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PATTERNS OF DRINKING IN THAI MEN

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Abstract — Alcohol problems have increased considerably in Thailand in recent years, in common with many other countries in South East Asia. Little is known about the patterns or contexts of alcohol consumption in these countries, and so efforts to develop preventative strategies have been hampered. To identify current patterns related to alcohol consumption, we recruited 91 alcohol-dependent subjects, 77 hazardous or harmful drinkers, and 144 abstainers or light drinkers. A structured interview incorporating the World Health Organization 'tri-level' method to determine the amount and frequency of drinking, and the Alcohol Use Disorders and Associated Disabilities to diagnose alcohol dependence and harmful drinking was used. Median alcohol intake was 75 and 49 g/drinking day in the alcohol-dependent and harmful or hazardous groups respectively. The former group drank on average 25 days/month, whereas the harmful or hazardous drinkers drank 10 days/month. Drinking alone was more common in the alcohol-dependent group (67%), whereas harmful or hazardous drinkers typically drank with friends (58%), and infrequent drinkers drank only at social functions (61%). Only 28% of alcohol-dependent subjects perceived themselves as dependent on alcohol. The alcohol-dependent subjects and hazardous or harmful drinkers were more likely to currently smoke cigarettes and have a history of marijuana use than were non-drinkers, infrequent or light drinkers. Antisocial personality disorder was more commonly associated with alcohol dependence. In conclusion, alcohol dependence was characterized by continual drinking, whereas hazardous or harmful consumption was associated with an intermittent pattern. Other forms of substance use and personality disorder were associated with alcohol dependence. Clearer understanding of these factors would be of great benefit in planning an intervention programme for excessive drinking in Thailand.

INTRODUCTION

Alcohol abuse and dependence are an increasing problem in Thailand and worldwide. In Thailand in 1985, 26% of the adult population drank alcohol and 60% of households had at least one member who drank (Institute of Population and Social Research, 1985). In 1991, 12.4 million people or 31.4% of the population aged over 14 years drank alcohol (Office of National Statistics, 1992). The majority started drinking between the ages of 15 and 19 years. Among emergency room patients of three regional hospitals in Thailand, the overall prevalence rate of alcohol problems, detected by the Alcohol Use Disorders Identification Test (AUDIT), adjusted for age and diagnostic classification, was 39% for males and 8% for females (Lapham *et al*., 1998).

Excessive alcohol consumption causes a wide range of adverse social and medical consequences and considerable economic loss. A recent study revealed that one-third of road traffic accident patients were under the influence of alcohol, and consumption of alcohol 1 h before driving was associated with a threefold increased risk of traffic accident (Bohning and Na-Ayuthaya, 1997). An estimated 45% of deaths from traffic accidents in Thailand were due to alcohol consumption (Health System Research Institute, 1995). Furthermore, the economic cost of hospitalized alcohol-related illness per person per admission was estimated to be over 20 000 Baht (US$800) in 1992 which included medical treatment costs and indirect costs from lost earnings, decreased productivity of the patient and family, transportation costs, and other non-medical equipment and food (Assanangkornchai, 1993).

Epidemiological research worldwide has examined a variety of individual characteristics, including age, gender, race, and ethnicity, that are related to alcohol consumption, and pathological patterns of consumption, such as hazardous or harmful use and alcohol dependence. Data on drinking patterns in Thailand are scarce. With the increasing prevalence of drinking and alcohol-related problems (Office of National Statistics, 1992), a study of drinking patterns and settings is needed to understand the characteristics of drinkers and to determine the appropriate preventative intervention. This study is part of a larger project which aims to identify risk factors for alcohol dependence and hazardous or harmful drinking in Thai men. The objective of the current study was to compare the drinking behaviour and settings for drinking between various types of male drinkers in Thailand. This was done by recruiting and characterizing persons who were harmful or hazardous drinkers, or alcohol-dependent, and contrasting their drinking behaviours and socio-demographic characteristics with those of a non- or infrequently drinking control group. In Thailand, drinking among women is not common, approximately 95% of the population in Thailand are Buddhist, and so the study focused on the Buddhist male population.

SUBJECTS AND METHODS

Subjects were eligible for inclusion if they were Buddhist males, aged 18 years or over, and were able to understand Thai. Those who were too ill to be interviewed or had a major psychiatric illness or cognitive disorder were excluded. Subjects were recruited from four different sites: 184 patients from a university hospital, 87 patients from a regional hospital, 11 patients from a community hospital, and 30 volunteers

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who were hospital personnel and their friends or relatives. The volunteers fulfilled the same age and demographic criteria as the hospital sample. Hospital subjects were out-patients of medical and general practice clinics, or in-patients of the surgical, medical, and orthopaedic wards and were seeking medical care for non-alcohol-related reasons. In addition, known cases of alcohol dependence from the psychiatric clinic were recruited.

Definition of categories

Subjects were classified into three groups according to their patterns of consumption and alcohol-related experiences: (1) non-drinkers, infrequent or light drinkers; (2) hazardous or harmful drinkers; (3) alcohol-dependent subjects. The non-drinkers, infrequent or light drinkers included either total abstainers or persons who drank less than once a month or less than 30 g in a drinking day, and who had never had any alcohol-related harmful experience and did not fulfil the criteria for alcohol dependence. The hazardous drinkers were those who drank at least 30 g in a drinking day and at least 2 days/month without any alcohol-related harmful experience. The harmful drinkers were subjects who drank at least 2 days/month and fulfilled at least one criterion of harmful drinking in the past year (World Health Organization, 1992). Alcohol dependence was diagnosed on the basis of at least three ICD-10 criteria of alcohol dependence in the past year, regardless of the drinking intensity and frequency (World Health Organization, 1992).

The definitions of hazardous and harmful drinking were based on the World Health Organization (WHO) memorandum of 1981 with the criteria most applicable to Thailand (Edwards *et al*., 1981). The cut-off of 30 g/drinking day was chosen on the basis of the observation of general patterns of alcohol consumption in Thai men and expert opinion. Thirty grams of ethanol are approximately equivalent to one bottle of Thai beer (650 cc, 4.5% alcohol) or two 50-cc cupfuls of Thai whisky (35% alcohol), which are generally accepted as the amount of intake on a social drinking occasion for Thai men. Drinking intensity (monthly intake in g of absolute ethanol divided by days of drinking in a typical month) rather than average daily intake is reported, as this gives information not only on regular drinkers, but also episodic drinkers, whose drinking is poorly assessed by a measure of average daily consumption. Thus, episodic heavy drinking or binge drinking, which is associated with a significant risk of harm, particularly from trauma, is included in the category of hazardous drinking.

Data collection

Subjects were interviewed using a face-to-face structured questionnaire which included the WHO 'tri-level' alcohol consumption questionnaire (Saunders and Aasland, 1987) and the alcohol experiences section of the Alcohol Use Disorders and Associated Disabilities Interview Schedule (AUDADIS) questionnaire (Grant *et al*., 1995). The WHO 'tri-level' method has established test–retest reliability and validity in 12 countries. The subject is asked to think of his drinking pattern in terms of low, medium, and high level drinking days. Type of beverage, amount of intake (in bottles or cups or glasses) and days of drinking at each level in the past month and in a typical month are recorded. For each of the three levels of alcohol intake obtained from the 'tri-level' questionnaire, the amount of alcohol consumed was calculated in [volume × concentration × specific gravity of alcohol (0.793)] for each type of drink. The amount of alcohol consumed at each of the three levels of intake was then multiplied by the number of days of drinking at that level in the last month. The total consumption in a typical month was similarly the summation of consumption on the low, medium, and high level drinking days in such a month. The following consumption indices were then calculated: (1) frequency of drinking: (drinking days/month); (2) average daily intake: total alcohol consumed in a month divided by 30.42 days (g/day); (3) intensity of drinking: the total alcohol consumed in a month divided by total days of drinking (g/drinking day).

The AUDADIS is a structured, standardized instrument, which provides valid and reliable diagnoses of alcohol dependence and harmful use or alcohol abuse in a general population (Grant *et al*., 1995). There are 32 questions which inquire into experiences of harmful use or abuse and alcohol dependence in the past year and in the person's lifetime. Diagnoses of harmful drinking and alcohol dependence are made algorithmically according to DSM-IV and ICD-10 criteria. The responses to the questions on the last 12 months were considered positive only if the experience happened twice or more in the 12-month period. The version of AUDADIS used in the International Collaborative Project of Biological Markers sponsored by WHO and the International Society for Biomedical Research on Alcoholism (ISBRA/WHO) was used in this study.

The questionnaires were translated into Thai, the wording was modified to ease understanding by Thai lay-people, independently back-translated to English and the meaning verified to ensure accuracy of translation. They were pre-tested on 10 patients with alcohol dependence and 10 infrequent or light drinkers. Their acceptability and comprehensibility were judged to be satisfactory. The interview was administered by the first author (S.A.) to 244 subjects. A research assistant who had completed 5 years of medical training and was trained in use of the questionnaire administered it to 80 subjects. As the questionnaire was fully structured, and both interviewers were consistent in following the questions, interviewer bias was unlikely to have occurred.

The interview schedule also included questions on demographic characteristics, concurrent drug use and associated mental disorders, drinking environment (such as drinking places and companions), access to alcohol, and the subject's perception of the prevalence of drinking in the community.

Statistical analysis

Distribution of consumption patterns and drinking environment variables among subjects of each drinking category was examined. Differences in consumption between age groups were plotted within each group of subjects. To test for change of alcohol consumption by age, age group was fitted in a trend term in linear regression models. Polytomous regression analyses, in which non-drinking, infrequent or light drinking was defined as the reference category, were performed to examine the association between drinking setting variables and category of subjects, controlling for age group, and other demographic variables (e.g. educational level, marital status, occupational class, and location of residence).

Table 1. Socio-demographic characteristics of the subjects by drinking categories

Factor	Non-drinkers or infrequent drinkers (n = 144)	Hazardous or harmful drinkers (n = 77)	Alcohol-dependent subjects (n = 91)
Mean age ± SD	46 ± 14.5	39 ± 12.7*	41 ± 11.8
Married, *n* (%)	122 (85)	51 (66)*	71 (78)
Secondary school-higher education, *n* (%)	66 (44)	36 (47)	47 (52)
Living in rural areas, *n* (%)	68 (47)	31 (40)	43 (47)
Working part- or full-time, *n* (%)	122 (85)	67 (87)	82 (91)
Unskilled working class, *n* (%)	82 (57)	41 (54)	46 (50)

*P < 0.05 for comparison with non-drinkers or infrequent drinkers group.

Table 2. Consumption indices by drinking categories

Index	Non-drinkers or infrequent drinkers	Hazardous or harmful drinkers	Alcohol-dependent subjects
Total consumption per month (g)			
Median	0	595	1667
Range	0–780	43–3622	181–8129
Drinking intensity (g/drinking day)			
Median	0	49	75
Range	0–27	21–312	21–325
Drinking frequency (days/month)			
Median	0	10	25
Range	0–30	2–30	4–30

RESULTS

Demographic characteristics

These are shown in Table 1. We recruited 312 respondents, of whom 91 were alcohol-dependent persons, 77 hazardous or harmful drinkers and 144 infrequent or non-drinkers, during the period August 1995 to May 1996. Their ages ranged from 19 to 77 years. The hazardous or harmful drinkers were significantly younger (P = 0.001) and more likely to be single or widowed (P = 0.008) than non-drinkers, infrequent or light drinkers. Five subjects were illiterate. About half of the subjects had attained only primary school education and were unskilled workers and almost half of the subjects were living in rural areas (Table 1).

Consumption indices

These are given in Table 2. Of the non-drinkers, infrequent or light drinkers, 37.5% were total abstainers. The remainder consumed between 3 g alcohol once a month and 27 g/day most days. Median intensity was 49 g/drinking day in the hazardous or harmful drinkers, and 75 g/drinking day in the alcohol-dependent subjects. The alcohol-dependent subjects drank on average 23 days/month, whereas the hazardous or harmful drinkers drank 14 days and the infrequent or light drinkers drank only 3 days/month.

Figure 1 shows the means of these consumption indices within each age group stratified by group of subjects. The frequency of drinking increased steadily with age in the alcohol-dependent group (P < 0.0001), and in the hazardous or harmful drinker group (P < 0.0001), though less consistently. However, there was no such effect in the infrequent drinker group (P = 0.520). Mean intensity decreased with age in the alcohol-dependent (P = 0.002) and hazardous or harmful drinker groups (P = 0.031). Among the alcohol-dependent individuals aged 60 years and over, the drinking intensity was around 65 g/drinking day, while their drinking frequency was about 28 days/month. In comparison, the drinking intensity of those aged between 19–29 years was about 110 g/drinking day and their frequency was on average 17 days/month. Overall, the alcohol-dependent individuals tended to

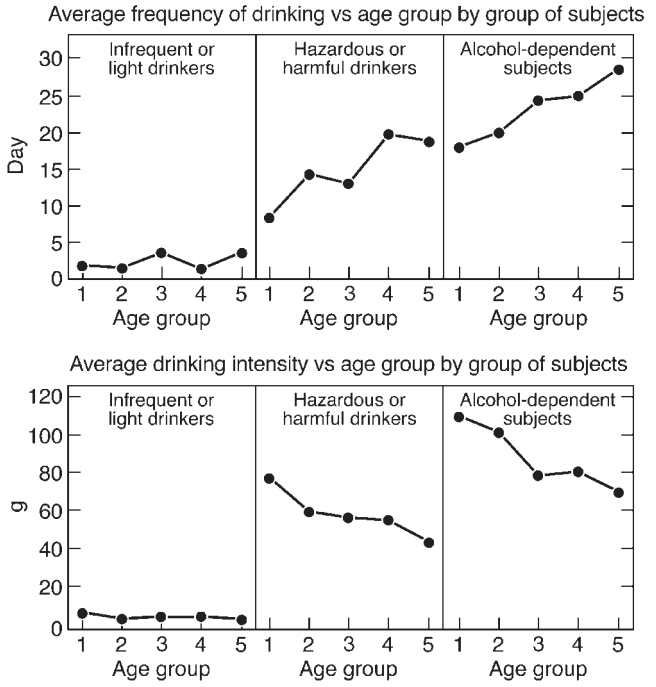

Fig. 1. Consumption indices by age group for each drinking category. Age groups: 1 = 19–29, 2 = 30–39, 3 = 40–49, 4 = 50–59, 5 = >60 years.

drink a higher amount with a higher frequency than the hazardous or harmful drinkers. The older subjects drank more often than the younger men but with a smaller amount/drinking day.

History of first occasion of drinking

The alcohol-dependent subjects started regular drinking at the age of 22 ± 5.5 years (mean ± SD), the hazardous or harmful drinkers at 23 ± 8.3 years, and the infrequent or light drinkers at 24 ± 7.9 years ($P > 0.05$). The most common reason for starting drinking across the three groups was peer influence. The other reasons for starting drinking were wanting to facilitate socializing and wanting to try out the effect of alcohol (Table 3). Some subjects said that they started drinking, because they wanted to imitate older adults so that they would appear more mature. The majority of subjects in all three groups had their first drinking occasion outside their own home. Only 6%, 5%, and 9% of the infrequent or light drinkers, hazardous or harmful drinkers and alcohol-dependent individuals had their first drinking experience at home with family members.

Drinking setting and behaviours

The most common type of alcoholic beverage for drinkers in this study was white spirit (a cheap alcoholic drink distilled from rice, 35–40% alcohol), followed by Thai whisky. No subject in this study reported drinking wine and few persons drank beer (10%) or imported whisky (5%).

The most common place for subjects to drink in all three groups was in their own home or a relative's home nearby. The village general store was a popular drinking place for rural villagers (28–37%). Other drinking places were the work place and picnic areas such as a beach or a waterfall. The alcohol-dependent subjects were more likely to drink at home than were non-drinkers or infrequent drinkers (Table 3).

The reasons given for drinking by alcohol-dependent subjects included drinking for fun or as part of entertaining friends and drinking after work as a form of rest or relaxation. Drinking for fun and when entertaining was also the most common response in the hazardous or harmful drinking group. The infrequent or light drinkers tended to drink in the context of social function, for instance, a funeral ceremony, a wedding party or a New Year celebration party. The alcohol-dependent

Table 3. Drinking characteristics by type of drinker

Variables	Non-drinkers or infrequent drinkers *n* (%)	Hazardous or harmful drinkers *n* (%)	Alcohol-dependent subjects *n* (%)	Hazardous or harmful drinkers/non-drinkers or infrequent drinkers OR (95% CI)	Alcohol-dependent subjects/non-drinkers or infrequent drinkers OR (95% CI)
Drinking place					
Home	49 (50)	37 (52)	56 (69)	1	1
Outside home	49 (50)	34 (48)	25 (30)	0.9 (0.5–1.8)	**0.4 (0.2–0.8)**
Companion					
Alone, with family	16 (16)	12 (17)	23 (28)	1	1
With friends	82 (84)	59 (83)	58 (72)	0.6 (0.2–1.6)	**0.3 (0.1–0.7)**
Reason					
Social functions	60 (61)	8 (11)	2 (2)	1	1
Fun, appetizer, induce sleep	39 (39)	63 (88)	79 (97)	**6.7 (2.9–15.5)**	**36.1 (8.4–154.7)**
Drinking time					
Dinner	75 (76)	36 (51)	38 (47)	1	1
Evening until late night	12 (12)	29 (41)	31 (38)	**4.1 (1.89–9.5)**	**4.6 (2.0–10.3)**
No regular time	10 (10)	6 (8)	7 (8)	0.9 (0.3–2.8)	2.1 (0.8–5.4)
Drinking alone					
Never	73 (75)	46 (65)	27 (33)	1	1
Sometimes	11 (11)	12 (17)	25 (31)	1.9 (0.7–4.9)	**7.1 (2.9–17.2)**
Usually	14 (14)	13 (18)	29 (36)	2.2 (0.9–5.7)	**8.9 (3.7–21.4)**
Reason for first drink					
Peer influence	67 (60)	34 (48)	46 (58)	1	1
Wanting to try	17 (15)	22 (31)	26 (32)	2.0 (0.9–4.5)	2.0 (0.9–4.2)
Socializing	27 (25)	15 (21)	8 (10)	1.1 (0.5–2.6)	0.4 (0.2–1.1)
Perception of drinking popularity[a]					
Similar	28 (21)	29 (41)	17 (22)	1	1
More common	31 (24)	18 (25)	34 (45)	0.7 (0.3–1.7)	**2.5 (1.1–5.7)**
Less common	73 (55)	24 (34)	25 (33)	**0.3 (0.2–0.7)**	0.6 (0.3–1.4)
Perception of male drinkers[b]					
Few	70 (53)	26 (37)	19 (24)	1	1
Most men (≥70%)	42 (31)	30 (42)	46 (58)	**2.0 (1.0–4.0)**	**4.6 (2.3–9.3)**
Half of men (40–60%)	21 (16)	15 (21)	14 (18)	1.9 (0.8–4.5)	**2.5 (1.1–6.2)**
Cigarette smoking					
Never	51 (35)	18 (23)	10 (11)	1	1
Current	43 (30)	42 (55)	66 (73)	**2.9 (1.4–6.2)**	**10.7 (4.6–24.9)**
Marijuana use					
Never	134 (92)	67 (87)	66 (73)	1	1
Ever used	11 (8)	10 (13)	25 (27)	1.3 (0.5–3.4)	**3.9 (1.8–8.7)**

Odds ratio (OR) were adjusted by age group, marital status, working status, occupational social class, education, and location of residency. Significant OR and confidence intervals (CI) are in bold type. Percentages are rounded to the nearest whole number.

[a]The perceived popularity of drinking in the subject's own community compared with another community.

[b]The proportion of males in the subject's community that he perceived to be drinkers.

subjects and hazardous or harmful drinkers were seven to 36 times more likely to use alcohol as an appetizer or for fun, entertaining or to induce sleep, compared to the infrequent or light drinkers (Table 3).

Dinner was the usual time for drinking in about half of all respondents. Some drinkers drank before their meal and stopped when having the meal, whereas others drank during dinner. The hazardous or harmful drinkers and alcohol-dependent subjects tended to have a prolonged period of drinking — that is they started their drinking in the evening after work and continued until midnight or till public house closing time at 01:00–02:00 h. The alcohol-dependent subjects were 4.6 times as likely to drink from evening until late at night, compared to infrequent or light drinkers who drank at dinner time (Table 3). Seven (8%) alcohol-dependent subjects reported that they usually drank all through the day by gulping one to two cups (50 cc) of alcohol at a time.

Drinking alone is generally considered in Thailand to be characteristic of those who are dependent on alcohol. Thus, 25% and 35% of the infrequent or light drinkers and hazardous or harmful drinkers drank alone, whereas 67% of the alcohol-dependent subjects usually or sometimes drank alone (Table 3).

Availability of alcohol and the popularity of drinking in the community

Almost all subjects (98%) reported that alcohol was readily available and was accessible within a 9–10-min. walk. Two alcohol-dependent subjects, one hazardous or harmful drinker and one infrequent or light drinker found it was difficult to obtain alcohol. These subjects lived in a Muslim village where alcohol is prohibited. Illegal alcohol such as home-fermented alcohol made from grains and juices, e.g. glutinous rice, corn, and palm sugar, was available in some rural villages. This is drunk either crude or distilled. About 14%, 22%, and 18% of the infrequent or light drinkers, hazardous or harmful drinkers, and alcohol-dependent subjects respectively reported that illegal alcohol was available in their communities. The remainder said that it was no longer produced.

In comparison with other communities, few non-drinkers, infrequent or light drinkers and hazardous or harmful drinkers perceived that there were more drinkers in their own community, whereas almost half of the alcohol-dependent subjects did. The alcohol-dependent subjects were 2.5 times as likely to perceive that drinking was more popular in their community, compared to non-drinkers, infrequent or light drinkers. Whereas about half of the hazardous or harmful drinkers and the alcohol-dependent subjects reported that the majority of the men in their communities drank alcohol, one-third of the non drinkers, infrequent or light drinkers did so.

Self-perception of dependence on alcohol

When the subject was asked whether he thought that he was dependent on alcohol, only 23 alcohol-dependent subjects (25%) answered ‘yes’. Two infrequent or light drinkers and four hazardous or harmful drinkers also thought that they were dependent on alcohol. The reason the two infrequent or light drinkers considered themselves addicted to alcohol was that they usually drank before the meal as an appetizer for their dinner. They did not report any other symptom of alcohol dependence.

Concurrent drug use and mental disorders

Tobacco was currently smoked by 49% of subjects overall, and 26% had smoked at some time in their lives, but not in the past year. There was a significant association between cigarette smoking and hazardous or harmful drinking or alcohol dependence ($P < 0.00001$). After adjustment for socio-demographic factors, hazardous or harmful drinkers were almost three times more likely than non-drinkers, infrequent or light drinkers to be current smokers, whereas alcohol-dependent subjects were almost 11 times more likely to smoke (Table 3).

A number of subjects in this study had used illicit drugs at some stages in their lives, although none of them was using drugs at the time of data collection. Marijuana was the most common drug used and alcohol-dependent subjects were four times more likely to have ever used marijuana than were non-drinkers, infrequent or light drinkers. Amphetamine, a stimulant which is commonly called a ‘horse drug’ in Thailand, had been used by 9%, 6%, and 4% of alcohol-dependent subjects, hazardous or harmful drinkers, and non-drinkers, infrequent or light drinkers, respectively ($P > 0.05$). None of the subjects reported using a hallucinogen.

Antisocial behaviours after 15 years of age were reported considerably more often by the alcohol-dependent subjects, than by the other two groups. Of all alcohol-dependent subjects, 29% could be classified as having an antisocial disorder according to the criteria of having at least three antisocial behaviours. The alcohol-dependent subjects were six times more likely to have antisocial personality disorder than were controls, but there was not a significantly increased history of antisocial disorder in the hazardous or harmful drinkers (adjusted odds ratio = 1.3, confidence interval = 0.5–3.6).

DISCUSSION

The current study describes drinking patterns and associated behaviours of a sample of Thai males with a range of alcohol consumption patterns. Differences in patterns, setting and perception of drinking environment between alcohol-dependent subjects, hazardous or harmful drinkers and infrequent or light drinkers were illustrated. The alcohol-dependent subjects drank a larger amount of alcohol, and drank more frequently than the hazardous or harmful drinkers. The alcohol-dependent subjects also had a higher prevalence of tobacco and marijuana use and of antisocial personality disorder.

Consistent with reports from western countries (Fillmore, 1987; Hilton, 1987), this study found that older men drank more frequently, but less heavily, than younger men. As this is a cross-sectional study, we cannot exclude the influence of a cohort effect. However, these findings are generally consistent with the national survey in Thailand in 1991 which found that the prevalence of frequent and regular drinking was at its peak (17.6%) in males aged between 35 and 39 years. The rate tended to decline after this age and was lowest in the group aged ≥70 years (6.6%) (Chuprapawan, 1996). In the present study, among the alcohol-dependent subjects drinking intensity declined, but drinking frequency increased, with increasing age group.

More alcohol-dependent persons reported drinking alone or with immediate family members at home, than did infrequent

or light drinkers, and these differences were independent of age and social class. The alcohol-dependent individuals who drank alone were less likely to report their motivation for drinking being for social reasons, compared to infrequent or light drinkers, and were more likely to have a prolonged drinking episode throughout the evening until late at night.

Only one quarter of the alcohol-dependent subjects perceived themselves as dependent on alcohol. This may indicate that only a few alcoholics accepted their alcohol problem. Alternatively, it may reflect their understanding of alcohol dependence. This low rate of recognition of dependence may explain why few alcohol-dependent clients come into treatment in Thailand.

It is of interest that most of the men in all three drinking groups started their regular drinking in early adulthood (22–24 years). The two most common reasons for starting in all groups were peer influence and the desire to participate in social life. In Thailand, as elsewhere, men are susceptible to peer influence on drinking and some may feel the need for an acceptable social lubricant (Deeleryuenyong *et al*., 1991).

The study also revealed that alcoholic beverages were widely available in the community. Alcohol-dependent subjects and hazardous or harmful drinkers were more likely than the non-drinkers, infrequent or light drinkers to perceive that drinking was popular in their immediate communities and that the majority of men in their community drank alcohol. This difference in perception could reflect a relationship between current social environment and drinking behaviours. Users of drugs or alcohol could start using a substance which is available and acceptable in the society, and maintain its use as long as the substance is still available. In those who are genetically predisposed to dependence, it would be easy for drinking disorders to develop. Alternatively, it could be that excessive drinkers falsely perceived that others in the community behaved in the same way as themselves.

Our findings on concurrent drug use and co-morbid mental disorders were consistent with previous studies (e.g. Hesselbrock *et al*., 1985; Liskow *et al*., 1991; Sher *et al*., 1996). The alcohol-dependent subjects and the hazardous or harmful drinkers were more likely to currently smoke cigarettes, compared to non-drinkers, infrequent or light drinkers. Alcohol and tobacco are regarded by some authors as 'gateway drugs' to other drug use (Henningfield *et al*., 1990; Farrell *et al*., 1992; Torabi *et al*., 1993). Accordingly, it could be argued that intervention on drinking and smoking should be conducted in parallel with any public health programmes. In Thailand, considerable effort has been invested in raising social awareness about the health effects of smoking. Public regulations, such as creating smoking-free zones in public places and the banning of mass media advertisements of tobacco and of display of smoking behaviour in TV series, have been enforced. In comparison, no comparable alcohol-related public regulations are in place. A blood-alcohol limit for drivers has not yet been legislated in Thailand and alcoholic beverages are advertised widely. In addition, drinking wine has become very popular among middle and high socio-economic status groups in recent years.

At present, there are no agreed criteria for hazardous drinking in Thailand. The relationship between low-to-moderate alcohol intake and all-cause mortality has not yet been studied among Thai people, who differ from western people in terms of body size and composition, nutritional status, and genetic susceptibility to certain disorders. Some of the guidelines for 'safe' limits of drinking in western countries, for example, 21 U/week for men and 14 U for women (Royal Colleges of Physicians, Psychiatrists and General Practitioners, 1995), or 40 g/day for men and 20 g/day for women (National Health and Medical Research Council, 1992) may be inappropriate for a Thai population.

The characteristics of current drinking situations, drinking patterns and perception of drinking environment could be the results of the subjects' alcohol-use disorder or could be factors predisposing to the development of these disorders. However, these findings increase our understanding of the association between social settings and drinking behaviours. Past literature has shown that consumption rate of drinking companions can affect an individual's rate of consumption, and the size of drinking groups influences the duration of stay and consequently the amount of alcohol consumed (Single, 1987). Social values, norms, religion, knowledge, and beliefs about drinking behaviours all co-influence drinking patterns both in promoting and limiting ways. A clearer understanding of these factors would be of great benefit in planning a prevention or intervention programme for drinking disorders.

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