

Investigating the Challenges in Alcoholic Beverage Control and Law Enforcement: Analyzing Binge Drinking Prevalence Among the Working-Age Population in Thailand Based on 2017 National Survey

Nakarin Prasit¹, Wongsu Laohasiriwong¹, Ampawan Nonthamat², Puwanart Sresutham¹, Nattaporn Nidthumsakul¹, Nathakon Nilnate³, and Nopparat Senahad^{1*}

¹ Faculty of Public Health, Khon Kaen University, Thailand

² Bangkok Hospital Khon Kaen, Khon Kaen, Thailand

³ Faculty of Public Health, Burapha University, Thailand

* Nopparat Senahad, corresponding author. Email: Noppse@kku.ac.th

Submitted: 22 October 2023. Accepted: 16 January 2024. Published: 2 February 2024

Volume 32, 2024. pp. 481–493. <http://doi.org/10.25133/JPSSv322024.029>

Abstract

This study aimed to determine the prevalence of binge drinking and to investigate the association between socioeconomic factors, risk behaviors, and problems in enforcing the Alcoholic Beverage Control Law among the working-age population in Thailand. Utilizing data from the Smoking and Drinking Behaviors Survey 2017 conducted by the National Statistical Office of Thailand, the study analyzed responses from 61,708 participants. A multilevel logistic analysis was employed to identify the association between issues in enforcing alcoholic beverage control laws and binge drinking, controlling for the effects of covariates and presenting adjusted odds ratios (OR) with 95% confidence intervals. Among the 61,708 respondents, the prevalence of binge drinking was found to be 11.47%. Factors related to the enforcement of alcoholic beverage control laws were significantly associated with binge drinking. Other notable covariates included being male, age, and tobacco consumption. Gaps in the enforcement of alcohol regulations have led to increased alcohol consumption among the working-age population. Consequently, the implementation of rigorous public interest legislation is necessary. This includes setting surveillance standards to strictly monitor alcohol sales, particularly to youth and adolescents, enhancing moral awareness, and increasing penalties for violations of alcohol control laws. Additionally, there is a need to promote the development of practical and comprehensive policies and penalties for breaching alcohol control laws in Thailand.

Keywords

Alcoholic beverage control law enforcement; binge drinking behavior; working-age population

Introduction

Globally, alcohol consumption was the seventh cause of disease and premature death in 2016 (Griswold, 2018). Alcohol consumption is a significant contributor to many diseases and injuries resulting from alcohol intoxication (Brewer et al., 2005). Alcohol use is strongly associated with a higher risk of health problems such as impaired self-control, mental disorders, chronic alcohol, and non-communicable diseases such as cardiovascular disease, cancer, liver cirrhosis, injuries, and deaths from traffic accidents. About many million people die each year from alcohol consumption, which accounts for 5.3% of all deaths. Alcohol-related deaths comprise 3.2% of all global mortality (Brewer et al., 2005), and the effects of drinking alcohol above the standard. There is a significant impact on the burden and cost of care for injuries and deaths from alcohol consumption. This can reduce this damage and loss if alcohol consumption is controlled. Binge drinking is associated with higher mortality rates (Mokdad et al., 2004). The National Institute on Alcohol Abuse and Alcoholism defines binge drinking as a pattern characterized by the consumption of a large amount of alcohol in a short period, as a pattern of drinking alcohol that brings a blood alcohol concentration (BAC) of 0.08% or higher, which is equivalent to 0.08 grams of alcohol per deciliter of blood.

The specific threshold for defining binge drinking may vary, but it often involves consuming multiple drinks within a short timeframe. For example, this may include consuming five or more drinks on an occasion for men or four or more drinks on an occasion for women. This pattern of drinking poses various health and safety risks, including impaired judgment, increased likelihood of accidents, and potential long-term health consequences (National Institute of Alcohol Abuse and Alcoholism [NIAAA], 2004). Binge drinking and other harmful use of alcohol resulted in approximately 3 million deaths worldwide and 132.6 million disability-adjusted life years (DALYs) in 2016 (World Health Organization [WHO], 2019). There are 10,009 deaths in Thailand from liver cancer and 6,759 deaths by cancer-related to alcohol consumption. Moreover, 5,680 Thai died in a road traffic accident, which was associated with binge drinking (Assanangkornchai et al., 2008). The common impacts of binge drinking are health consequences and economic costs.

Thailand's Alcoholic Beverage Control Act, established as per the Government Gazette (2008), regulates the production, sale, and consumption of alcoholic beverages in the country. This Act encompasses several vital elements. Firstly, it sets the legal drinking age at 20 years old, requiring individuals to be at least 20 to purchase and consume alcoholic beverages legally. Secondly, it mandates that establishments such as bars, restaurants, and liquor stores that sell or serve alcoholic beverages must obtain a legal license for operation. Thirdly, the Act specifies the hours of sale for alcoholic beverages, permitting sales from 11:00 AM to 2:00 PM and 5:00 PM to 12:00 AM, with additional restrictions during certain hours of the day and on specific days, like religious holidays. Lastly, the Act addresses advertising and promoting alcoholic beverages, imposing content restrictions to prevent misleading marketing and protect public health. It also includes regulations on the target audience to ensure that alcohol advertising does not target minors or encourage irresponsible drinking, as well as placement restrictions that limit advertising in certain media or near educational institutions.

One of the external factors that are uncontrollable on a personal level and influence alcohol use is the availability of alcoholic beverages. In Thailand, it can be confirmed that Thai people have easy access to alcohol. There is a point of sale near the residence; the average distance from home or office to an alcohol store is about 50–300 meters, and it takes 5–15 minutes only

to purchase alcohol. A cluster of alcohol stores is also an additional factor that affects the accessibility and consumption of alcohol (Thaikla et al., 2016), especially among children and young people. Thailand has a law to regulate the sale of alcoholic beverages with the provision of a license to sell alcoholic beverages and a ban on selling alcohol to people under the age of 20 and people with symptoms of intoxication; however, the results of a study of law enforcement to regulate the sale of alcoholic beverages only described the ability of beverage buyers. Alcohol purchasing among young people was found that they were able to buy alcoholic beverages without an identification card check or there is even no age question by the vendor (Thammakun et al., 2021), while the information on the number of the Excise Department's alcohol license cannot reflect the point of sale located in the actual area.

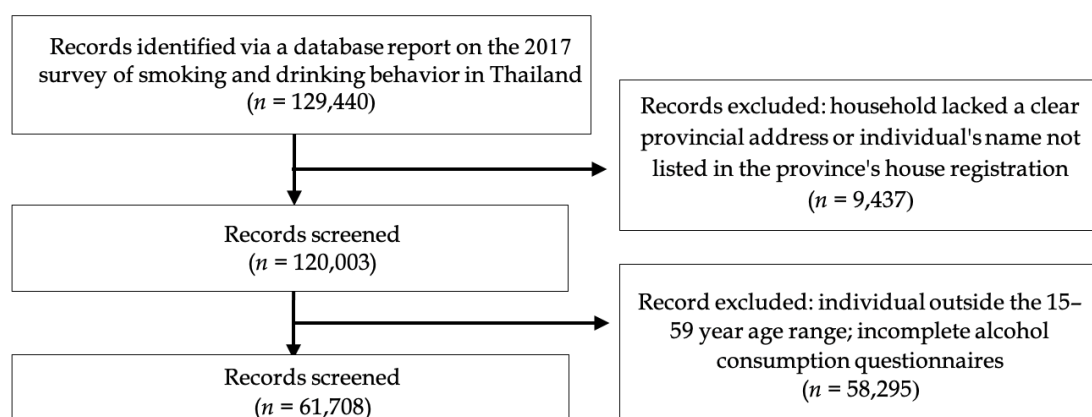
Currently, selling alcoholic beverages in Thailand is under the Alcoholic Beverage Control Act, B.E. 2551 (Government Gazette, 2008), which is one of the measures to control binge drinking in Thai people, aiming for a blood alcohol concentration (BAC) of less than 0.05% (Government Gazette, 2017). However, it has been criticized as not strictly enforced. Since alcohol consumption has more negative effects than positive, research conducted on the subject to guide law enforcement to control alcohol consumption is essential. This study investigated the potential of an association between law enforcement on alcoholic beverage control problems and binge drinking among the working-age population of Thailand.

Materials and methods

Study design

This cross-sectional study used data obtained from the National Statistical Office. It comprises secondary data from population sampling and questionnaires (National Statistical Office Thailand [NSO], 2017). The National Statistical Office Thailand (NSO) conducted a survey of smoking and alcohol consumption among people in Thailand. The study sample comprised 129,440 participants. In this study, the inclusion criterion was that participants must have completed the questionnaire. The exclusion criteria were: 1) The household lacked a clear address specifying the province, or the individual's name was not listed in the province's house registration. 2) The individual was not in the age range of 15–59 years. 3) The questionnaires concerning data on alcohol consumption were incomplete. This was particularly relevant as the survey focused on both smoking and drinking behaviors, and some respondents answered only the questions related to smoking. The sample size for this study was 61,708 individuals (Figure 1).

Figure 1: The Inclusion and Exclusion Criteria of Binge-Drinking Behavior Among Working-Age Groups in Thailand



Dependent and independent factors

The dependent variable was binge drinking behavior. Binge-drinking behavior was coded as “1” for binge-drinking behavior and “0” for no binge-drinking behavior. The sample group responding to the smoking and drinking behavior survey of the NSO Thailand 2017 (National Statistical Office Thailand, 2017) was measured as the mean and proportion of the sample who answered the smoking and drinking behavior survey in each province. Binge drinking is a form of excessive alcohol consumption characterized by the consumption of a large quantity of alcoholic beverages in a relatively short period. Measures to control alcohol consumption in Thailand were established (Government Gazette, 2008). According to the Road Traffic Act of Thailand, B.E. 2535, alcohol intoxication is defined as having a blood alcohol level greater than 50 mg (Government Gazette, 2017). In this current study, the criteria for determining heavy or binge drinking were adopted from the NSO (Table 1).

Table 1: Criteria for the Level of Binge Drinking

Types of alcoholic beverages	The amount of drinking that affects Binge Drinking
White liquor/Chang Chun/Herbal liquor	Five shots or one-fourth of a big bottle or one-half of a medium-sized bottle
Distilled liquor/mix	One-fourth of a big bottle, five shots, or eight mixing glasses
Beer	Four cans or two big bottles
Wine/Champagne	One big bottle or four glasses of wine
Cider/Wine coolers	Four one-half bottles or cans
Fermented liquor (rice liquor/Sato/locally made liquor)	One big bottle or two glasses and a half

Data analysis

All analyses used Stata version 10.0. Descriptive statistics, including frequency and percentage, were described as categorical data, whereas mean, standard deviation, median, and maximum minimum were illustrated for continuous data. A simple logistic regression was used to identify the association between each independent variable and alcohol dependence. The independent factors with p values $< .25$ significance were processed to the multivariable analysis using the multilevel mix-effected logistic regression (Hosmer et al., 2010) to identify the association of all determinants and binge drinking while controlling the other covariates. Mixed-effects modeling was used for fixed and random effects in regions and provinces. Random effects help model intra-cluster correlation since they can reduce the cluster-level-random effects (Hox et al., 2017; Kenward et al., 1997). The magnitude of association was presented as an adjusted odds ratio (AOR) with a 95% confidence interval (CI). A p value $< .05$ was a statistically significant level.

Ethical clearance

Human ethical permission for the study was obtained from the Ethics Committee in Human Research of Khon Kaen University (Cert. No. HE632180).

Results

Among 61,708 respondents, 54.45% were female, and 42.28% were in the 45–59 age group. Most of them were married (65.66%). The highest proportion finished primary education (36.56%). About 80% were employed, with a monthly household income median of 8,060 THB (230 USD). Referring to the risk behaviors, 18.79% were current tobacco use, and about 19.5% started drinking before the age of 20. Concerning alcoholic beverage control law enforcement during the past 12 months, 6.18% ever purchased alcohol at prohibition time, 3.30% ever drank illegal local distilled spirits, and 1.83% ever drank smuggled foreign liquor. Over one-third (37.09%) were exposed to the advertisement (Table 2).

Table 2: Demographic and Socioeconomic Distribution of Work Aged Population in Thailand ($n = 61,708$)

Factor	Number	Percent	Percent of Male	Percent of Female
Sociodemographic				
Genders				
Male	28,108	45.55	-	-
Female	33,600	54.45	-	-
Age Group				
< 20 years	5,768	9.35	49.71	50.29
20–24 years	4,468	7.24	48.84	51.16
25–44 years	25,382	41.13	45.87	54.13
45–59 years	26,090	42.28	43.76	56.24
Education Status				
No education	2,004	3.53	41.17	58.83
Pre elementary school	2,649	4.29	39.79	60.21
Elementary school	22,563	36.56	5.23	54.77
Secondary school	12,086	19.59	49.86	50.14
High school	8,321	13.48	49.51	53.49
High vocational school	2,691	4.36	54.44	45.56
Certificate/diploma	2,840	4.60	52.22	47.78
Bachelor's degree	7,506	12.16	37.08	62.92
Graduated/postgraduate	1,048	1.70	37.79	62.21
Marital status of parents				
Single	16,139	26.15	53.66	46.34
Married	40,516	65.66	44.27	55.73
Widow	1,886	3.06	14.58	85.42
Divorce	1,360	2.20	38.24	61.76
Separate	1,807	2.93	39.28	60.32
Occupation				
Skilled agriculture	17,372	28.15	50.49	49.51
Unemployment	12,862	20.84	30.45	69.55
Merchant	9,520	15.43	37.46	62.54
Basic occupation	5,776	9.36	49.31	50.69
Craftsman	4,738	7.68	71.53	28.47
Factory machine operation	3,394	5.50	67.41	32.59
Professional	2,903	4.70	33.48	66.52
Clerk	1,815	2.94	27.66	72.34
Technical staff	1,776	2.88	45.95	54.05
Manager/ senior government officer	1,552	2.52	67.01	32.99
Monthly income (THB)				

Investigating the Challenges in Alcoholic Beverage Control and Law Enforcement: Analyzing Binge Drinking Prevalence Among the Working-Age Population in Thailand Based on 2017 National Survey

Factor	Number	Percent	Percent of Male	Percent of Female
≤ 9,000	31,433	50.94	44.13	55.87
> 9,000	30,275	49.06	47.03	52.97
Mean (SD)	20,755.55	(30,452.64)		
Median (min:max)	8,060	(0:99,999)		
Risk Behavior				
Tobacco use				
Nonuse	50,116	81.21	33.96	66.04
Current use	10,230	16.58	96.07	3.93
Seldom use	1,362	2.21	92.66	7.34
Starting aged to drink				
Over 20 years	49,645	80.45	94.10	5.90
≤ 20 years	12,063	19.55	65.59	34.41
Mean (SD)		20.34 (5.31)		
Median (min:max)		20 (8:58)		
Alcoholic Beverage Control Law Enforcement problems (within the past 12 months)				
Bought alcoholic beverages on Buddhist day				
Ever	1,683	2.73	34.28	65.72
Never	60,025	97.27	90.05	9.95
Purchase alcohol at a prohibited time				
Ever	3,816	6.18	41.90	58.10
Never	57,892	93.82	91.60	8.40
Drank illegal local distilled spirits				
Ever	2,035	3.30	38.08	61.92
Never	59,673	96.70	90.25	9.75
Drank smuggled foreign liquor				
Ever	1,132	1.83	34.10	65.90
Never	60,576	98.17	89.55	10.45
Expose to the advertisement				
Ever	22,888	37.09	86.54	13.46
Never	38,820	62.91	89.70	10.30

The pattern-dependent variable is 11.47% of the prevalence of binge drinkers. More than 6% reported drinking at least once a month (6.8%), and separate details of alcohol drinking behavior by gender and age group are shown in Table 3.

Table 3: Number and Percentage of Among Working Aged Population in Thailand ($n = 61,708$)

	Number	Percent	95% CI	Percent of Male	Percent of Female	Percent of under 20 years	Percent of 20–24 years	Percent of 25–44 years	Percent of 45–59 years
Binge drinking Status (within 12 months ago)									
Not being binge drinking	54,630	88.53	88.27, 88.77	39.98	60.02	10.11	7.17	40.10	42.62
Being binge drinking	7,078	11.47	11.22, 11.72	88.57	11.43	3.48	7.78	49.10	39.64
Frequency of binge drinking ($n = 7,078$)									
Never drink	54,630	88.53	88.27, 88.77	39.98	60.02	10.11	7.17	40.10	42.62
Drink at least once a month.	4,194	6.80	6.60, 6.99	91.39	8.61	2.77	7.46	48.93	40.84

	Number	Percent	95% CI	Percent of Male	Percent of Female	Percent of under 20 years	Percent of 20-24 years	Percent of 25-44 years	Percent of 45-59 years
Drink a lot of times (more than once a month)	2,884	4.67	4.50, 4.84	84.47	15.53	4.51	8.25	49.34	37.90

The multilevel logistic regression analysis indicated that alcoholic beverage control law enforcement factors that were associated with binge drinking of the working-age population in Thailand were used to purchase alcohol at the prohibited time (AOR = 4.96, 95% CI [4.51, 5.46]), used to drink any smuggled foreign liquor (AOR = 4.37, 95% CI [3.73, 5.12]), used to drunk illegal locally distilled spirits (AOR = 4.06, 95% CI [3.58, 4.60]), starting drinking alcohol at the age less than 20-year-old (AOR = 2.73, 95% CI [2.56, 2.92]), used to buy alcoholic beverages on Buddhist day (AOR = 1.94, 95% CI [1.69, 2.23]), used to expose to the advertisement (adj. OR= 1.38, 95% CI [1.29, 1.47]). Other significant associated factors with binge drinking were being male (AOR = 4.51, 95% CI [4.13, 4.92]), aged 25-44 years old (AOR = 3.01, 95% CI [2.58, 3.51]), and tobacco use (AOR = 1.97, 95% CI [1.85, 2.11]) (Table 4).

Table 4: The Multivariable Analysis of Factors Associated With Binge Drinking of Working Aged Population in Thailand ($n = 61,708$)

Factors	Number	% BD	Crude OR	AOR	95% CI	<i>p</i> value
Alcoholic Beverage Control Law Enforcement Problems						
Purchase alcohol at a prohibited time						
Never (ref.)	57,892	8.40	1	1	1	< .001
Ever	3,816	58.10	15.12	4.96	4.51, 5.46	
Drank smuggled foreign liquor (within 12 months ago)						
Never (ref.)	60,576	10.45	1	1	1	< .001
Ever	1,132	65.90	16.55	4.37	3.73, 5.12	
Drank illegal local distilled spirits (within 12 months ago)						
Never (ref.)	59,673	9.75	1	1	1	< .001
Ever	2,035	61.92	15.04	4.06	3.58, 4.60	
Starting aged to drink						
Over 20 years (ref.)	49,645	5.90	1	1	1	< .001
≤ 20 years	12,063	34.41	8.37	2.73	2.56, 2.92	
Bought alcoholic beverages on Buddhist Day (within 12 months ago)						
Never (ref.)	60,025	9.95	1	1	1	< .001
Ever	1,683	65.72	17.34	1.94	1.69, 2.23	
Expose to the advertisement						
Never (ref.)	38,820	10.30	1	1	1	< .001
Ever	22,888	13.46	1.35	1.38	1.29, 1.47	
Demographic Factor						
Gender						
Female (ref.)	33,600	2.41	1	1	1	< .001
Male	28,108	22.30	11.63	4.51	4.13, 4.92	
Age Group						
< 20 years (ref.)	5,768	4.26	1	1	1	< .001
20-24 years	4,468	12.33	3.15	2.57	2.14, 3.08	
25-44 years	25,382	13.69	3.56	3.01	2.58, 3.51	
45-59 years	26,090	10.76	2.70	2.27	1.95, 2.65	

Factors	Number	% BD	Crude OR	AOR	95% CI	<i>p</i> value
Risk Behavioral						
Tobacco use						
Not use (ref.)	50,116	6.79	1	1	1	< .001
Used	11,592	31.72	6.38	1.97	1.85, 2.11	

Note: ref.= reference group; BD = binge drinking

Discussion

Our study revealed the factors that were associated with binge drinking in Thailand were alcoholic beverage control law enforcement problems, including beginning to drink alcohol before the age of 20, buying alcoholic beverages on Buddhist days, purchasing alcohol at prohibited times, consuming illegal and locally distilled spirits, drinking smuggled foreign liquor and ever exposed to the advertisement. Drinking alcohol is socially accepted in most places and is frequently used as a social lubricant, especially among men of young age (Carvalho, 2019; Limaye et al., 2013; Örnberg et al., 2014). As a result, Thailand has approximately 260,000 new drinkers each year. These data have attracted the interest of concerned parties because drinking among teens is associated with a slew of other problems outside health, including drug usage, violence, crime, and traffic fatalities (Assanangkornchai et al., 2008).

Thailand's Alcohol Control Policy appears under three primary laws, namely: 1) The Alcoholic Beverage Act B.E. 2008 of the Ministry of Public Health, which covers the main measures, namely physical access to alcoholic beverages, restriction and control, advertising and marketing promotion of alcoholic beverages, and treatment or rehabilitation of alcoholic beverage addicts. The latter sub-regulations under the said act were continuously issued. 2) The Excise Tax Act B.E. 2017 of the Ministry of Finance is the primary law for tax and price measures and the license system in the liquor trade, and 3) The Road Traffic Act B.E. 1979 of the Ministry of Interior is the primary law for control driving behavior after drinking alcohol (Pounpunwong, 2023).

Nowadays, in Thailand, there are many legal measures to regulate the use of alcoholic beverages, such as the prohibition time of alcohol purchasing. Both measurements have been implemented in terms of using legal measurements for controlling the selling of alcohol, purchasing alcohol from the selling place with a license, and setting the minimum drinking age intensely, as well as drivers' alcohol level tests. Even though all these measures have been implemented, many people were still found to violate the law. It was discovered that alcohol was purchased during the prohibited time by people under the age of 20 at the time required by law (Örnberg et al., 2014).

Although Thailand has laws regulating the ban on the purchase of alcoholic beverages for people under the age of 20, alcoholic beverages are illegally bought by those of lower ages. The illegal purchase of alcoholic beverages by youths has been found in Thailand. This shows the rigor and penalties of alcohol control laws in Thailand in raising awareness and awareness in terms of ethics and morals for the sale of alcoholic beverages to youth (Limaye et al., 2014), who found that as law enforcement on adolescents buying alcohol was not concerned, which the illegal purchase of alcoholic beverages by purchasing alcohol from a familiar alcohol store owner in the neighborhood, it is possible for young people to have easy access to alcohol as

well as the awareness of alcohol vendors in the community itself. There are many disadvantages of ethics in terms of trading alcohol, as there is a culture that allows the trade of alcohol in the name of socialization among youth.

Additionally, Puangsuwan et al. (2012) found that underaged adolescents were allowed to buy alcohol without inspecting their identification cards, irrespective of their age. It seems that either the number of youths are not aware of the negative impacts of drinking alcohol or shopkeepers are only focused on their trade and income instead of thinking about the health of youths before selling the alcohol to that group (Limaye et al., 2014), Drinking to exceed the prescribed standards as being binge drinking is causing the loss of self-control and consciousness which is consistent with recent studies that violate the law on drinking alcohol (Bendtsen et al., 2014; McNeil et al., 2014; Tavalacci et al., 2016) which causes many consequences such as traffic accidents which is the primary cause of death in humans, sexual violence for both the offender and the victim, memory deficits, and the higher risk of alcoholism in adulthood (Brown et al., 2000; Naimi et al., 2010). It also reflects the various penalties for drinking alcohol to exceed the standards set by the law of Thailand that are unclear – primarily lack of awareness, which leads to a violation of various drinking laws.

Thailand has not utilized its alcohol control rules adequately or optimally to dissuade individuals from drinking and, hence, achieve ideal health outcomes. To begin, alcohol taxation and pricing procedures have been adopted in part. Although there have been adjustments in alcohol tax levels and prices for alcoholic beverages, including advocating for a price mechanism to reduce the amount of alcohol consumption for the benefit of health outcomes for people in the country (Wagenaar et al., 2009), these benefits have not been well responded by the economic sector. However, the consumers consumed more illegal locally produced alcohol and/or smuggled foreign liquors.

The increases in alcohol excise tax are inconsistent with the economic shifts that could be attributed to inflationary changes in the era of globalization, which also found that there was an intervention in the alcohol control policy according to the economic benefits of the country in each period (Chaiyasong et al., 2011; Prasit et al., 2023), As with most policies, there are intended outputs and unintended consequences. According to the study carried out in Australia, it is predicted that alcohol consumers with low income might be able to control the frequency and level of regular alcohol consumption. Due to the financial liquidity of alcoholics, the amount of alcohol consumed is limited, hence spending a more significant proportion of income on alcohol and increased taxes. Yet, these effects are small and only concentrated among Binge drinkers.

In addition, despite the increase in excise taxes on alcoholic beverages, it had little impact on alcohol-drinking behavior in Thailand. This might be due to the meager price of alcohol produced in Thailand, including the illegal production of bootleg liquor in the community (National Statistical Office Thailand, 2017). Increases in alcohol taxes should consider the potential impact on unregistered alcohol consumption. This is because consumption of unrecorded alcohol (illegal, smuggled, homebrewed, and traditional alcohol), while age-group- and region-specific, is widespread throughout the country (Thamarangsi et al., 2013). could also tremendously contribute to alcohol-related harm through many mechanisms and, in turn, impact the formulation and outcomes of alcohol control policy (Wagenaar et al., 2005). As these unintended possibilities are similar to the situation occurring in Thailand, the responsible authorities may have to tread cautiously, taking into account economic decisions related to financial exchange as another critical factor in controlling alcohol consumption behavior.

In addition to controlling the supply side of the tax increase, restricting access to alcoholic beverages is another crucial factor in reducing the amount of alcohol consumption. In particular, strict information on the age of those who buy alcoholic beverages and the time when alcohol is permitted to be sold should be practical. However, Thailand still has a concern because even though there is a well-defined alcohol control measure regarding the age at which alcohol can be consumed and the time of purchase of alcoholic beverages, it is still found to smuggle such illegal alcoholic beverages. It can be assumed that there is still a lack of awareness among alcohol sellers about the negative impacts of alcohol instead of following legal practices and moral values, and lax surveillance by government officials is another factor that causes alcohol sellers to neglect their awareness of the sale of alcoholic beverages (Puangsuwan et al., 2012). In addition, the conducive policies within the country about drinking alcohol, especially the advertising policy, cause a higher tendency to drink alcohol consistently in many studies (Bendtsen et al., 2014; McNeil et al., 2014). Interpretation problems in the provisions of the Alcoholic Beverage Act It is a type of product required to control distribution or advertising. According to the Alcoholic Beverage Control Act 2008, Section 32, paragraph one (Gatethaiveerakul & Sucharikul, 2022).

Respondents also used to hear and look at advertisements of alcoholic beverages on radio and television, which also influenced binge drinking. This finding was supported by a study that found that alcohol consumption behavior is affected by exposure to television advertising campaigns. It could be due to the frequency of media stimulation and lack of maturity and ability to think and analyze content among children and adults who should face appropriate media. Therefore, effective intervention and strict enforcement of alcohol control laws may be necessary and should be consistently conducted because the enforcement checks, Although it has a considerable impact in terms of the national economy, could diminish over time (Naimi et al., 2010; Tavolacci et al., 2016; Thammawongsa et al., 2023; Wagenaar et al., 2009). Moreover, the role of the media in Thailand is vital in social change, especially in creating increased social awareness. This is to prevent and avoid the behavior of drinking alcohol, which is another alternative measure that focuses on changing people's positive attitudes and another essential factor legal measures that may increase alcohol compliance among retailers through marketing interventions to raise social awareness.

On the issue of decentralization and enforcement of alcohol control laws and regulations at both the national and local levels, it is evident that the central state is a top-down operating system, i.e., it is centralized, not decentralized, to the local area for management, by the nature of the operation that takes place, power tools are used through the system of documents such as orders, official books, etc. (NaNakhon, 2017). On the issue of law enforcement related to alcoholic beverages, by pointing out that measures to control the advertising of beverages, Thailand's Alcoholic Beverage Act B.E. 2008 continues to suffer from efficacy issues, and the solution to the problem continues to focus on centralization of power through intensive state law enforcement (Leeviroth et al., 2016).

On the issue of bureaucratic work that emphasizes the process of working under the alcohol policy, that is, the emphasis is placed on government agencies in public relations communication to motivate or persuade the public or establishments or related persons to agree on the objective goals of the alcohol control policy. This is to create a uniform approach to ensure compliance with the alcohol control policy and lead to compliance with the law by practitioners and law enforcement officials. If the beverage control policy is pushed to be public policy by society, it is said that such characteristics promote the democratic process.

The top-down policy is imposed by the government and, in effect, requires officials and citizens to comply with it. Failure to do so will result in legal consequences and punishments, unlike public policy by society, which is a bottom-up policy that focuses on the needs and sufferings of society. It also encourages participation in resolving or developing this issue. Finally, this may lead to the declaration of the common intention of society on the framework of directions and practices in the manner of cooperation based on the public's best interests (Pounpunwong, 2023). The effectiveness of alcohol regulation depends on the critical role government agencies play together with all relevant agencies involved in developing policies and laws on alcohol control that are comprehensive and effective in all areas. However, this study found the scope of action limited and scattered for Thailand. The probable cause for the sub-optimal effectiveness of alcohol control may be the lack of cooperation between various government agencies and private agencies. Hence, Thailand should increase its collaborative efforts in implementing alcohol-related measures to maximize the effectiveness of the hard-fought alcohol policy.

Conclusion

The use of alcohol is becoming ingrained in Thai society. This study revealed some significant factors, which are drinking alcohol at an early age, the gap in law enforcement on alcoholic beverage control resulting in binge drinking among the working-age population, especially among males, and tobacco use behaviors in early adulthood. Strenuous implementation of statutory regulations in the interests of the public is needed. Restricting alcohol outlets with restrictions on the number of stores and establishing surveillance standards strictly check for alcoholic beverages primarily in the segment of alcohol sales to youth and adolescents, including training for alcohol sales licenses for sellers of alcoholic beverages to raise awareness of morality and penalties for violating the alcohol control law. This is another factor that government agencies are involved in designing policies and penalties for violating alcohol control laws that can be practical and effective comprehensively in Thailand.

Acknowledgments

The authors sincerely thank the National Statistical Office of Thailand: Smoking and Drinking Behavior Survey 2017 for the dataset. We acknowledge Dr. Lorence Nuebert for editing the manuscript via Publication Clinic KKU, Thailand. Thanks to the Faculty of Public Health, Khon Kaen University, Thailand, for the support.

References

- Assanangkornchai, S., Muekthong, A., & Indhanon, T. A. (2008). การเฝ้าระวังพฤติกรรมการบริโภคเครื่องดื่มแอลกอฮอล์และพฤติกรรมเสี่ยงต่อสุขภาพของนักเรียนระดับมัธยมศึกษาในประเทศไทย [A surveillance of drinking behaviors and other health-risk behaviors among high school students in Thailand]. PimDee Printing. <https://kb.hsri.or.th/dspace/handle/11228/2784?locale-attribute=en>
- Bendtsen, P., Damsgaard, M. T., Huckle, T., Casswell, S., Kuntsche, E., Arnold, P., de Looze, M., Hofmann, F., Hublet, A., Simons-Morton, B. G., Ter Bogt, T., & Holstein, B. E. (2014). Adolescent alcohol use: A reflection of national drinking patterns and policy? *Addiction*, 109(11), 1857–1868. <https://doi.org/10.1111/add.12681>

Investigating the Challenges in Alcoholic Beverage Control and Law Enforcement: Analyzing Binge Drinking Prevalence Among the Working-Age Population in Thailand Based on 2017 National Survey

- Brewer, R. D., & Swahn, M. H. (2005). Binge drinking and violence. *JAMA*, 294(5), 616–618. <https://doi.org/10.1001/jama.294.5.616>
- Brown, S. A., Tapert, S. F., Granholm, E., & Delis, D. C. (2000). Neurocognitive functioning of adolescents: Effects of protracted alcohol use. *Alcohol: Clinical & Experimental Research*, 24(2), 164–171. <https://doi.org/10.1111/j.1530-0277.2000.tb04586.x>
- Carvalho, A. F., Heilig, M., Perez, A., Probst, C., & Rehm, J. (2019). Alcohol use disorders. *The Lancet*, 394(10200), 781–792. [https://doi.org/10.1016/S0140-6736\(19\)31775-1](https://doi.org/10.1016/S0140-6736(19)31775-1)
- Chaiyasong, S., Limwattananon, S., Limwattananon, C., Thamarangsi, T., Tangchareonsathien, V., & Schommer, J. C. (2010). Impacts of excise tax raise on illegal and total alcohol consumption: A Thai experience. *Drugs: Education, Prevention and Policy*, 18(2), 90–99. <https://doi.org/10.3109/09687637.2010.484451>
- Gatethaiveerakul, C., & Sucharikul, T. (2022). ปัญหากฎหมายซึ่งเกิดขึ้นจากพระราชบัญญัติควบคุมเครื่องดื่มแอลกอฮอล์ พ.ศ.2551:ศึกษาเฉพาะกรณีการห้ามโฆษณาเครื่องดื่มแอลกอฮอล์ทางสื่ออิเล็กทรอนิกส์ [Legal issues arising from the act controlling alcoholic beverages B.E. 2551: Study only on the prohibition of electronic advertisements on alcoholic beverages]. *Journal of MCU Nakhondhat*, 9(4), 358–373. <https://so03.tci-thaijo.org/index.php/JMND/article/view/260884>
- Government Gazette. (2008, February 13). พระราชบัญญัติควบคุมเครื่องดื่มแอลกอฮอล์ พ.ศ. 2551 [Alcoholic Beverage Control Act. B.E. 2551]. <https://ddc.moph.go.th/uploads/files/14020220209072300.pdf>
- Government Gazette. (2017). พระราชบัญญัติจราจรทางบก พ.ศ.2522 ฉบับปรับปรุง พ.ศ. 2560 [Road Traffic Act, B.E. 1979 Latest update 2017]. <http://asean-law.senate.go.th/file/law/pdf/file-2938-25.pdf>
- Griswold, M., Fullman, N., Hawley, C., Arian, N., Zimsen, S. R. M., Tymeson, H., Venkateswaran, V., Tapp, A. D., Forouzanfar, M. H., Salama, J., Abate, K. H., Abate, D., Abay, S. M., Abbafati, C., Abdulkader, R. S., Zegeye, A., Aboyans, V., Abrar, M. M., Acharya, P., . . . Gakidou, E. (2018). Alcohol use and burden for 195 countries and territories, 1990–2016: A systematic analysis for the Global Burden of Disease Study 2016. *The Lancet*, 392(10152), 1015–1035. [https://doi.org/10.1016/s0140-6736\(18\)31310-2](https://doi.org/10.1016/s0140-6736(18)31310-2)
- Hosmer, D. W., Jr, Lemeshow, S., & Sturdivant, R. X. (2013). *Applied logistic regression*. John Wiley & Sons.
- Hox, J. J., Moerbeek, M., & Van De Schoot, R. (2017). *Multilevel analysis: Techniques and applications* (3rd ed.). Routledge.
- Kenward, M. G., & Roger, J. (1997). Small sample inference for fixed effects from restricted maximum likelihood. *Biometrics*, 53(3), 983–987. <https://doi.org/10.2307/2533558>
- Leeviroth, P., Pichai, P., Singhasem, P. & Rungchamrat, J. (2016). Acceptance and development of alcoholic policy. *Journal of Humanities and Social Sciences Thonburi University*, 10(22), 28–39. https://www.thonburi-u.ac.th/Journal/Document/10-22/Journal10_22_3.pdf
- Limaye, R. J., Srirojn, B., Lilleston, P., Aramrattana, A., Thomson, N., Celentano, D. D., & Sherman, S. G. (2012). A qualitative exploration of the effects of increasing the minimum purchase age of alcohol in Thailand. *Drug and Alcohol Review*, 32(1), 100–105. <https://doi.org/10.1111/j.1465-3362.2012.00486.x>
- McNeil, E., Inthawong, Y., & Assanangkornchai, S. (2015). Access to alcohol and binge drinking among vocational college students: A multilevel study in a tourist destination province of Thailand. *The International Journal of Alcohol and Drug Research*, 5(2), 47–55. <https://doi.org/10.7895/ijadr.v5i2.214>
- Mokdad, A. H., Marks, J. S., Stroup, D. F., & Gerberding, J. L. (2004). Actual causes of death in the United States, 2000. *JAMA*, 291(10), 1238–1245. <https://doi.org/10.1001/jama.291.10.1238>
- NaNakhon, J. (2017). Measures of controlling alcohol advertisements in accordance with the Alcohol Control Act B. E. 2008. *Academic Journal Phranakhon Rajabhat University*, 7(2), 44–47. <https://so01.tci-thaijo.org/index.php/AJPU/article/view/63802>
- Naimi, T. S., Nelson, D. E., & Brewer, R. D. (2010). The intensity of binge alcohol consumption among US adults. *American Journal of Preventive Medicine*, 38(2), 201–207. <https://doi.org/10.1016/j.amepre.2009.09.039>
- National Institute of Alcohol Abuse and Alcoholism (NIAAA). (2004). NIAAA council approves definition of binge drinking. *NIAAA Newsletter*, 3, 3. https://www.niaaa.nih.gov/sites/default/files/newsletters/Newsletter_Number3.pdf

- National Statistical Office Thailand. (2017). การสำรวจพฤติกรรมการสูบบุหรี่และการดื่มสุราของประชากร พ.ศ.2560 [The Smoking and Drinking Behaviour Survey 2017]. Statistical Forecasting Division. https://www.nso.go.th/nsoweb/nso/survey_detail/IX
- Örnberg, J. C., & Room, R. (2014). Impacts of tourism on drinking and alcohol policy in low-and middle-income countries: A selective thematic review. *Contemporary Drug Problems*, 41(2), 145-169. <https://doi.org/10.1177/009145091404100202>
- Pounpunwong, W. (2023). การกระจายอำนาจภายใต้การบังคับใช้กฎหมายและข้อบังคับในนโยบายการควบคุมเครื่องดื่มแอลกอฮอล์ ทั้งในระดับชาติและท้องถิ่น [Decentralization under the enforcement of laws and regulations in national and local alcohol control policies]. *Humanity and Social Science Journal*, 14(2), 28-59. https://so02.tci-thaijo.org/index.php/human_ubu/article/view/255211
- Prasit, N., Laohasiriwong, W., Phimha, S., Bouphan, P., Senahad, N., Yotha, N., Nonthamat, A., Kongsrima, S., & Thummawongsa, P. (2023). Evaluation of binge drinking behavior among working-age populations in Thailand using GIS: A national survey in 2017. *Journal of Public Health and Development*, 21(2), 140-151. <https://doi.org/10.55131/jphd/2023/210212>
- Puangsuwan, A., Phakdeesettakun, K., Thamarangsi, T., & Chaiyasong, S. (2012). Compliance of off-premise alcohol retailers with the minimum purchase age law. *WHO South-East Asia Journal of Public Health*, 1(4), 412-422. <https://doi.org/10.4103/2224-3151.207043>
- Tavolacci, M., Boerg, E., Richard, L., Meyrignac, G., Déchelotte, P., & Ladner, J. (2016). Prevalence of binge drinking and associated behaviours among 3286 college students in France. *BMC Public Health*, 16(1), Article 178. <https://doi.org/10.1186/s12889-016-2863-x>
- Thaikla, K., Jiraporncharoen, W., Semmahasak, S., Likhitsathian, S., & Angkurawaranon, C. (2016). Recent trends in alcohol outlet density, distances from educational institutions and sales campaigns in Chiang Mai municipality (metropolitan), Thailand: Should we be worried for our youths? *Alcohol and Alcoholism*, 51(2), 210-214. <https://doi.org/10.1093/alcalc/agn086>
- Thamarangsi, T. (2013). Unrecorded alcohol: Significant neglected challenges. *Addiction*, 108(12), 2048-2050. <http://dx.doi.org/10.1111/add.12300>
- Thammakun, T., Pensirinapa, N., Salawongluk, T., Thammakun, T., & Kraipui, N., (2021). การเข้าถึงเครื่องดื่มแอลกอฮอล์ของนักเรียนนักศึกษาบริเวณรอบสถานศึกษาเขตเมือง [Liquor accessibility among students around educational institutes: Urban Community]. *Journal of Safety and Health*, 14(2), 89-100. <https://he01.tci-thaijo.org/index.php/JSH/article/view/247045>
- Thammawongsa, P., Laohasiriwong, W., Yotha, N., Nonthamat, A., & Prasit, N. (2023). Influence of socioeconomics and social marketing on smoking in Thailand: A National Survey in 2017. *Tobacco Prevention & Cessation*, 9, 1-8. <https://doi.org/10.18332/tpc/169501>
- Wagenaar, A. C., Salois, M. J., & Komro, K. A. (2009). Effects of beverage alcohol price and tax levels on drinking: A meta-analysis of 1003 estimates from 112 studies. *Addiction*, 104(2), 179-190. <http://dx.doi.org/10.1111/j.1360-0443.2008.02438.x>
- Wagenaar, A. C., Toomey, T. L., & Erickson, D. J. (2005). Preventing youth access to alcohol: outcomes from a multi-community time-series trial. *Addiction*, 100(3), 335-345. <https://doi.org/10.1111/j.1360-0443.2005.00973.x>
- World Health Organization (WHO). (2018, September 27). *Global Status Report on Alcohol and Health 2018*. <https://www.who.int/publications/i/item/9789241565639>