

Prevalence and Patterns of Alcohol Consumption among Royal Thai Army Personnel

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Objective: To determine the prevalence and patterns of alcohol consumption among the army personnel.

Material and Method: A cross-sectional study was carried out during the annual health examination between 2000 and 2001 in two army units located in the central region of Thailand. A total of 843 active duty army personnel participated in the present study. Data on demographic characteristics, smoking status and alcohol consumption were collected using a self-rating questionnaire. Drinking patterns during the past year were measured in the following aspects: frequency, quantity, binge drinking and beverage preference.

Results: Eight hundred and thirty-one (98.6%) studied personnel provided complete information and were included in the analysis. All were males with the mean age of 37.2 ± 7.7 years. Five hundred and ninety-three (71.4%) study personnel were current drinkers. The majority of 57.5% drank at least five drinks per drinking day. With regard to the frequency of drinking, 10.7% reported that they drank as often as daily or nearly every day. Additionally, 22.7% had five drinks or more per drinking day at least weekly. Up to 28.2% had binge drinking or episodic heavy drinking practices. The most common type of alcoholic beverage for drinkers was mixed spirit and beer (30.7%). Only three (0.4%) personnel reported drinking wine.

Conclusion: The results suggest that alcohol abuse becomes a significant problem among the army personnel. Most drinking patterns established among the army personnel are more likely to be harmful and unsafe to their health than beneficial effects. Thus, there is an urgent need to initiate appropriate action to prevent the harm from alcohol use and to protect the military performance and readiness.

Keywords: Alcohol consumption, Drinking pattern, Army personnel

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Thailand, like other countries in the Southeast Asian region, has been facing an increase in alcohol use with a rapid rate over the past two decades. According to the National Statistics Office, the proportion of adults who consumed alcohol increased from 31.4% in 1991 to 32.6% and 32.7% in 2001 and 2004, respectively, but decreased to 29.3% in 2007⁽¹⁻⁴⁾. The World Health Organization also documented the increase in Thai adult per capita consumption (age 15+) from 1.93 liters in 1970-72 to 8.47 liters of pure alcohol in 2001 which accounted for 338.3% change^(1,5). It is well established that alcohol consumption has a wide range of adverse health and social consequences. In

the year 2002, the World Health Organization declared alcohol as one of the top ten risks to human health. Alcohol caused globally 3.2% of deaths and about 20-30% of esophageal cancer, liver cancer, liver cirrhosis, homicide, epilepsy, motor vehicle accidents and other unintentional and intentional injuries⁽⁶⁾. In Thailand, the mortality rates of liver disease and chronic cirrhosis between 1979 and 2006 increased from 4.3 to 13.2 per 100,000 of population along with the level of alcohol consumption⁽⁷⁾. Road traffic injury was considered to be the second cause of death. During 2002-2004, there were approximately 90,000-125,000 accidents with 13,000-14,000 deaths annually or 21-22.26 per 100,000 of population in recent years. A survey in 2004, among injured people from road traffic accidents in that year, showed that alcohol was involved in three-fifths of cases^(3,7). In addition, alcohol use is believed

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to cause divorce, separation, mental health problems, suicide, homicides and economic problems.

Alcohol use and related problems are also a concern for the Royal Thai Army Medical Department. Apart from the adverse effects on the lives of alcohol users and their families, alcohol can have a significantly adverse impact on military performance and readiness. Unfortunately, there is little evidence regarding alcohol consumption among the military personnel. The currently available information on alcohol use in Thailand is from the general population. A study on alcohol consumption in army personnel is needed to understand the situation and characteristics of army personnel so that intervention will be properly planned and effectively implemented. The aim of the present study was to describe prevalence and pattern of alcohol consumption among the army personnel.

Material and Method

A cross-sectional survey was carried out during the annual health examination between 2000 and 2001 in two army units located in the central region of Thailand. The study protocol was approved by the Ethical Review Committee the Royal Thai Army Medical Department. A total of 843 active duty army personnel who registered for the annual health examination participated in the present study. After giving written informed consent, all personnel completed a self-administered questionnaire that included questions on demographic characteristics (*i.e.* age, rank, marital status, educational level), smoking status and alcohol consumption. Anthropometric measurements were obtained including weight and height. Body Mass Index (BMI) was calculated as weight in kilograms divided by the square of height in meters.

Alcohol drinking status was determined by asking the study personnel, "Have you ever consumed alcohol in your life?" According to their responses, the study personnel were classified into three groups: non-drinkers (never and occasional drinkers) were those who were total abstainers or those who consumed alcohol on three or fewer occasions per year, former drinkers were those who previously consumed alcohol but not during the past year, and current drinkers were those who consumed on at least four occasions during the past year.

Information about drinking patterns during the past year was measured in the following aspects: frequency, quantity, binge drinking or episodic heavy drinking and beverage preference. To determine the frequency of alcohol consumption, the study personnel

were asked, "How often do you usually drink alcohol?" Response categories were daily or almost daily, weekly and monthly or less. The question on quantity was, "How many drinks do you usually have on the day when you drink alcohol? Response categories were 1 or 2 drinks, 3 or 4 drinks and 5 drinks or more. The question on binge drinking was, "How often do you have six or more drinks in one sitting? Response categories were at least weekly, monthly or less and never. The first category was defined as binge drinker⁽⁸⁾, and the last two categories were grouped as non binge drinkers.

Among a total of 843 study personnel, 12 personnel (1.4%) were excluded because of incomplete information on alcohol consumption. Thus, the remainder of 831 (98.6%) were included in the analysis. Statistical analysis was carried out using SPSS version 11.5 for Windows (SPSS, Chicago, Illinois). The data were presented as frequency, percentage, mean and standard deviation.

Results

The demographic characteristics of the study personnel are shown in Table 1. All 831 active duty army personnel were males. The mean age \pm SD and mean BMI \pm SD were 37.2 ± 7.7 years and 23.7 ± 3.4 kg/m², respectively. A large majority (85.3%) of the study personnel was non commissioned officers. Regarding the marital status, 79.1% were married, 18.5% were single while divorced and widowed accounted for 2.4%. Only 18.3% finished their education at the university level

Table 1. Demographic characteristics and smoking status of the participating personnel (n = 831)

Characteristic	
Age (years, mean \pm SD)	37.2 \pm 7.7
BMI (kg/m ²)	23.7 \pm 3.4
Rank (pay grade)	n (%)
Non commissioned officer	709 (85.3)
Commissioned officer	122 (14.7)
Marital status	
Single	154 (18.5)
Married	657 (79.1)
Divorced/ Widowed	20 (2.4)
Educational level	
Secondary school or less	679 (81.7)
University or beyond	152 (18.3)
Smoking status	
Nonsmoker	411 (49.5)
Smoker	420 (50.5)

or higher. With respect to smoking status, 50.5% were smokers.

The prevalence and drinking patterns of the study personnel are shown in Table 2. It was determined that 71.4% of the studied personnel were current drinkers; the remainder of 21.9% and 6.7% were non-drinkers and former drinkers, respectively. About half (57.5%) of the participating personnel drank at least five drinks per drinking day. Only 2.9% and 11% drank one or two drinks and three or four drinks per drinking day, respectively. With regard to the frequency

of drinking, the majority of current drinkers (44.4%) drank monthly or less, whereas 10.7% reported that they drank as often as daily or nearly every day. Additionally, up to 28.2% were binge drinkers defined as those who had six or more drinks in one setting at least weekly. The most common type of alcoholic beverage for drinkers was mixed spirit and beer (30.7%), followed by spirit (28.2%) and beer (10%). Only three personnel or 0.4% reported drinking wine.

Further analysis was done by cross-tabulating the quantity and frequency of alcohol consumption. Table 3 shows another nine drinking patterns which were constructed ranging from monthly or fewer drinkers who usually had one or two drinks per drinking day to daily or almost daily drinkers who usually had five drinks or more. The minority of the studied personnel, accounting for 0.2%, was one or two drinks per drinking day - daily drinking. In addition, 0.5% was one or two drinks per drinking day - weekly drinking and 2.2% were one or two drinks per drinking day - monthly drinking. On the contrary, the majority of the studied personnel (34.8%) was five drinks or more per drinking day - monthly drinking. Moreover, 13.7% were five drinks or more per drinking day - weekly drinking and 9% were five drinks or more per drinking day - daily drinking.

Discussion

The prevalence of alcohol consumption among the army personnel in the present study was higher compared with the surveys conducted in the general population by the National Statistics Office which showed a decline of the proportion of male drinkers from 55.9% in 2001 to 51.0% in 2007^(2,4). Regarding the quantity of alcohol consumption, 57.5% of the studied personnel were those who had 5 drinks or more per drinking day accounted for 65 g of pure alcohol (one drink contains approximately 13 g of pure

Table 2. Prevalence and pattern of alcohol consumption of the participating personnel (n = 831)

Variable	n (%)
Drinking status	
Non drinker	182 (21.9)
Former drinker	56 (6.7)
Current drinker	593 (71.4)
Quantity of drinks per day (current drinker only)	
1-2 drinks	24 (2.9)
3-4 drinks	91 (11.0)
5 drinks or more	478 (57.5)
Frequency of drink (current drinker only)	
Monthly	369 (44.4)
Weekly	135 (16.2)
Daily or almost daily	89 (10.7)
Binge drinking (current drinker only)	
Non binge drinker	359 (43.2)
Binge drinker	234 (28.2)
Beverage preference (current drinker only)	
Beer only	83 (10.0)
Wine only	3 (0.4)
Spirit only	234 (28.2)
Mixed spirit and beer	255 (30.7)
Mixed spirit and wine	3 (0.4)
Mixed spirit, beer and wine	15 (1.8)

Table 3. Numbers of current drinkers in each quantity by frequency category of alcohol consumption

Quantity	Frequency			Total, n (%)
	Monthly or less, n (%)	Weekly, n (%)	Daily, n (%)	
1 or 2 drinks	18 (2.2%)	4 (0.5%)	2 (0.2%)	24 (2.9%)
3 or 4 drinks	62 (7.5%)	17 (2.0%)	12 (1.5%)	91 (11.0%)
5 drinks or more	289 (34.8%)	114 (13.7%)	75 (9.0%)	478 (57.5%)
Total	369 (44.4%)	135 (16.2%)	89 (10.7%)	593 (71.4%)

Total n = 831 (100%), including non drinkers 182 (21.9%) and former drinkers 56 (6.7%)

alcohol). In a study of Thai male patients, it was found that the median alcohol intake was 75 and 49 g per drinking day in the alcohol-dependent and harmful or hazardous groups, respectively⁽⁹⁾. Thus, the amount of alcohol the studied personnel currently consumed could possibly be harmful to health or even could establish dependence and disability related to alcohol.

Apart from quantity of alcohol consumption, drinking patterns have been shown to be important in the relationship between alcohol consumption and health. The 1995 Department of Defense Worldwide Survey found that the rate of heavy alcohol use was 14% as defined by having five or more drinks per typical drinking occasion at least once per week⁽¹⁰⁾. Besides, the survey revealed the association between the heavy-drinking population and work productivity loss events. The relative risks for increased self-reported lateness, leaving early, low performance and on-the-job injury were higher among heavy drinkers than for light drinkers. These work productivity loss events related to heavy alcohol use may have an adverse effect on the maintenance of high standards performance, military discipline and readiness⁽¹⁰⁾. Based on the above definition, 22.7% of the study personnel in the present study could be considered as heavy drinkers. Thus, these personnel could be at risk of work productivity loss. The high prevalence of alcohol abuse in the military could possibly be explained by a military service itself. Military personnel often use alcohol in an attempt to cope with stress, boredom, and loneliness. The United Nations peacekeeping soldiers reported that they had increased their consumption of alcohol during the peacekeeping service. The reasons for increasing drinking were tension, restlessness, anxiety and stress⁽¹¹⁾. In addition, young unmarried males, workplace culture and alcohol availability were known as risk factors for increased alcohol use in the military setting as well as in the general population^(12,13).

Regarding pattern of drinking, 28.2% of the army personnel were defined as binge drinkers. A large quantity of alcohol intake in one occasion can cause death from respiratory depression due to acute ethanol poisoning⁽¹⁴⁾. A prospective population based study in Finland revealed that the binge-style of drinking beer significantly raised the risk of death from any cause, death from external causes and fatal myocardial infarctions in middle aged men⁽¹⁵⁾. In addition, a large case-control study from Australia suggested that the risk of cardiovascular disease was lowest among men who had a steady small intake of alcohol i.e. one to

four drinks daily on five or six day a week, while those who had the same average intake, but drank in binges had no such beneficial effect⁽¹⁶⁾. Unfortunately, among the study personnel, only 1.7% had one to four drinks daily or almost daily.

Recently, it has been shown that different types of alcoholic beverage may have different effects on cardiovascular disease and on mortality. Previous studies showed a lower mortality among wine drinkers than among beer and spirit drinkers^(17,18). The protective effect on cardiovascular disease is derived only from wine drinking. However, the findings from this present study showed that only 0.4% of the army personnel preferred drinking wine.

In conclusion, the results from the present study suggest that alcohol abuse becomes a significant problem among the army personnel. Most drinking patterns established among the army personnel are more likely to be harmful and unsafe to their health than beneficial. Continuing drinking over time may result in increases in harm. Thus, there is an urgent need to initiate appropriate action to prevent the harm from alcohol use and to protect the military performance and readiness. Further research and study are needed to understand the characteristics of army culture that encourage heavy or binge-drinking practices.

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ความชุกและแบบแผนการบริโภคเครื่องดื่มแอลกอฮอล์ของกำลังพลในกองทัพบก

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วัตถุประสงค์: เพื่อประเมินความชุกและแบบแผนการบริโภคเครื่องดื่มแอลกอฮอล์ของกำลังพลในกองทัพบก

วัสดุและวิธีการ: เป็นการศึกษาแบบตัดขวาง โดยการเก็บข้อมูลกำลังพลในระหว่างการตรวจร่างกายประจำปี พ.ศ. 2543 และ พ.ศ. 2544 ของหน่วยกองทัพบก 2 หน่วยในพื้นที่ภาคกลาง กำลังพลทั้งหมด 843 นาย ตอบแบบสอบถามเกี่ยวกับความถี่ และปริมาณของเครื่องดื่มแอลกอฮอล์ที่ดื่มในช่วง 1 ปีที่ผ่านมา รวมทั้งประเภทของเครื่องดื่มแอลกอฮอล์ที่ชอบดื่ม

ผลการศึกษา: กำลังพล 831 นาย คิดเป็นร้อยละ 98.6 ของกำลังพลทั้งหมดที่เข้ารับการตรวจร่างกายประจำปี และตอบแบบสอบถามครบถ้วนเข้าร่วมในการศึกษาคั้งนี้ กำลังพลทั้งหมดเป็นชาย มีอายุเฉลี่ย 37.2 ± 7.7 ปี กำลังพล 593 นาย คิดเป็นร้อยละ 71.4 ของกำลังพลทั้งหมดเป็นผู้ที่ดื่มเครื่องดื่มแอลกอฮอล์ในปัจจุบัน โดยเป็นผู้ที่ดื่มในปริมาณอย่างน้อย 5 หน่วยบริโภค (drink) ต่อวันจำนวนร้อยละ 57.5 และเป็นผู้ที่ดื่มเป็นประจำทุกวัน หรือ เกือบทุกวันร้อยละ 10.7 นอกจากนี้กำลังพลที่ดื่มอย่างน้อย 5 หน่วยบริโภคต่อวันเป็นประจำอย่างน้อยทุกสัปดาห์มี สูงถึงร้อยละ 22.7 และร้อยละ 28.2 รายงานว่าตนเองเคยดื่มอย่างหนักใน 1 ครั้งที่ดื่ม (binge) ประเภทของเครื่องดื่มแอลกอฮอล์ที่นิยมดื่มมากที่สุดคือ ดื่มทั้งวิสกี้และเบียร์คิดเป็นร้อยละ 30.7 และไวน์เป็นเครื่องดื่มที่มีผู้นิยมดื่มน้อยที่สุดคือร้อยละ 0.4

สรุป: การบริโภคเครื่องดื่มแอลกอฮอล์ของกำลังพลกำลังเป็นปัญหาสำคัญ แบบแผนการบริโภคเครื่องดื่มแอลกอฮอล์ที่ปฏิบัติอยู่ในขณะนี้ส่วนใหญ่เป็นแบบแผนที่อาจนำไปสู่การเกิดอันตรายต่อสุขภาพและอาจนำไปสู่การติดสุราได้ หากยังปฏิบัติเช่นนี้ต่อไปในระยะยาว ซึ่งจะส่งผลกระทบต่อความพร้อมและประสิทธิภาพในการปฏิบัติภารกิจ และสุขภาพของกำลังพลได้ ดังนั้นจึงเป็นเรื่องเร่งด่วนที่จะต้องกำหนดมาตรการในการควบคุมการดื่มเครื่องดื่มแอลกอฮอล์ และการป้องกันอันตรายที่อาจเกิดขึ้นจากการดื่มแอลกอฮอล์ด้วย
