries do have in common is the relatively small size of the total population, or about five million. That might have important implications for the educational management of the country.

The priority on education of families with school-age children in Singapore is probably not that much different than middle-class parents in Thai society. But Singapore may have a significantly higher level of intensity in ensuring that the priority is actualized. In other words, parents of students in Singapore play a much stronger and closer supervisory role for their children’s schooling – acting almost like a boxer’s trainer in the corner of the ring. Singaporean parents know very well about the intensity of the competition in order to guarantee a safe future for their child(ren). **These “Tiger parents” adhere to the principle of “Kia Soo,” which is Hokkien language that literally means “my child can’t fail.”**¹⁴

In this dedication to excel, Singaporeans invest considerable money and time to have their child tutored, and this extracurricular education begins in the primary grades. While Thai parents (with means) also send their child to tutoring classes from a young age, one key difference is that many of these Tiger parents actually sit in the back of the tutor's classroom so that they know what is being taught and how to reinforce that learning at home. That also places tremendous pressure on the tutor to perform as well. In that way, unlike Thailand, parents and guardians in Singapore became part of the educational mechanism.¹⁵ Indeed, the focus on their child's education has become a second profession of Singaporean parents.

Elementary school children in Singapore must pass a Primary School Leaving Examination (PSLE), to ensure they have acquired the requisite learning. That is the first external pressure that children must endure, since only a high PSLE score will enable them to enroll in one of the better high schools and, thus, increase their chances of getting into university level. Those with low PSLE scores are tracked into vocational school to pursue trade education, which is still a relatively well-accepted education. However, it is gaining enrollment at the university level which is considered a coveted mark of social prominence in Singapore.

The Australian Dateline Documentary "Inside Singapore's world-class education system"¹⁶ portrayed some of the techniques of teaching and quality of teachers, which the documentary suggested are the heart of success of education in Singapore. However, the program also interviewed a 12 year-old Singaporean student who ominously observed: *"I wish I could have more time for sleep and recreation."*

The picture of Finland's education system is entirely different from Singapore. Finland applies the idea of having the least amount of homework, and that children should have time to play with friends to improve their everyday life skills. Children should have the opportunity to enjoy life, based on the principle that playing with friends can lead to learning. The teacher's role is to try to encourage the children to bring what they observe from play or non-classroom experience to enhance the formal instruction at school.¹⁷

Children only start to have homework when they



<https://www.science.edu.sg/for-schools/resources/star-kits>

enter secondary school. Primary school children spend only 3-4 hours per day at school, and the whole week entails no more than 20 hours of classroom learning. The Finnish educational system requires the least amount of time in the classroom among countries around the world. That said, students from Finland had the highest academic achievement of OECD countries.¹⁸ Perhaps the most impressive thing is the fact that student performance in Finland by family income status has the smallest gap among countries. In other words, there is virtually no difference in academic performance between the more and less economically-privileged.

Finnish children start school at age 7 years, and do not have to take any standardized exams until the end of high school. Among the various attributes of the Finnish educational system, **the aspect that is hardest for other countries to replicate is the standardization of every school in the country. In Finland, there are no schools for the children from wealthy families. There is no school or classes for just the more advanced students. This reflects the socialist approach of Finland toward an egalitarian society in which there is as much equal opportunity as possible.** There is a very high social premium on equality, and that is reflected in the educational system (i.e., inclusive education).¹⁹ By contrast, most other countries use the elimination system to create a competitive environment in which students are pitted against each other, presumably based on the concept that competition will spur industriousness in education.

Singapore and Finland are examples of educational success but from exceedingly different approaches – indeed nearly the opposite approach. Both systems



<https://www.salika.co/2019/06/17/finland-and-singapore-world-best-education>

are difficult to replicate, either because of a socio-cultural uniqueness (i.e., the “Tiger parent” in Singapore), or history of an egalitarian society (i.e., socialism in Finland). As noted, possibly the only similarity between Singapore and Finland is their relatively small population.

An example of a country with a large population that has achieved educational reform is China. China launched its latest educational reform in 1993, only six years before the latest educational reform in Thailand. A key person responsible for planning reform at that time was Li Lan Ching, a former Deputy Prime Minister, who was assigned to oversee education by President Li Peng, despite the fact that Li Lan Ching’s entire professional life up to then was focused on advancing the Chinese economy.

That first reform set a timeframe of ten years for the period 1993-2003. The state’s educational system was the largest in the world, having to serve a population of 1.3 billion. It had also been calcified in place for many decades. Li Lan Ching authored a book about his challenge titled “Education for 1.3 billion people: 10 years of education reform and development.”²⁰ In that book, Li Lan Ching describes the reform approach, first starting with a priority on science to help advance China’s economy. One of the first measures was to upgrade the status of teachers including increasing their number and capacity. The next measure was an increase in the education budget, and a push toward more cost-effective use of budget. China invited investors from the

private sector in China, Hong Kong, Macau and Taiwan to support the educational reform mission. The next measures were to improve ethics in formal education, revise the curricula, revise the texts, and revise testing system/student evaluation. There was also the reform of vocational education which has its origin in the industrial school from 1866 to the time when China opened the country to the outside in 1978. This 10-year reform resulted in an increase of over 3 million vocational students each year to reach a cumulative total of 12 million graduates during the period. In addition, improvements were made to adult education, continuing education, and community education to reduce inequality and increase opportunity for as many as possible.

However, in the past two years, in Chinese academic circles, there has been a louder criticism of the university entrance exam system of China. People pointed to the harmful level of stress caused by such a rigorous exam and small odds of achieving a passing score. This stress begins at a young age as parents seek to get a head start on test-prep and try to get their children into more competitive primary and secondary schools. This system has resulted in inequality for educational advancement and opportunity, not unlike what has occurred in Thailand. Thus, a new approach to university admissions is being tried out in Shanghai and Zhejiang by changing both the subject of the exam and the time allowed to complete the exam.^{21, 22}

Table 1 : Global Competitiveness and Human Capital of Thailand Compared with Other Countries

Global Competitiveness		Report of Human Capital									
By the World Economic Forum: WEF		Quality of Education									
Rank	Human Capital		Overall	Ratio of Students to Teachers	Trained primary school teachers	Internet access 2010-18	Primary	Secondary	Science	Reading	Math
	Health	Innovation									
Singapore	1 st (85)	1 st (100)	19 th (79)	13 th (75)	15	99	551	549	569		
Philippines	11 th (80)	27 th (93)	2 nd (86)	12 th (76)	13	NA	100	100	522	520	507
Malaysia	27 th (75)	66 th (81)	30 th (73)	30 th (55)	12	99	100	100	438	415	440
P.R. China	28 th (74)	40 th (88)	64 th (64)	28 th (65)	17	98	93	98	590	555	591
Thailand	40 th (68)	38 th (89)	73 rd (62)	50 th (44)	16	100	99	97	426	393	419
Vietnam	67 th (62)	71 st (81)	93 rd (57)	76 th (37)	20	100	543	505	496		

Source : Global Competitiveness Report 2019, World Economic Forum²³
 Human Development Report 2019, UNDP²⁴ PISA 2018 Results, OECD²⁵

Some dimensions of success in Thai education reform



<https://www.unicef.org/thailand/th/stories/การศึกษาสำหรับศตวรรษที่21>

Even though the overall mood in the various media about the education system in Thailand seems more negative than optimistic, it is normal for an open society with individual freedoms to express thoughts and criticism out of a desire to improve things. Indeed, there are good features of Thai education, some that stem from the reform measures, while some are from the advocacy of other stakeholders outside the sphere of the Ministry of Education.

The Educational Innovation Area Act of 2019 is one of the successes in the effort to advance the Thai education system to keep pace with the dynamics and complexity of society during the era of globalization. Indeed, it is almost possible to consider the present as the post-globalization era. The concept of an educational innovation area is one of seven issues raised by the Independent Commission for Educational Reform. The idea is to create a space for experimentation and educational innovation in various forms by authorizing educational institutions to have the freedom to try out new approaches to learning, as long as they are consistent with the context and needs of the host community and can develop quality learners. There will be appropriate

support for this initiative from the central authorities, but only as a backstop.

The goal of the area of educational innovation is to boost learning of students through shaping attitudes, imbuing important skills, and transferring knowledge to reduce inequality of education, reduce drop-out, and stimulate cooperation and support from local government organizations, the private sector, and civil society for improving education. This initiative is being piloted in six locations of eight provinces, namely, in the northern region in Chiang Mai, in the central region in Kanchanaburi, in the eastern region in Rayong, in the northeastern region in Sisaket, in the southern region in Satun, and in the southern sub-region in Pattani, Yala and Narathiwat.^{26, 27}

In addition, the Equitable Education Fund has been established under the Equitable Education Fund Act, B.E. 2561 (2018) with the goal of ensuring that people throughout Thailand have the right to access basic education, and extend financial aid to disadvantaged children and youth to ensure they can complete compulsory education. This is a student-centered fund and is not related to compensation for teachers. The fund has an initial capital of one billion baht and will also

receive an annuity from the proceeds of the government lottery.

In addition to these developments, the Independent Commission for Educational Reform proposed that 5% of the national budget be allocated for education each year for the next five years. Normally, the education budget is approximately 25 billion baht per year, and this proposal would increase that amount significantly. However, the proposal did not pass the National Legislative Assembly (NLA) and, thus, the 5% figure will have to be considered on a year-to-year basis and remain a matter of debate in parliament.²⁸ That said, the 2020 national budget allocates 1,939 million baht for the Equitable Education Fund, which reflects the seriousness of legislators to genuinely address the problem of educational inequality once and for all.²⁹ **The establishment of the fund received attention of UNESCO which pledged to support the effort as part of its mission to achieve the Sustainable Development Goals in education.**³⁰

There are intensified efforts to promote the development of vocational education to address current and future labor shortages, especially as industry in Thailand is expected to upgrade from lower-skilled labor to more medium-skilled labor which requires vocational-level training. That way,

production will add higher value. This new emphasis is causing various sectors to take a closer look at the problems of vocational education, and why that branch of education is looked down upon by society. Also, the image of vocational students as rowdy delinquents also needs to be addressed. Importantly, however, it is the quality of the vocational school coursework that needs to be upgraded and tailored to the emerging needs of the industrial sector.

Accordingly, a new initiative was launched called the **“Creative People” Project** which began operations in 2005, and selects outstanding vocational students from all over the country to be “ambassadors” in conducting public information dissemination. These model students are first selected at the provincial level, and then at the regional level. Associated activities include exhibitions, displays of inventions, and personality development, to help reverse the image of the vocational student as unproductive and disruptive. Then, in 2015, a new project was launched called the **“Show your vocation”** which included a documentary film contest to motivate youth with a mechanical aptitude to be a creative thinker and innovator. The films helped to disseminate the good work being produced by vocational students, and were shared through various media and channels. This also helped



<https://www.chiangmainews.co.th/page/archives/863124>



https://aboutmom.co/place/school_plearn/2027

to instill pride among vocational students everywhere. **There is also a link with the Office of the Basic Education Commission (OBEC) so that high school students studying the general curriculum have the opportunity to try vocational courses** which might be closer to their innate skills and interests.

In order to ensure that vocational schools are producing graduates which meet the needs of industry, there is formal **cooperation between schools and worksites, including joint curriculum development, as well arranging internships in worksites so that students see how their learning is applied in real life.** Some of these collaborations include a program with Toyota Motor (Thailand), Pruksa Real Estate Public Company Limited, and many other large private companies. There is also **the “Sattahip Model” which is a tripartite collaboration between vocational educational institutions, professional organizations, and worksites.** That way, vocational students are almost guaranteed an attractive and enjoyable job once they graduate. The Eastern Economic Corridor (EEC) is investing in ten target industries and the new S-curve industry, and this is also being shared with vocational education institutions to ensure the curriculum keeps pace with the new trends and technology in industry. In addition, in 2018, Thailand launched **“Vocational Premium”** in collaboration with educational institutions from other countries to allow students to be exposed to worksites and methods in real locations, real factories,

and real equipment. So far, there are six vocational fields which are participating in this exchange program: Rail transport, mechatronics and robotics technician, air transport, industrial robotics, logistics and ‘Smart Farmer.’

The Panya Breeding Project is another example of collaborative educational reform between the private sector, civil society and vocational schools, sponsored by Kasikorn Bank and the Thailand Science Research and Innovation (formerly Thailand Research Fund or TRF). This project includes applied research to develop the teaching and learning guidelines of participating instructors and students by using a Research-based Learning (RBL) model. This approach relies on three important tools: Posing questions to learners or have the learners ask the questions (asking as teaching); inviting learners to express their views (reflective thinking as learning); and assigning students to write academic works and express their ideas and feelings while working (writing is thinking). Students work in groups to identify their problem of interest, then design the method of finding the answer by conducting applied research. This approach is project-based learning which is student-centered, and is a strategy for 21st Century Skills development. The Panya Breeding Project was implemented 2013 until May 2019, with 135 participating schools, 842 classrooms, 4,579 teachers, and 24,612 students.

In the past several decades, **schools for alternative education have been established around Thailand. These schools have flexibility in courses, learning,**



<http://thawsschool.com/2020/01/01/follow-up->

and student assessment. The emphasis is on the development of learning and practical skills from both classroom and outside-the-classroom experience. The approach is to encourage students to practice on their own and keep questioning, as opposed to traditional rote learning, lecture, and competition with other students. That said, the teaching must cover the core elements of the curriculum issued by the Ministry of Education. Importantly, the alternative education experience must be enjoyable for the student. This program has received attention and support from parents and guardians. Currently there are alternative education schools mentioned in many places such as Thawsi School, Siam Sam Tri School, Baanrak Kindergarten, Roong-Aroon School, Plearn Pattana School, Darunsikkhalai School, Panyotai School, etc.³¹ A comparative study has looked at O-NET exam scores of students who studied at alternative schools and mainstream school students. In 2010, the comparison found that the average ONET exam score of students in alternative education schools was higher than their counterparts in the mainstream.³²

In addition, efforts to nurture students in STEM fields will be important in driving innovation in science and technology, and create a higher value-added industry for Thailand. At least **two schools are focusing almost exclusively on mathematics and science: Mahidol Wittayanusorn and Kamnoetvidya Science Academy.** Indeed, Mahidol Wittayanusorn School has been given

‘public organization’ status, and started operations in 1991 with cooperation between Mahidol University and the Department of General Education. That institution is regarded as the first science school in Thailand and accepts 240 new students per year at the high school level. The three grades in 2019 had 720 students, and 22,231 were on a waiting list for admission. Mahidol Wittayanusorn is considered a competitive school at a very high level.

Kamnoetvidya Science Academy was originally named the Rayong Science Academy, and that school focuses on teaching and learning in math and science, also at the high school level. The school has received an endowment by the PTT Group Public Company Limited with initial value of over five billion baht. The school is situated on an area of over 900 rai in Wang Chan District of Rayong Province, and started operating in 2015. The school admits 72 students per year, and has 216 students in three grade levels. There were only an average of 18 students in each classroom in the academic year 2017. There are 7,000 people on a waiting list for admission.

It can be seen that there are a number of impressive developments in the sphere of Thai education, both due to the reform movement directly, but also from advocacy by other sectors, including civil society and the private sector. These efforts are helping Thailand to try to help the next generation of young adults to keep pace with the rapid changes in society and the economy.

Summary of two decades of Thai education reform

“Quality education is like the orchid, which only produces a flower slowly,
But the flower’s bloom is mesmerizing and worth the wait.

Quality teaching molds the individual.

The result can be a sight to behold.”

ML Pin Malakul, one of Thailand’s pre-eminent educators, wrote this poem to explain that a complete education takes time and requires patience. Even though ML Pin might not have been referring directly to educational reform, the reform process certainly does take time and patience, as the poem explains.

Paitoon Sinlarat (2015)³³ wrote on the topic of “**Bottom-up educational reform**” to offer a new perspective on educational development. In the past, when referring to educational reform, people tended to think at the level of changes to the constitution, and passing laws and legislation. That approach led to restructuring of educational administration at the

ministerial level. In other words, this process was just a rearrangement of the power centers and budgeting. Even though new units were set up at the central level to try to modernize the Thai education system, the nature and familiarity in traditional methods bred an indifference to these attempted reforms. In other words, structural change at the top can only achieve so much. Instead, true educational reform must come from the bottom up. This view requires a paradigm shift to embrace the view that change must come at the level of the student and the educator. That shift is going to require teachers to acquire a new set of skills that are suited to 21st Century Learning.



Dr. Vicharn Panich (2012), in his scholarly analysis “The way to create learning for students in the 21st century” proposed that, if the teacher is unable to change the instructional method, it will be difficult for them to lead their students to learning in various environments. Those environments are quickly changing in the age of information and fluctuating technology (i.e., ‘disruptive technology’). Teachers need to be encouraged to try new methods, such as inquiry-based learning, which is learning first by careful observation, then asking questions to formulate a project to implement as a means of finding answers, and learning from the implementation of those projects. The teacher’s role is as an advisor and mentor to help with the student’s search for information through various modern media, and summarizing the lessons learned. This is a student-centered approach which is vastly different from textbook learning or lectures, as was the tradition in the past. In addition, student evaluation is evolving toward measuring the way of thinking rather than testing the student’s memory of facts.

By reforming education from the bottom up, one begins to see the way forward more clearly. Civil society has been advocating these new approaches, such as the Teach for Thailand Project³⁴ that aims to create a new generation of teachers to reduce inequality in education. The Rakluke Group Foundation³⁵ has disseminated manuals on how to build Executive Function (EF) as part of routine teaching in the school. The Kru Kor Sorn Network³⁶ was established to help teachers learn new skills in order to be better teachers. An increasing number of parents have started to home-school their child(ren). Homeschooling can be done by individual families or groups of families, i.e., “Flock Learning” as a social enterprise.³⁷

Thai society in the 21st century environment is large in number, diverse, and complex. This complexity and dynamic evolution is too challenging for the traditional educational administration to control or manage effectively. Instead, the Ministry of Education will have to work more closely with other sectors, civil society, the private sector, and the public itself. **Thailand must prevail in meeting these challenges**



if it hopes to keep pace with the rest of the world. The educational reform movement has often used the term “decentralization” to mean decentralization of authority and budget to local government. However, in the new paradigm, “decentralization” means tapping into the knowledge and expertise from all sectors in order to help advance education of the next generation of adults.

In this process of educational reform, one must not narrowly focus on formal education as a means to a career and advanced technology. Instead, we must remind ourselves of the true purpose of education as being the foundation for a happy and productive life. Students, teachers, and educational administrators should be aware of how this is progressing with a range and depth of information that has never been as accessible as it is today. Alas, there are new problems and types of suffering that come with the information age, and which may be more intense than before. Thus, it can be harder to find peace and happiness in one’s life when connected to everything and everyone else in the world. This is an issue that educational reform still needs to give priority to. In other words, how to ensure that the Thai education system promotes a lifelong healthful happiness in every learner.



The Process of Producing the “Thai Health Report 2020”

Part 1

12 Indicators of Health of Thai Adolescents and Youth

Process

1. Select interesting and important issues to be included in the health indicators through a series of meetings of the Steering Committee.
2. Identify experts to be contacted, then hold meetings to plan each section.
3. Assign an expert to each approved section to prepare a draft.
4. Brainstorm the draft papers, considering suitability, content, coverage, data quality, and possible overlaps.
5. Meetings with experts responsible for each section, to review the draft papers and outline key message for each section.
6. Broad review of the draft papers by experts, followed by revisions of the papers.

Guidelines for health indicator contents

1. Find a key message for each section to shape its contents.
2. Find relevant statistics, particularly annual statistics and recent surveys to reflect recent developments.
3. Select a format, contents and language suitable for diverse readers.

Part 2

10 Outstanding Situations

Criteria for selecting the health issues

- Occurred in 2019.
- Have a significant impact on health, safety, and security, broadly defined.
- Include public policies with effects on health during 2019.
- Are new or emerging.
- Recurred during the year.

4 Outstanding Accomplishments for Health

Four outstanding achievements are success stories in innovation, advances in health technologies, and new findings that positively affected health in general.

Part 3

The Special Issue

Procedure for ranking the issues

- A survey was conducted using a questionnaire listing significant issues in 2019 before the survey date. The situations obtained from the survey were ranked using a Likert scale with 5 levels: highest (5), high (4), medium (3), low (2) and least (1).
- Frequency analysis was used to sort the order of importance.

There are two types of special topics: target group oriented and issue oriented. The types alternate each year. The topic is sometimes selected from the 10 health issues.

Important criteria in selecting the special topic include:

1. Political significance.
2. Public benefits.
3. The existence of diverse views and dimensions.

Working process

1. The Steering Committee met to select the topic.
2. The working group outlined a conceptual framework for the report.
3. Experts were contacted to act as academic advisors.
4. The working group compiled and synthesized the contents. The contents were thoroughly checked for accuracy by academics and experts.
5. The report was revised in line with reviewers' suggestions.

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¹¹ Such as the Thai Association of Agri-Business Thai Crop Protection Association and Innovation Association for Thai Agriculture and Confederation of Oil Palm Planters of Thailand

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⁸ Draft law. (2019). *สถาบันพืชยาเสพติดแห่งประเทศไทย*. Retrieved December 30, 2019: From <https://drive.google.com/file/d/1YsnXsiqEzFz6xHzeVl0zWcPK-MRz2J5r/view>

⁹ Draft law: Criminal offense category of drugs. Amendment (No. ...) This is an amendment to the Drug Act of 1979; there are a total of 5 sections, which would allow Thai citizens to grow marijuana for personal consumption for medical treatment, cultivate no more than 6 plants per family and be under the supervision and administration of the Drug Plant Institute of Thailand; and allow the Drug Plant Institute to issue licenses to produce, import, export, distribute or have possession of Category 5 drugs. As for the draft of the Drug Plant Institute Act, there are a total of 31 sections specifying "narcotics plants." These are plants which have important active ingredients that can be developed as medicines. These plants are defined in the Single Convention on Narcotics and specify the elements in establishing an institution called "The Drug Plant Institute of Thailand" which is responsible for issuing licenses to people or juristic persons for cultivation, manufacture, sale, import, export, drug plants, purchase of narcotics plants and products that are permitted by law. The Prime Minister is the chair of the Institute Council, with the Deputy Prime Minister assigned by the Prime Minister as Deputy Chairman of the Institute. There are committee members of the Institute Council, consisting of the Minister Public Health, Director-General of the Department of Medical Services, President of the Pharmacy Council, Commissioner of the Royal Thai Police, etc. Mr. Supachai Chaisamut, Bhumjaitai Party, revealed that the two laws proposed to the Council are already under consideration of the Prime Minister. The issues is whether the draft law is a financial law or not. There also needs to be a public hearing to listen to people's opinions, and report these to the Council in order to consider legislation carefully along the lines propose by the Bhumjaitai Party. There is no definite time limit yet on approving this draft law or when it will enter the Senate.

¹⁰ ป.ร.ควบคุมยาเสพติดฯ ดึงนโยบายพรรคการเมืองปลูกกัญชาเสรี! กระหนาบอนุสัญญาสหประชาชาติ. (2019, 25 February). *Matichon*. Retrieved December 27, 2019: from https://www.matichon.co.th/local/quality-life/news_1379641

¹¹ เลขาป.ป.ส.ชี้กัญชา-กัญชง ยังเป็นยาเสพติดประเภท 5 ยกเว้นเฉพาะสารสกัด ตามเงื่อนไขที่ระบุ. (2019, 31 August) *Matichon*. Retrieved December 30, 2019: from https://www.matichon.co.th/local/crime/news_1650722

¹² ป.ป.ส.'พบ 62 พันที่อีสานตอนบนลอบปลูกกัญชาอื้อ จับแล้ว 42 คดี. (2019, 7 November). *Post Today*. Retrieved December 30, 2019: from <https://www.posttoday.com/social/general/605658>

¹³ ยอดจับ 'กัญชา' พุ่ง คนเข้าผิดข้อใช้รักษาโรคเอง. (2019, 19 December). *Bangkok Insight*. Retrieved December 30, 2019: from <https://www.thebangkokinsight.com/257434/>

¹⁴ Council of Thai Traditional Medicine. (2019). *การฝึกอบรมการใช้กัญชาทางการแพทย์แผนไทย ตามพระราชบัญญัติยาเสพติดให้โทษ (ฉบับที่ 7) พ.ศ. 2562*. Retrieved December 30, 2019: From <http://www.thaimed.or.th/?p=12312>

¹⁵ Department of Medical Services, Ministry of Public Health. (n.d.). *การใช้กัญชาทางการแพทย์*. Retrieved December 30, 2019: From <https://mdresearch.kku.ac.th/files/cannabis/Final%20Guidance%20on%20Cannabis.pdf>

¹⁶ House of Representatives meeting. (2019). *ระเบียบวาระการประชุมสามัญแห่งราษฎร ชุดที่ 25 ปีที่ 1 ครั้งที่ 15 (สมัยสามัญประจำปีครั้งที่สอง) วันพุธที่ 25 ธันวาคม 2562. ภาคปชช.ยื่นร่างม.ป.ล.ดลือกัญชา-กระท่อมรัฐสภา*. Retrieved December 30, 2019: From <http://edoc.parliament.go.th/Meeting/Meet-ingViewer.aspx? id = 544>

¹⁷ *ภาคปชช.ยื่นร่างม.ป.ล.ดลือกัญชา-กระท่อม*. (2019, 26 December). *INN News*. Retrieved December 30, 2019: from https://www.innnews.co.th/politics/news_562759/

¹⁸ "อุทัย" เตรียมปั้น อสม.เป็น "หมอประจำหมู่บ้าน" หนุนปลูกกัญชาเป็นตัวอย่าง สร้างรายได้เพิ่ม. (2019, 31 July). *Khaosod*. Retrieved January 27, 2020: from https://www.khaosod.co.th/around-thailand/news_2759130

¹⁹ เสนอปรับนโยบายปลูกกัญชา จาก อสม.คนละ 6 ต้นเป็นวิสาหกิจชุมชน "1 รพ.สต. 1 แปลงปลูก". (2019, 10 August). *Hfocus*. Retrieved January 27, 2020: From <https://www.hfocus.org/content/2019/08/17502>

²⁰ Sirikom Auaphaichit. (2019, 12 August). *กัญชา : สืบหาความจริงเกี่ยวกับประชาชนต้องการเห็นหน้านโยบายกัญชาของอุทัย ชาญวิรุฬห์*. Retrieved January 28, 2020: From <https://www.bbc.com/thai/49310702>

²¹ เปิดทีมนะ ภูมิใจไทย VS นักวิชาการ นโยบายเสรีกัญชา ทำได้จริงหรือ ก่อนลงคะแนนเลือกตั้ง62. (2019, 24 February). *Isranews*. Retrieved January 28, 2020: from <https://www.isranews.org/isranews-article/74090-weed00.html>

²² เสียหาย โสติดัด ต้นนโยบายปลูกกัญชา เพื่อ "ปั่นนารการ" ด้วย ไม้ไขศักรแพทย์. (2019, 7 July). *Khaosod*. Retrieved January 10, 2020: From https://www.khaosod.co.th/politics/news_2688640

²³ ประยุทธ์อำ กัญชาเพื่อการแพทย์ใช้อย่างจริงจัง ต้องควบคุมไม่ให้กลายเป็นสารเสพติด. (2019, 11 December). *The Standard*. Retrieved January 10, 2020: From <https://thestandard.co/prayut-med-ical-marijuana/>

²⁴ Information Office, Office of the Permanent Secretary, Ministry of Public Health (2019, 11 December). *สส.เปิดเว็บไซต์ ปลดล็อก...กัญชาทางการแพทย์เสรี*. Retrieved January 10, 2020: From https://pr.moph.go.th?url=spr_detail/2/04/135729/

²⁵ Thai medical marijuana policy is currently making great progress with the current Government Pharmaceutical Organization. It would be the first Thai government organization to experiment with the growing marijuana plants to extract oil for trial treatment. This causing many hospitals to begin opening more clinics in this area, since marijuana plants are used to treat various diseases. Like Phra Ajahn Fan's Hospital run by Dr. Kanyaphak Silarakar, which has a marijuana clinic using 16 species of Thai plants to treat 20 cancer patients; 5 terminal cancer cases have been admitted since the beginning of the clinic. One cancer patient died. Even in the past, doctors have never confirmed that cannabis pills can be used to treat cancer. The drug use indication of cannabis according to international standards is used to treat only 4 conditions: 1. To alleviate the side effects of chemo treatment; 2. Epilepsy in children; 3. Neurological pain; and 4. Spasms. According to the follow-up, the patients on marijuana ate more food, had more sleep, and increased body weight. Proper eating and sleep are important mechanisms in body repair. Importantly, the clinic has not had any patients who became addicted from this medical marijuana use. No patient has requested to increase the dosage; 1 bottle of marijuana oil will be used for 30 days and no patient has requested more than that. In this regard, there are clear rules that patients must come to receive medication themselves every time, except those who are bedridden. Initially, the clinic will make an appointment for weekly visits, and then extend that to 2 weeks. But the clinic will never dispense more than a one month's supply since overdose could cause hypotension or hypoglycemia.

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²⁷ รมอ.ต้นนโยบายสร.กัญชา "ได้ไม่คุ้มเสีย" ค้านให้สสม. ส่งยา. (2019, 29 July). *Bangkok Biz News*. Retrieved January 11, 2020: From <https://www.bangkokbiznews.com/news/detail/842125>

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² Poonsuk Ninkitsaranont (2019, June). *แนวโน้มธุรกิจอุตสาหกรรมปี 2562-64 ธุรกิจโรงพยาบาลเอกชน*. Retrieved December 30, 2019: from https://www.krungsri.com/bank/getmedia/42e5f42d-4465-4304-92af-60e3c2539460 / IO_Private_Hospital_190218_TH_EX.aspx

³ รพ.เอกชนแย่งซื้อตัวหมอ-พยาบาล การันตีรายได้ 2 แสน. (2017, 9 April). *Hfocus*. Retrieved December 30, 2019: from <https://www.hfocus.org/content/2017/04/13743>

⁴ กรมการค้าภายใน-จุฬาฯ เปิดผลศึกษา รวบรวม รพ.เอกชน กำไรส่วนเกินพุ่ง รพ.ใหญ่ซื้อลูกแต่ขายแพ่งกว่า. (2019, 2 November). *Hfocus*. Retrieved December 30, 2019: from <https://www.hfocus.org/content/2019/11/17986>

⁵ รพ. เอกชน พันหัวแบะ รักษาห้องเสียดิ 30,000 บาท สั่งตรวจสอบแล้ว. (n.d.). *Kapok*. Retrieved January 2, 2020: from <https://highlight.kapook.com/view/184688>

⁶ แม้ซึ้งน้ำใจ คนแห่ช่วยบริจาคคร่ำครวญลูกป่วยหนัก หลังต้องผ่าตัดต่างแดน แต่ไร้ประกัน. (2017). *Kapok*. Retrieved January 2, 2020: from <https://highlight.kapook.com/view/178567>

⁷ Please refer to the announcement of the Central Committee on Price of Goods and Services. The Government Gazette, Volume 136, Special Section 201 Ngor, Issue 87, 2019, 13 August 2019, Pages 174-176

⁸ This announcement applies to hospitals, drug manufacturers, importers in the Kingdom for distribution or as the representative of the importer or distributor

⁹ If private hospitals do not comply with this announcement, they are subject punishment under the Act on Goods Prices and Services (1999)

¹⁰ Announced in the Government Gazette on 13 August 2019.

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¹² สมาคม รพ.เอกชน พ้องศาลปกครอง คัดค้านข้อควรคำสั่ง คมค้ายา-หมอ. (2019). *Thai Rath Online*. Retrieved January 2, 2020: from <https://www.thairath.co.th/news/business/1555436>

¹³ Such as in the Victory Monument area and Phayathai Road where there are many hospitals including Rajavithi Hospital, Phramongkut Hospital, Queen Sirikit National Institute of Child Health, Bhumirajanagarindra Kidney Institute, Buddhist Hospital, Ramathibodi Hospital, Institute of Neurology, Faculty of Dentistry of Mahidol University, Tropical Medicine Hospital of the Faculty of Tropical Medicine of Mahidol University

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² Evans-Polce R, Veliz P., Boyd CJ., McCabe VV. & McCabe SE. (2020). Trends in E-cigarette, cigarettes, cigars, and smokeless tobacco use among US adolescents, 2014-2018. *American Journal of Public Health*.

³ จุล "บุหรี่-บุหรี่ไฟฟ้า" สูบความรื้อน 300-600 องค์ เมาปลอดคนไทยตายปีละ 4 หมื่น. (2019, 17 May). *Manager Online*. Retrieved January 12, 2020: from <https://mgronline.com/qo/detail/9620000047327>

⁴ WHO. (2008, 19 September). *Marketers of electronic cigarettes should halt unproved therapy claims*. Retrieved January 12, 2020 from <https://www.who.int/mediacentre/news/releases/2008/pr34/en/>

⁵ Matthew L. Myers. (2019, 26 September). *New York City Council Votes to End the Sale of Flavored E-Cigarettes, Needs to Crack Down on Menthol Cigarettes Next*. Retrieved January 12, 2020 from https://www.tobaccofreekids.org/press-releases/2019_11_26_nyc

⁶ เตือนเสกดินโค่นจากบุหรี่ไฟฟ้า "ทำลายสมอง - ก่อมะเร็ง". (2019, 19 August). *Thai PBS*. Retrieved January 12, 2020: from <https://news.thaipbs.or.th/content/283068>

⁷ Daniella Genovesi. (2019, December 5). *E-cigarettes can't help you stop smoking, American Lung Association warns*. Retrieved January 12, 2020 from <https://www.foxbusiness.com/markets/american-lung-association-e-cigarettes>

⁸ Evans-Polce R., Veliz P., Boyd CJ., McCabe VV. & McCabe SE. (2020). *Ibid*.

⁹ PRESS ASSOCIATION. (2019, November 15). *Apple bans vaping apps over health concerns*. Retrieved January 12, 2020 from <https://www.dailymail.co.uk/wires/pa/article-7690141/Apple-bans-vaping-apps-health-concerns.html>

¹⁰ Srirat Lapyai Samut. "The Marketing Strategy of Electronic Cigarettes" in the drive to control e-cigarettes in Thailand, by the Tobacco Research and Knowledge Management Center for Tobacco Control. August 19, 2019. The Sukosol Hotel, Bangkok

¹¹ Sunida Prichawong. "Electronic Cigarettes Affect Youth" in the drive to control e-cigarettes in Thailand, by the Tobacco Research and Knowledge Management Center for Tobacco Control. August 19, 2019. The Sukosol Hotel, Bangkok

¹² Sunida Prichawong. *Ibid*.

¹³ Megan Thielking. (2019, October 15). *Vaping-Related Illness Has a New Name: EVALI*. Retrieved January 12, 2020 from <https://www.scientificamerican.com/article/vaping-related-illness-has-a-new-name-evali/>

¹⁴ JOHN BENNETT. (2019, September 30). *British factory worker, 57, who died in 2010 after swapping his 20-a-day cigarette habit for a 'healthier' e-cigarette is now believed to be the first person in the world to die from lung disease 'linked to vaping'*. Retrieved January 12, 2020 from <https://www.dailymail.co.uk/news/article-7518913/British-factory-worker-57-worlds-person-die-disease-linked-VAPING.html>

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¹⁶ Sam Blanchard. (2020, January 7). *E-cigarettes' have been making people ill for at least 12 YEARS 'as doctors fear thousands of vaping-related illnesses have gone unreported amid spate of deaths in the US*. Retrieved January 12, 2020 from <http://www.dailymail.co.uk/health/article-7860283/Vapors-complaining-online-years-study-finds.html>

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¹⁸ "กลุ่มแพทย์-นักวิจัย" หนุนห้ามนำเข้าบุหรี่ไฟฟ้า. (2019, 19 August). *Daily News*. Retrieved January 12, 2020: from <https://www.dailynews.co.th/politics/726762>

¹⁹ B. Dautzenberg & M.-D. Dautzenberg. (2019, January). Heated tobacco: Systemic review of the literature; systemic analysis of the scientific literature on heated tobacco. *Respiratory Disease Review*. Volume 36, Issue 1. Retrieved January 17, 2020 from <https://doi.org/10.1016/j.jmr.2018.10.010>

²⁰ "บุหรี่ไฟฟ้า" ใช้โซเดียมเดียวจะตลาดขาย-เข้าถึงวงรุ่น จักรูประสานเพชบุ๊ก โยน ห้ามขาย-โฆษณา. (2019, 20 August). *Manager Online*. Retrieved January 12, 2020: from <https://mgronline.com/qo/detail/9620000079589>

²¹ The Secretariat of the Senate, Question No. 011, regarding the management of the problem of illegal electric cigarettes on October 21, 2019

²² Summary of the 9th Senate Meeting (Second annual ordinary session) Monday, 23 December 2019

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Thai Health Working Group

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