IDENTIFICATION OF SOCIO-DEMOGRAPHIC CHARACTERISTICS ASSOCIATED WITH ALCOHOL-RELATED RISK AMONG JAPANESE RESIDENTS IN BANGKOK, THAILAND FOR POLICY MAKING

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ABSTRACT:

Background: Alcohol is one of the most major risk factors for health in the world. It is known to be significantly associated with health. However, the level of alcohol consumption and the association between socio-demographic characteristics and alcohol-related risk among Japanese residents in Bangkok has not been researched yet. This study was done to advertise healthier drinking behavior among them.

Methods: Cross-sectional study was conducted in 300 participants who were Japanese residents in Bangkok, Thailand by purposive sampling. Data was collected by self-report questionnaire. T-test and one way ANOVA were employed at 95% of CI. Post hoc test was done when significant association was found by one way ANOVA.

Results: The mean score of AUDIT is 7.40 among Japanese residents in Bangkok, which is categorized as low risk drinkers. There are significant associations between gender/age/occupation and alcohol-related risk, especially males age group of 40-59 years. Management level employees tend to have higher risk compared to other socio-demographic characteristics.

Conclusion: The result of this research was consistent with former studies that males tend to have higher risk than females at the age of 40-59 years old. Also males tend to have higher risk than other age groups. However, it is inconsistent with a previous study that management level employees have higher risk than other occupations. This result should be utilized to promote alcohol screening test to Japanese residents in Bangkok, which could find their alcohol-related risk and change their drinking behaviors.

Keywords: Alcohol-related risk, Japanese residents, Thailand

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INTRODUCTION

There are many risk factors attributable for health consequences, such as smoking, high cholesterol food, less exercise and so on. Alcohol is one of the most major risk factors for health consequences. A previous study [1] showed that although the odds of current smoker for poor self-rated general health is 1.2; BMI more than 35 is 1.7; alcohol consumption is higher, especially drinking liquor more than 15 units per two weeks is 3.3. It suggests that health is by far more attributable to level of alcohol consumption than any other factors. In 2010, 4.9 million deaths and 5.5 % of Disability Adjusted Life Years (DALYs) were attributed to alcohol consumption in the world [2]. A previous

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study [3] mentioned that there are two types of negative effects of alcohol consumption: long-term effects and short-term effects. The long-term effects on health are high blood pressure, stroke, pancreatitis, liver disease, depression, dementia, sexual problems, and various cancers. It also has effects on social implications as family break-up, domestic abuse, unemployment, homelessness, and financial problems. The short-term effects on health are headache, hangover, blackout, stupor, coma, etc. Excessive amounts of alcohol consumption in a single setting so called binge drinking is defined as drinking more than 5 drinks per occasion for men and 4 for women; it interferes with the body's normal functions and causes the above symptoms [4]; this can also cause accidents, injuries and unplanned time off work or class [3, 5, 6]. It also damages neural systems responsible for impulse control [7], which increases likelihood of aggressive and risky behaviors [8].

Regarding the situation of chronic diseases attributable to alcohol in Japan by Ministry of Health, Labour and Welfare in Japan, it shows that the large amount of alcohol consumption is significantly associated with cirrhosis of liver, diabetes, high blood pressure, circulatory disease, diarrhea, and various cancers among Japanese people. According to the large-scale cohort studies conducted in Japan, mortality risk increased linearly with rising alcohol dose among drinkers, and 5% of total mortality, 3% of cancer mortality, 2% of heart disease mortality; and 9% of cerebrovascular disease mortality in men could be gained by the alcohol consumption of more than 46 g/day [9]. Additionally, as for level of alcohol consumption among Japanese people, the national survey in Japan in 2005 [10] showed that the rate of drinking behavior consuming at least 2 cans of beer in a day for at least 3 times in a week in whole population over 20 years old was 20.8%. The rate between male and female is totally different. Although the rate in female was only 7.3%; the rate in male was 36.7%. Furthermore, according to National Hospital Organization Kurihama Medical and Addiction Center, distribution of AUDIT score, which is worldwide known questionnaire measuring the risk of alcohol consumption in Japan is as follows; 76.2% of males are categorized as abstainers or low risk drinkers; 18.9% are hazardous drinkers; 3.4% are harmful drinkers; and 1.6% are probable alcohol dependent drinkers [11]. In terms of women, 96.7% are abstainers or low risk drinkers. There are only less than 4% of women who are categorized as more than hazardous drinkers in Japan.

As above-mentioned, there are some previous domestic researches about alcohol consumption among Japanese people. However, the alcohol consumption characteristics among Japanese residents in Bangkok and the association between socio-demographic characteristics and alcohol-related risk have not been studied yet. The number of Japanese residents living in Thailand has been increasing rapidly; so that the alcohol consumption characteristics, which could be one of the main factors for poor health, should be researched to grasp the accurate situation of alcohol drinking and prevent the alcohol-related harm among them. Also, in order to find out the risky group among them, the association between socio-demographic characteristics and the alcohol-related risk is investigated. If there is a significant difference of the alcohol-related risk between socio-demographic characteristics, it is possible to focus on the risky group and advertise intervention to them. The result will be utilized for the policy and health system making, which would decrease the poor health caused by alcohol drinking among Japanese residents in Bangkok.

METHODOLOGY

This is a cross-sectional descriptive and analytical study. It aims to find the alcohol consumption characteristics and examines the association between socio-demographic characteristics and alcohol-related risk among Japanese residents in Bangkok.

Participants

According to the Embassy of Japan in Thailand, it was estimated that there were 46,367 Japanese long-stay residents in Bangkok in 2014. The qualifications to be a participant in this study are 1) having Japanese nationality, 2) being able to read and write Japanese, 3) holding a visa to stay in Thailand except transit or tourist visa, 4) being 20 years old or above (this is because drinking alcohol is allowed for those who are 20 or above both in Japan and in Thailand), 5) living in Bangkok for at least previous 30 days, and 6) agreeing with the concept of this study and willing to participate in the questionnaire. According to the Cochran's sample calculation formula [12], sample size in this study is 253, which is 0.55% of the number of estimated Japanese residents in 2014.

Instruments

There are 2 types of instruments used in this study. For socio-demographic characteristics, there are 6 items to ask including gender (Male or Female), age (open-ended), occupation (Management, Administrative staff, Technical staff, Professional, Self-employed, Unemployed or Others), marital status (Married, Never married, Divorced or Widowed), living condition (Living alone, Living with family or Others), and educational background (Junior high school, Senior high school, Undergraduate, Master/Ph.D or Others). For alcohol-related risk measurement during last year, AUDIT was used. 10 items, "frequency of drinking", "typical quantity", "frequency of heavy drinking", "impaired control over drinking", "increased salience of drinking", "morning drinking", "guilt after drinking", "blackouts", "alcohol-related injuries", "others concerned about drinking", were asked. Examples of the number of drinking are shown in the questionnaire, as a can of beer is 1.5 drinks; a large bin of beer is 2.5 drinks; wine in a typical wine glass is 1.5 drinks and so on. In this case, the participants can imagine their typical quantity of drinking. The first 8 items have 5 response options which have score from 0 to 4; and the last 2 items have 3 response options which have score at 0, 2 or 4. The scores are summed from 0 up to 40. In general cut-off score in AUDIT [13], people who score 0 are abstainers, while those who have 1-7 are considered as low risk drinkers. Scores between 8 and 15 represent people who drink in excess of guidelines for low risk consumption (hazardous drinking; more than 10 grams of alcohol a day). A score of ≥ 16 on the AUDIT scale is classified as drinking at a harmful level; and a score ≥ 20 is defined as probable alcohol dependence. However, as written in the guideline of AUDIT [13], cut-off score is subject to change slightly depending on the country's drinking patterns and the alcohol content of standard drinks. According to Ministry of Health, Labor, and Welfare in Japan, cut-off score in AUDIT in Japan is recommended as follows: 0 is abstainer; 1-7 is low risk drinking; 8-14 is hazardous drinking, ≥ 15 is harmful drinking; and ≥ 20 is probable alcohol dependence [13]. Therefore, this cut-off score is applied in this study. In addition to AUDIT, 4 items about drink history in life, first drink age, frequency of alcohol drinking within 30 days, and amount of alcohol drinking per occasion within 30 days are asked to figure out the alcohol consumption characteristics.

Data collection

Convenience sampling was conducted to recruit the samples of Japanese residents in Bangkok in this study. The researcher found Japanese residents who were the members of Japanese communities. Those communities were searched online conveniently by the researcher. For data collection, the instruction for participation in this research was given in front of participants. Questionnaires, information sheet and form of informed consent were distributed by the researcher.

The answers were self-report. It usually took 15-20 minutes to complete the questionnaire. The researcher monitored the participants answering the questionnaire and collected it when they completed.

This research was approved by Chulalongkorn University Ethical Review Committee (approval no. 066/59). In this study, three experts in this field reviewed the content validity before conducting data collection and approved the questionnaire. AUDIT is an international questionnaire, the questions cannot be deleted. The researcher did the reliability test for the questionnaire among 45 samples; and it showed Cronbach's alpha at 0.81.

Data analysis

For descriptive statistics, frequencies, percentage, mean and standard deviation are calculated. For statistical analysis, t-test and one way ANOVA are used to examine associations between socio-demographic characteristics and alcohol-related risk. Post hoc test is done to find out between which categories in a characteristic. There is a statistically significant difference when a significant association is found by one way ANOVA.

RESULTS

Socio-demographic characteristics

Two hundred and nine men and 91 women participated in this research. Mean age of the participants is 44.5 years old (±13.86). Regarding occupation among the participants, nearly one-third of them are management level employees. For marital status, nearly 60% of the participants are married; and 36% of them have never married. The rest of them are divorced and widowed. In regard to living condition, nearly 55% of participants are living alone; and the rest, nearly 45% of them are living with their family or someone. In respect of educational background, senior high school as the final educational history is 15.3%, undergraduate is

Table 1 Alcohol consumption characteristics between male and female (n = 300)

		Male (n = 209)	Female (n = 91)	Total (n = 300)
First-drink age (years)	≤ 15	29 (l4.5%)	9 (l0.3%)	38 (13.2%)
	16-19	105 (52.5%)	37 (42.5%)	142 (49.5%)
	≥ 20	66 (33.0%)	41 (47.1%)	107 (37.3%)
	Missing	9	4	13
	Mean	17.79	18.56	18.02
	SD	2.55	3.62	2.93
Frequency of alcohol drinking within 30 days	Never	23 (11.0%)	17 (18.70%)	40 (13.3%)
	Once	15 (7.2%)	12 (13.2%)	27 (9.0%)
	2-4 times	42 (20.1%)	30 (33.0%)	72 (24.0%)
	2-3 times a week	55 (26.3%)	20 (22.0%)	75 (25.0%)
	4 or more times a week	74 (35.4%)	12 (13.2%)	86 (28.7%)
Amount of alcohol drinking per occasion within 30 days (drinks)	1-2	47 (25.5%)	36 (48.6%)	83 (32.2%)
	3-4	63 (34.2%)	26 (35.1%)	89 (34.5%)
	5-6	36 (19.6%)	5 (6.8%)	41 (15.9%)
	7-9	20 (10.9%)	1 (1.4%)	21 (8.1%)
	More than 9	18 (9.8%)	6 (8.1%)	24 (9.3%)
	Missing	25	17	42
Alcohol-related risk group	Abstainer	14 (6.7%)	14 (15.4%)	28 (9.3%)
	Low risk	89 (42.6%)	61 (67.0%)	150 (50.0%)
	Hazardous	67 (32.1%)	15 (16.5%)	82 (27.3%)
	Harmful	25 (12.0%)	0	25 (8.3%)
	Probable alcohol dependent	14 (6.7%)	1 (1.1%)	15 (5.0%)
AUDIT score	Mean (SD)	8.78 (6.63)	4.23 (4.15)	7.40 (6.34)

65.3%, graduate is 11.3%, and others are 8.0%. The participants in others graduated from a junior high school or a vocational school.

Alcohol consumption characteristics

Total samples employed in this study are 300. Table 1 shows the alcohol consumption characteristics between male and female. All the male participants have ever drunk alcoholic beverage in their lives; however, one of the female participants is a lifelong abstainer. For first drink age, the mean is 18.02 years old (±2.93) among Japanese residents. Nearly 90% of male participants and more than 80% of female participants drank alcoholic beverage within 30 days. For amount of alcohol drinking per occasion within 30 days, one third of the participants consumed more than 4 drinks. The mean score of AUDIT is 8.78 (±6.63) among males and 4.23 (±4.15) among females, which is regarded as low risk drinking. As a whole, 9.3% of the participants are abstainers; and 13.3% of them are categorized as harmful and probable alcohol dependent drinkers.

Association between socio-demographic characteristics and alcohol-related risk

As Table 2, the mean score of AUDIT in males is twice as large as in females. As a whole, males are categorized as hazardous drinkers and females are low risk drinkers. A significant association between gender and alcohol-related risk is found by t-test (p-value = 0.000). Males have statistically much higher alcohol-related risk than females. There is a significant association between age and alcohol-related risk (p-value = 0.040); however, Tukey post hoc test does not find any significant difference of AUDIT score between ages. A significant association between occupation and alcohol-related risk is found (p-value = 0.021). Significant differences are found between management level employees and professional workers (p-value = 0.004), between management level employees and unemployed persons (p-value = 0.000), and between management level employees and others (p-value = 0.000) by Tukey post hoc test. However, for marital status, living condition, and educational background, significant associations are not found with alcohol-related risk.

DISCUSSION & CONCLUSION

For amount of alcohol drinking per occasion within 30 days, 40.3% of male participants and 16.3% of female participants had at least 5 drinks per occasion, which is defined as binge drinking. The mean score of AUDIT among Japanese

Table 2 Association between socio-demographic characteristics and alcohol-related risk (n = 300)

Socio-demographic		Frequency	Mean of AUDIT	SD	T-value/ F-value	*p*-value
Gender	Male	209	8.78	6.64	6.048	**0.000
	Female	91	4.23	4.15		
Age (years)	20-39	115	6.87	5.61	3.263	*0.040
	40-59	136	8.37	6.71		
	60 or above	49	5.98	6.60		
Occupation	Management	94	10.40	7.06	7.025	**0.000
	Staff (administration)	25	7.32	5.15		
	Staff(technical personnel)	26	7.23	3.81		
	Professional (medical doctor, lawer, professor etc.)	32	5.78	4.92		
	Self-employed	22	7.95	6.21		
	Unemployed	59	4.66	6.08		
	Other	42	5.64	5.35		
Marital status	Married	177	8.05	6.88	2.471	0.086
	Never married	108	6.33	5.00		
	Others	15	7.53	7.70		
Living condition	Living alone	164	7.76	6.06	0.772	0.283
	Living with family/others	136	6.97	6.66		
Educational background	Senior high school	46	6.11	5.49	0.772	0.511
	Undergraduate	196	7.65	6.78		
	Graduate	34	7.44	4.73		
	Others	24	7.83	6.19		

* *p*-value < 0.05, ** *p*-value <0.01

According to Tukey post hoc test, among occupations, there are significant differences of AUDIT score between Management and Professional (medical doctor, lawer, professor etc.) with *p*-value at 0.004, between Management and Unemployed with *p*-value at 0.000, and between Management and Others with *p*-value at 0.000

residents in Bangkok is 7.40, which is regarded as low risk. For the distribution of the alcohol-related risk group, though the percentage of abstainer and low risk drinker in males is 49.3 and in females is 82.4 among Japanese residents in Bangkok, that in males is 76.1 and in females is 96.7 among general population in Japan [14]. This suggests that Japanese residents in Bangkok have higher possibility of drinking alcohol at more dangerous level (hazardous, harmful, and probable alcohol dependent) than general population in Japan.

There is a significant difference of alcohol-related risk between male and female. The result of the analysis shows males have higher alcohol-related risk than women. This is consistent with the former studies which measured alcohol consumption in Japan [10, 15]. For age, though no significant difference is found by Tukey post hoc test, age group of 40-59 has higher mean score of AUDIT than two other age groups. This trend is same as the situation of drinking customs in Japan [10]. Young age group tends to drink less alcoholic beverages than middle age group in Japan. This is also true in Bangkok. There is a significant difference of alcohol-related risk between occupations. As Table 2 shows, management level employees have the highest mean score of alcohol-related risk among the occupations. This is inconsistent with the former study [16]. It says people with higher socio-economic status have less alcohol-related risk compared to those who are with less socio-economic status. However, in the research, some of the business persons said, in Bangkok, they are required to host temporary business travelers from Japan. And usually the senior and management level employees tend to attend that kind of business table. That could increase their chance of drinking alcohol. Though marital status is not associated with alcohol-related risk, those who are married tend to have higher alcohol-related risk than those who have never been married. This is inconsistent with the former study [17]. It shows “married” is a protective factor for drinking much, in other words, those who are married tend to have less alcohol-related risk than those who are single. The reason for the result in this study is unclear.

As a result, 40-59 year-old male management level employees have statistically higher alcohol-

related risk than any other characteristics among Japanese residents in Bangkok.

LIMITATION

Because purposive sampling was conducted for sampling technique in this study, the result is biased in some ways. In order to conduct simple random sampling for Japanese residents in Bangkok, the assistance of large Japanese communities or public organizations will be needed; this due to individual persons or groups cannot access to many and unspecified number of Japanese residents only by themselves.

POLICY RECOMMENDATION

As mentioned above, Japanese residents in Bangkok have higher alcohol-related risk than general population in Japan. Even though Japanese residents in Bangkok are categorized as low risk drinking, if they keep drinking at the same level as of now, their health status could possibly become worse. Decreasing the alcohol-related risk or keeping the lower alcohol-related risk is needed to improve or maintain good health status among them.

Then, how do we decrease the alcohol-related risk among Japanese residents in Bangkok? First of all, main target is male, 40-59 year old, and management level employees because they are significantly associated with higher alcohol-related risk in this study.

Secondly, Japanese Embassy in Thailand should take initiative on this matter because they are responsible for health status of Japanese residents in Thailand; and public authority has power over companies or private organizations. Then, how can they decrease the alcohol-related risk? How can they advertise lower alcohol consumption?

According to OECD, a medical intervention is effective and cheap to decrease alcohol consumption [18]. In a policy suggestion from OECD, it states counseling with a primary care doctor decreases the risk of a lot of alcohol consumption. This is also suggested by Ministry of Health, Labor and Welfare in Japan as “Brief Intervention” [19]. Brief Intervention is short-time counseling with a medical doctor to decrease the amount of patient’s alcohol consumption with a principle “FRAMES” (feedback, responsibility, advice, menu, empathy, and self-efficacy). Thus, researcher think Brief Intervention should be advertised for risky drinkers. What is important for this is how to advertise it, in other words, how to make them think of their health risk due to alcohol and how to urge them to understand how risky they are. In my opinion, AUDIT or other questionnaires to measure the risk of alcohol drinking could be one of the tools which make them feel concerned about the alcohol-related risk and their health status. By showing the score and visualizing the risk, those tools might, at least, make them realize their risk of drinking alcohol, which would make them feel like they want to change their drinking behavior. If they feel so, the chance of going to see a doctor for Brief Intervention would become higher. As there are some Japanese doctors and doctors who can communicate in Japanese in Bangkok, risky drinkers are able to receive counseling and change their drinking behavior with a help of medical doctors. This will prevent future decline in health by alcohol among Japanese residents in Bangkok.

Then, how can Japanese organizations advertise those alcohol-briefing tools? Researcher thinks that health checkup is a good chance to make Japanese workers answer those questionnaires. Because Japanese business persons are the main target for this (male, 40-59 year old, and management level employees) and are required to receive a health checkup at least once a year. Those briefing tools can be distributed at that time. When the result of health checkup is announced, the score of alcohol-briefing test (alcohol-related risk) is also announced. Japanese Chamber of Commerce in Bangkok has more than 1,700 member companies in Thailand. If it recommends member companies have an alcohol-briefing test in the annual health checkup, Japanese residents have more chances to realize their alcohol-related risk. Also, Japanese Association in Thailand has many individual Japanese members. If it introduces a brief test to the members, some of them might be interested in answering the questionnaire and realize their alcohol-related risk. Japanese organizations, especially Japanese Embassy in Thailand, which is in charge of management of health status of Japanese national in Thailand, should try to coordinate with other Japanese organizations and make a comprehensive system about this.

However, this could not be a fundamental solution for the alcoholic problem, even if the advertisement is well done. To decrease the alcohol-related risk more, rigorous political interventions which restrict the environment surrounding alcohol consumption are needed. Not only for Japanese residents but also for all the people living in

Bangkok (Thailand), Japanese organizations and Thai government should work together hand in hand to decrease the alcohol-related risk.

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