PATTERNS OF USE IN ALCOHOL DRINKING AND BETEL NUTS CHEWING AMONG WORKERS OF MYITNGE TRAIN CARRIAGE AND WAGONS WORKSHOP, MYANMAR

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A Thesis Submitted in Partial Fulfillment of the Requirements
for the Degree of Master of Public Health in Public Health
Common Course
College of Public Health Sciences
Chulalongkorn University
Academic Year 2018

รูปแบบการดื่มเครื่องดื่มแอลกอฮอล์และการเคี้ยวหมากของคนงานรถไฟโดยสารและขนส่งสินค้า เมียงแง ประเทศเมียนมา

นายเต็ด เมี๊ยท อ่อง

วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาสาธารณสุขศาสตรมหาบัณฑิต
สาขาวิชาสาธารณสุขศาสตร์ ไม่สังกัดภาควิชา/เทียบเท่า
วิทยาลัยวิทยาศาสตร์สาธารณสุข จุฬาลงกรณ์มหาวิทยาลัย
ปีการศึกษา 2561

Thesis Title	PATTERNS OF USE IN ALCOHOL DRINKING AND BETEL NUTS CHEWING AMONG WORKERS OF MYITNGE TRAIN CARRIAGE AND WAGONS WORKSHOP, MYANMAR
By	Mr. Htet Myat Aung
Field of Study	Public Health
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เต็ด เมี๊ยท อ่อง : รูปแบบการดื่มเครื่องดื่มแอลกอฮอล์และการเคี้ยวหมากของคนงานรถไฟโดยสารและขนส่งสินค้าเมียงแง ประเทศเมียนมา. (PATTERNS OF USE IN ALCOHOL DRINKING AND BETEL NUTS CHEWING AMONG WORKERS OF MYITNGE TRAIN CARRIAGE AND WAGONS WORKSHOP, MYANMAR) อ.ที่ปรึกษาหลัก : อุษณีย์ พึ่งปาน

บทนำ: การดื่มเครื่องดื่มแอลกอฮอล์เป็นปัญหาและสาเหตุของการเจ็บป่วยและการตายในระดับโลก ในประวัติศาสตร์เครื่องดื่มแอลกอฮอล์มีบทบาทสำคัญในทางสังคมและการสร้างความสัมพันธ์ การดื่มเครื่องดื่มแอลกอฮอล์ที่มากเกินไปจะนำไปสู่การเกิดโรคมากกว่า 200 โรค และเกิดการเจ็บป่วย รวมถึงการติดสุรา ดับแข็ง มะเร็ง และการบาดเจ็บ หมากเป็นที่นิยมใช้มานานแล้วในประวัติศาสตร์ มีการปลูกและบางแห่งใช้ในพิธีกรรมทางศาสนา งานทางสังคมวัฒนธรรม แม้ว่าการเคี้ยวหมากมิใช่ปัญหาทั่วโลก แต่ยังคงเป็นปัญหาในภูมิภาคเอเชียแปซิกฟิก อาทิ เมียนมา ศรีลังกา อินเดีย กัมพูชาและปาปัวนิวกินี องค์การอนามัยโลกจัดว่าหมากเป็นสารก่อมะเร็ง ในเมียนมา มีประชากรจำนวนมากที่ดื่มเครื่องดื่มแอลกอฮอล์ และเคี้ยวหมาก นอกจากนี้คนที่เคี้ยวหมากมีแนวโน้มที่จะดื่มเครื่องดื่มแอลกอฮอล์

วัตถุประสงค์: การศึกษานี้เพื่อที่จะชี้ถึงรูปแบบการดื่มเครื่องดื่มแอลกอฮอล์และการเคี้ยวหมากในกลุ่มคนงานรถไฟโดยสารและขนส่งสินค้าเมียงแง

วิธีการศึกษา: เป็นการศึกษาภาคตัดขวางจากตัวอย่างที่เป็นตัวแทนจำนวน 320 คน คัดเลือกจากคนงานรถไฟโดยสารและขนส่งสินค้าเมียงแง ซึ่งตั้งอยู่ในมัณฑะเลย์ ทีมผู้วิจัยใช้วิธีการสัมภาษณ์รายบุคคล

ผลการศึกษา: คนงานที่ศึกษามีอายุเฉลี่ย 37.97±10.42 ปี อายุเฉลี่ยของการดื่มเครื่องดื่มแอลกอฮอล์และเคี้ยวหมากเริ่มตั้งแต่ 25 ปี คนงานที่ศึกษาเกือบทั้งหมด (98.1%) ดื่มเบียร์ ในจำนวนนี้ 80 คนหรือ 25% ดื่มฯหนักในปริมาณมาก ส่วนใหญ่ดื่มในร้านอาหารหรือบาร์ ส่วนหมากยี่ห้อ “92” เป็นที่นิยมใช้มากที่สุด (208 คน หรือ 65% ที่ใช้) คนงาน 76 คนจากทั้งหมดเคี้ยวหมากถึงวันละ 5 แพคใน 12 เดือนที่ผ่านมา ทั้งหมดเคี้ยวหมากทั้งในที่ทำงานและบ้าน คนงาน 121 คนรายงานว่าจะดื่มฯ หลังจากเคี้ยวหมากและ 76 คนรายงานว่าจะเคี้ยวหมากหลังจากดื่มฯ ทุกครั้ง

สรุป: คนงานที่ศึกษาทั้งหมดดื่มเครื่องดื่มแอลกอฮอล์และเคี้ยวหมาก เบียร์เป็นที่นิยมมากที่สุดและ 1 ใน 4 ดื่มฯหนัก “92” เป็นหมากชนิดที่นิยมใช้มากที่สุด เกือบ 1 ใน 4 เคี้ยวหมากวันละ 5 แพคขึ้นไป ซึ่งนับว่าการใช้ดังกล่าวมีปริมาณมากที่เสี่ยงจะเกิดปัญหาสุขภาพ น่าจะถึงเวลาที่จะต้องให้ความรู้เกี่ยวกับโทษของการดื่มฯ และการเคี้ยวหมาก นอกจากนี้น่าจะมีการศึกษาให้มากขึ้นเกี่ยวกับรูปแบบการดื่มเครื่องดื่มแอลกอฮอล์และการเคี้ยวหมากในคนงานประเภทอื่นด้วย

สาขาวิชา สาธารณสุขศาสตร์ ลายมือชื่อ นิสิต .....

ปีการศึกษา 2561 ลายมือชื่อ อ.ที่ปรึกษาหลัก .....

6178822253 : MAJOR PUBLIC HEALTH

KEYWORD: Alcohol, Betel nuts, Pattern, Workers, Myanmar

Htet Myat Aung : PATTERNS OF USE IN ALCOHOL DRINKING AND BETEL NUTS CHEWING AMONG WORKERS OF MYITNGE TRAIN CARRIAGE AND WAGONS WORKSHOP, MYANMAR. Advisor: Asst. Prof. USANEYA PERNGPARN, Ph.D.

Background: Alcohol drinking is a major concern and cause of morbidity and mortality all over the world. Historically, alcohol is still holding an important role in social interactions, relationships and bondings. Excessive amount of alcohol drinking is leading to more than 200 diseases and injury conditions including alcohol dependence, liver cirrhosis, cancers and injuries. Betel nut has been used widely throughout the history and deeply cultivated in some religious and some sociocultural events. Although betel nut chewing is not a problem for worldwide but still affects the Asia and Pacific regions such as Myanmar, Sri Lanka, India, Cambodia and Papua New Guinea. Betel nuts are defined and classified as carcinogen by World Health Organization (WHO). In Myanmar, there are still a lot of people who have both alcohol drinking and betel nuts chewing habits. Also, people who have betel nuts chewing habits tend to drink alcohol too.

Objective: This study identified the patterns of alcohol drinking and betel nuts chewing among workers of Myitnge Train Carriage and Wagons Workshop.

Methods: This was a cross-sectional study with representative sample of 320 workers selected from Myitnge Train Carriage and Wagons Workshop which is located in Mandalay. The researcher team conducted the study by face to face interview.

Results: The mean age of the participants was 37.97± 10.42 years. The average age of the both alcohol drinking and betel nuts chewing onset was 25 years old. Almost all of the participants (98.1%) in this study have drunk beer. There were 80 participants (25%) who were binge-drinking in this study. Most participants drank alcohol at restaurants and bars. “Ninety Two”, which is one of the betel nuts type, have highest percentage among all betel nuts types with 208 participants (65%) have been consuming. There were 76 participants who chewed 5 packs and more betel buts in the past 12 months. They chewed betel nuts mostly at work and home. There were 121 participants who like to drink alcohol after they finished chewing betel nuts and 76 participants who like to chew after they have drunk alcohol.

Conclusion: All the participants have both alcohol drinking and betel nuts chewing habits. Beer was the most popular alcohol beverages and one fourth of the participants in this study were binge drinking in this study. “92” was the most popular type of betel nuts among workers. Also, there were almost one fourth of the participants who were chewing 5 or more than 5 packs of betel nuts in this study. Education programs for both alcohol drinking and betel nuts chewing habits should be done for participants who drink alcohol and chew betel nuts a lot in this study. Also, studies about patterns of alcohol drinking and betel nuts chewing should be conducted more in workers in Myanmar since there are only a few studies about them.

Field of Study:	Public Health	Student's Signature .....
Academic Year:	2018	Advisor's Signature .....

ACKNOWLEDGEMENTS

The successful completion of this thesis resulted from collaborative and encouraging efforts from many people who I would like to express my gratitude. First of all, I am most grateful to my advisor Asst. Prof. Usaneya Perngparn, Ph.D, for her guidance, encouragement, supervision, invaluable advice throughout the thesis process.

Furthermore, I also would like to express my gratitude to my thesis committee members, Asso. Prof. Chitlada Areesantichai, Ph.D, and Asso. Prof. Sompoch Iamsupasit, Ph.D for their valuable suggestions to improve my thesis.

My sincere thanks also go to the officials of Myitnge Train Carriage and Wagons Workshop and other staffs who provided me supports everything that I needed to conduct a research.

Last but not least, I would like to thank my family, supervisor and friends in supporting, helping and encouraging me to finish this thesis. All of your kindness and hospitality will always be kept in my memory.

Htet Myat Aung

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Introduction

1.1 Background and Rationale

Alcohol drinking is a major concern and cause of morbidity and mortality all over the world. Although betel nut chewing is not a problem for worldwide but still affects the Asia and Oceania region such as Myanmar, Sri Lanka, India, Thailand, Vietnam, Papua New Guinea and etc.

Over many centuries, alcohol is still a psychoactive substance with substance-producing properties that has been widely used in many cultures. Historically, alcohol is still holding an important role in social interactions, relationships and bondings. There is a belief in some regions that stress and anxiety of daily life can be relieved by moderate alcohol consumption which can also be called social drinking. But it's also known that excessive alcohol drinking is linked to negative and harmful outcomes which includes diseases and health impacts, criminal cases, traffic accidents, and this can also lead to alcohol dependence.(Hannah Ritchie and Max Roser,2018).

Alcohol related harm can be determined by pattern of drinking, amount or volume of alcohol consumed, type of beverages and quality of alcohol consumed. Excessive amount of alcohol drinking is leading to more than 200 diseases and injury conditions including alcohol dependence, liver cirrhosis, cancers and injuries. This is why a huge number of global, regional and national regulations and interventions are set to lower the excessive and harmful use of alcohol over the few decades.

Globally, the overall alcohol consumption in 2010 is about 6.2 litres of pure alcohol drinking per person aged 15 years and older which can be defined to 13.5 grams of alcohol and beverages per day. But for this world wide survey, one fourth of this consumption was unrecorded because of the problems like some alcohol and beverages which are made by home(homemade alcohol), illegally sold alcohol without national policy and regulation and so many others. 16.0% of 15 years and older drinkers are related with heavy drinking or alcohol dependence. Because of

alcohol drinking, there is about 3.3 million net death in 2012, which is 5.9 % of all causes all over the world. But there is a difference between male and female in death because of alcohol consumption. There is 7.6% of male death and female death is around 4 % caused by alcohol. (WHO, 2014a)

According World Health Organization 2010 data of alcohol which is published in 2014, European countries were leading the charts of highest alcohol consumption rates in 2010. Belarus is the highest alcohol drinking country with estimate amount of 17.6 litres per capita per year. It is followed by Moldova with 16.8 and Lithuania with 15.5 litres per year. Russia is in fourth place with 15.1 litres. So it can be assumed that Europeans are the highest alcohol drinkers. Asian countries are not in top list of highest alcohol consumption. (WHO, 2014a)

In South East Asia region, Thailand is the highest prevalence of alcohol drinking country with 7.1 %. Second place was India with 4.3% and it was followed by Sri Lanka with 3.7%. The countries with lowest prevalence of alcohol consumption are Timor-Leste 0.6%, Indonesia 0.6% and Bangladesh 0.2%. (WHO, 2014a)

World Health Organization (WHO) present a global strategy to lower excessive and harmful use of alcohol in World Health Assembly (May 2010). The strategy was informed to different kinds of associations and organizations such as NGOs, NGOs, and so many others. The strategy guides different regions and organizations with main priority and goals. This indicated that alcohol drinking is becoming higher in every income classes but people with upper middle income is the highest prevalence rate of alcohol drinking. Alcohol is also ranked as number one in 10 leading risk factors for health between 15 and 59 years of age. (WHO, 2014b)

Betel nut has been used and consumed in South and South East Asia and Pacific region. In some Pacific islands, it can be tracked back that is used for over more than 2000 years. Betel nut chewing habits have been passed from one generation to next generation over the years. According World Health Organization (WHO) data, there are more than 600 million people using various kind of betel nuts. Betel nut is one of the psychoactive substances and it is ranked fourth place which

follows nicotine, alcohol and caffeine. Betel nut chewing is a cultural and traditional habits for some countries and so it has so many health related risk factors and diseases if they use regularly. Betel nuts are defined and classified as carcinogen by World Health Organization (WHO). A large number of study, research and statistic show that betel chewing is related to health impacts and diseases such as oral and oesophageal cancer. If people chew and consume betel nuts regularly, they can get oral submucous fibrosis. (WHO statement in IARC Monographs Programme,2017)

Dr.William Adu-Krow, World Health Organization Country Representative of Papua New Guinea, present a speech at the ceremony of 'National No Betel Nut Day' in 2008 that Papua New Guinea is the number one country in highest incidence rate of oral cancer all over the world. WHO statistics of 2008 indicated that Papua New Guinea is the highest rate country of oral cancer with 32.3 out of 100,000 citizens. (Adu-Krow, 2008)

In a study of Betel nut chewing and its related factors in adolescent students in Taiwan, it stated that betel trees were planted in different kinds of regions in Taiwan. Betel chewing is a routine habit for some places and also particular ethnic groups. 59.0% -88.2% of oral cancer patients were caused by betel nut chewing. This study also indicates that there are rising numbers of betel nut chewing in different places and regions of Taiwan. Also, prevalence rate of betel chewing in cities is lower than villages.(Wang, Tsai, Huang, & Hong, 2003)

1.1.1 Alcohol and betel nuts chewing in Myanmar

In Myanmar, alcohol drinking becomes one of the major health risk problems because of changing lifestyle, social and economic development. According to previous research and statistics, prevalence of alcohol drinking in Myanmar is estimate percentage between 16.2% and 44.6% countrywide. In the countrywide survey of 2005-2016, alcohol is in seventh place of risk factor for most death and disability combined while tobacco is in first place. In WHO data of 2017, alcohol deaths in Myanmar are about 1686 (0.43%) of total deaths. Myanmar is ranked at 27 #

in the world with the age adjusted death rate of 3.36 per 100,000 of total population (WHO,2017).

Myanmar male drinkers have 11.4 per capita and female drinkers have only 1.1 per capita. So the average for both sexes is 8.9 per capita. In data for alcohol abstainers (15 years old and above), Male abstainers have 76.5% and female have 91.1%. In data of former drinkers (15+), Male is 11.1% and female is 5.2 with total percentage of 8.0 % for both sexes. For data of abstainer (15+) in the past 12 months, male (87.6%) and female (96.2%) with total percentage of 92.1% for both sexes. In records for prevalence of alcohol use disorders and alcohol dependence (%) 2010, Male is 2.7 in alcohol use disorders,1.3 in alcohol dependence. Female is 0.5 in alcohol use disorders and 0.2 alcohol dependence. Both sexes have average of 1.5 in alcohol use disorders and 0.7 in alcohol dependence. Prevalence of alcohol use disorders and alcohol dependence in Myanmar is still lower than other countries of WHO South East Asia region. (WHO, 2014a)

In Myanmar, betel chewing habit is very popular since ancient times. Not only Myanmar royalties like to consume betel nuts but also commoners are really fond in chewing betel nuts or areca nuts. Both men and women consume betel nuts and other varieties of areca. Also, betel nut chewing habits are more common in rural areas than urban areas nowadays. Oral cancer is the fourth highest in male and sixth highest in women.(Win, 2015) Myanmar has the highest prevalence of betel chewing in South East Asia in 2009 according to WHO. Betel chewing rate in Myanmar is 51.4% in male and 16.1% in female with total average of 29.6% in 2009.The age group is 15-64 years old. The survey was done by Myanmar STEPS (STEPwise approach to surveillance) survey. (WHO, 2011)

The previous research focused mainly on community about alcohol drinking and betel nut chewing, it is interesting that researches about prevalence of alcohol drinking and betel nut chewing habits of factory workers and staffs are rarely seen in Myanmar. As alcohol and betel nut is two of the most dangerous psychoactive substances and it can affect efficiency in working among factory and workshop staffs if they are heavy drinkers or alcohol dependence and heavy betel nut consumers. It is

necessary for factory and workshop workers to learn the risk factors of alcohol drinking and betel nut chewing.

Another two cross-sectional studies of alcohol drinking and betel chewing of Myanmar workers in Thailand indicated that the prevalence of alcohol drinking and betel nut chewing are really high. The prevalence rate of alcohol drinking and betel nut chewing in these two studies are associated with male gender, marital status, traditional influences, encouragement of friends or family members and education status (Primary, secondary and etc). It needs to be fixed and regulated by government or non-governmental organization(NGO) and International non-governmental organization (INGO) in order to reduce behaviors and habits of alcohol drinking and betel chewing.(Howteerakul, Suwannapong, & Than, 2005; Htin, Howteerakull, Suwannapong, & Tipayamongkholgul, 2014)

As alcohol drinking and betel chewing become most important risk factors of health around the world, alcohol drinking and betel chewing rate is also increasing in Myanmar too. But the main concern is that there is limited articles and researches published online about alcohol drinking and betel chewing in Myanmar. So if someone wants to know the condition of alcohol consumption and betel nut chewing of cities or places in Myanmar, they might find so many difficulties. There are a few number of published articles and researches about alcohol drinking and betel nut chewing on Yangon. Also there is only one study about alcohol consumption, betel nut chewing and cigarettes smoking about Myanmar workers but it is conducted in Thailand.(Htin et al., 2014)

Alcohol drinking and betel quid chewing research articles with keywords of “alcohol consumption”, “Betel nut chewing “, “Myanmar”, “Mandalay”, “factory workers” were searched in the internet and websites such as Research Gate, Pub Med, Pro Quest and also from library of College of Public Health Sciences. After searching all of the websites and library, 7 articles related with alcohol drinking and betel nut chewing were found. Most of the studies were cross-sectional studies with objectives of prevalence and associated factors of alcohol drinking and betel nut chewing. Interesting facts is that there is no articles and studies around Mandalay as all studies aim the people in Yangon and Myanmar workers in Thailand.

1.1.2 Research gap

As there are a few research articles about alcohol drinking and betel nuts chewing in, there is no research article that focus on both alcohol drinking and betel nuts chewing. This study focus on both alcohol drinking and betel nuts chewing. Also, there is also no research articles that focus on the workers. In Myanmar, people who have betel nuts chewing habits also tend to have alcohol drinking habits too. But, there is still no evidence or research articles to prove the relationship between alcohol drinking and betel nuts chewing in Myanmar.

The previous study about alcohol drinking in Myanmar was conducted in 2015 (Insein Township) and previous study about betel nuts chewing was conducted in 2016. So, there is no new research study about alcohol drinking and betel nuts chewing after 2016. Previous studies in Myanmar focus on prevalence and factors influencing alcohol drinking and betel nuts chewing. But there is still no study that are focusing on the pattern of use. This study was the first study that focus on both alcohol drinking and betel nuts chewing.

Apart from articles and research of alcohol drinking and betel nut chewing in Yangon, there is little facts and research about other cities. Mandalay is the second largest city in Myanmar and there is still limited data on alcohol drinking and betel nut chewing although we can see many different alcoholic shops and betel nuts selling shops around Mandalay. Also betel nut chewing habit is still popular around people in Mandalay. And yet they don't know the risk factors and diseases affected by alcohol drinking and betel nut chewing.

This study was focused on pattern of use in alcohol drinking and betel nuts chewing among workers of Myitnge Train Carriage and Wagons Workshop as there is no such articles about alcohol drinking betel nuts chewing of workers in Mandalay and research area (Myitnge Town). Non-Government Organizations(NGOs) ,universities and institutes can create intervention and rehabilitation programs for alcohol drinking and betel chewing in the future. It will also be beneficial and helpful for researchers to do comparison between workers and staffs of different factories.

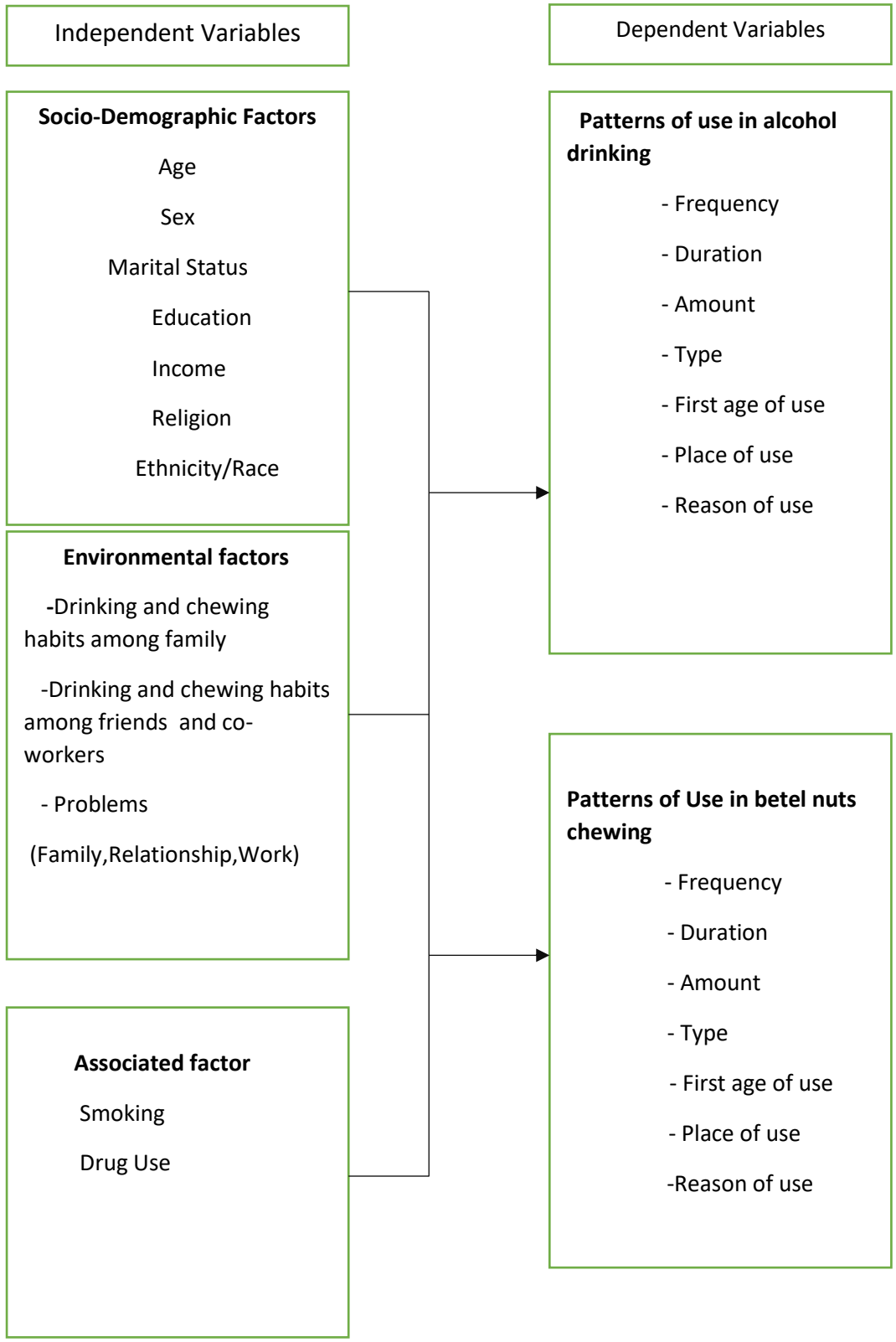
1.2 Research Question

What are the patterns of use towards alcohol drinking and betel nuts chewing among workers of Myitnge Train Carriage and Wagons Workshop?

1.3 Research Objective

To assess the patterns of use towards alcohol drinking and betel nuts chewing among workers of Myitnge Train Carriage and Wagons Workshop.

1.4 Conceptual Framework



1.5 Operational Definitions

Alcohol

Alcohol is a drink that include ethanol which is produced by fermentation of grains, fruits or other sources of sugar. Alcohol drinking have important role in many social cultures.

Patterns of alcohol drinking

In this study, pattern alcohol drinking will be identified with frequency, duration, amount, type of alcohol, first age of drinking alcohol and place of alcohol drinking.

Frequency was measured with alcohol drinking days per month. Frequency will be determined by asking question “How many days do you drink in a month?” Frequency of alcohol drinking was classified into four categories such as monthly, 2-4 days per month, 1-3 days per week, 4 days and more per week. Amount means alcohol drinks per single occasion. Amount of alcohol drinking was determined by number of drinks workers had in single occasion. Number of drinks were classified into two categories with “less than 5 drinks” and “5 drinks and more”.

Type of alcohol was determined by asking questions about the type of alcohol. Type of alcohol will be divided into (a) Beer (b) Whiskey (c) White spirit (d) Rum (e) Gin (f) Home brew (g) Wine. First age of use means the age that a person started drinking alcohol. First age of use was determined by asking the workers about their age that started drinking alcohol. Place of use was determined by the places that workers used to drink alcohol. Place of alcohol drinking was classified into (a) Home (b) Work (c) Restaurants and bars (d) Others. Reasons of alcohol drinking were classified into (a) Problems in family/works/relationships (b) Events (Festivals, celebrations etc) and (c) Others.

Betel nuts

Betel nuts, which is also known as Areca nuts, the fruit of the areca palm, which grows in most of the places of South East Asia, South Asia tropical Pacific and some parts of East Africa regions. In this study, pattern of betel nuts chewing will be measured about past 12 months

Patterns of betel nuts chewing

In this study, pattern of use in betel nuts chewing will be identified with frequency, duration, amount, type of betel nuts, first age of chewing betel nuts and place of chewing betel nuts.

Frequency means alcohol drinking days in a month and it was determined by asking question “How many days do you chew betel nuts in a month?”. Amount means chewing packs of betel nuts per single occasion and was determined by number of betel nuts workers can chew in single occasion. Number of betel nuts was classified into (a) 1-2 packs (b) 3-4 packs (c) 5 or more packs.

Type of betel nuts was measured with the various type of betel nuts that the participants have been chewing and was determined by asking questions about the type of alcohol. Type of betel nuts will be divided into (a) Betel nuts without tobacco (b) “92” tobacco (c) “Parajet” tobacco (d) “45” tobacco (e) “100” tobacco (f) “Signal” (g) “Star” (h) Betel leaves (steamed). First age of use was measured with the age that a person started chewing betel nuts and was determined by asking the workers about their age that started chewing betel nuts.

Place of use will be determined by the places that workers used to chew betel nuts. Place of chewing betel nuts will be classified into (a) Home (b) Work (c) Restaurants and bars (d) Others. Reasons of chewing betel nuts will be classified into (a) Problems in family / works /relationships (b) Events (Festivals, celebrations etc) and (c) Own satisfaction and (d) encouragement from co-workers or friends.

Binge drinking

Binge drinking is the consumption of large amount of alcohol in a short amount of time. Binge drinking can be determined when workers have 5 or more drinks in men and 4 or more drinks in women according to Centers for Disease Control and Prevention. (Center for Disease Control and Prevention, 2018)

Workers

Workers mean people who work at Myitnge Train Carriage and Wagons Workshop such as officers, supervisory and staffs.

There are 1467 workers in Myitnge Train Carriage and Wagons Workshop. In Myitnge Train Carriage and Wagons Workshop, there are three main departments.

(1) Repair Workshop

(2) Construction Workshop

(3) New Coach Plant

Cigarettes Smoking

Cigarettes smoking is the inhalation of the smoke that contain many ingredients and it is the act of smoking usually in social situation or to relieve stress.

Chapter 2

Literature Review

This study chapter reviewed about the literatures and studies that are related to alcohol and betel nuts. In this chapter, it explained the process of fermentation for alcohol, metabolism of alcohol, harmful effects of alcohol and prevention for harmful use of alcohol were reviewed. Also, metabolism of betel nuts, harmful effects of betel nuts and prevention for use of betel nuts are included. Moreover, cultural and norms for alcohol and betel nuts chewing in Myanmar, ASSIST screening and ecological model were also reviewed.

2.1 Alcohol

2.1.1 What is alcohol?

The Nation Institute on Drug Abuse stated that ethyl alcohol or ethanol is an active ingredient in wine, liquor and beer. This ingredient can be called alcohol. There is a process called fermentation which is important in making alcohol. Sugar is chemically decomposed into alcohol and carbon dioxide after the yeast is fermented. After that, carbon dioxide passes through the gas bubbles and only water and ethanol exist in that process. Fermentation process is so detailed and accurate that if the air enters the yeast, the whole process is ruined and becomes ethanoic acid, one of chemicals of common vinegar. (Center, 2019)

The time of fermentation process can determine the level of alcohol. So it means that when the fermentation process is longer, the content of alcohol will be higher. Alcohol has the ability of absorption into human body through stomach and also the small intestine. Alcohol can affect immediately to human body though stomach, small intestine and can affect the other organs of human body. The simple structure and small size of alcohol molecules allows themselves to easily pass through the blood circulation and every cell membrane of human body. When the amount and

content of alcohol is in higher level, it can damage many cells in the body including the liver, heart and nervous system. In the liver, a chemical called acetaldehyde is transformed from alcohol, and it can cause the cancer not only to liver but also to other organs of the body. Blood alcohol concentration (BAC) can be determined by level and concentration of acetaldehyde in the body. (Services, 2017)

Alcohol have dependence-producing properties and many countries still widely consumed alcohol as traditions and also in many cultures. If people consumed in harmful way (excessive drinking), there will be side effects such as diseases and socio-economic problems with family or society. More than 200 diseases and injuries can be caused by alcohol consumption according to World Health Organization (WHO). There will be liver diseases, cardiovascular diseases, behaviour and mental instability, alcohol dependence and injuries such as traffic accidents, violent crimes. For injuries and collisions such as road traffic accidents and violent crimes tends to happen in younger age groups. (WHO, 2018)

2.1.2 Metabolism of alcohol

Alcohol can be metabolized by many pathways and processes. Among these pathways and process ,the most common one have two enzymes, aldehyde dehydrogenase (ALDH) and alcohol dehydrogenase (ADH). Alcohol molecules are broken down by these two enzymes and become possible to release it from the human body. Firstly, acetaldehyde can be transformed from alcohol which is metabolized by ADH. Acetaldehyde is carcinogenic and have highly toxic properties. And, acetate is formed and broken down from acetaldehyde. Again, acetate is broken down into carbon dioxide and water which is convenient for elimination.

There are another two enzymes called cytochrome p450 2E1 (CYP2E1) and catalase. These enzymes also broken down into acetaldehyde from alcohol. But, CYP2E1 can be active only when people have drunk large amount of alcohol. Catalase can metabolize only small portions of alcohol in the body. Small portions of alcohol can interact with fatty acids and removed to transform into fatty acid ethyl esters (FAEEs). These compounds can affect to liver and pancreas.

Acetaldehyde is a toxic substance. Acetaldehyde is a short lived compound and later broken down into acetate. Acetate is a compound which can contribute harmful effects to the human body. These effects can be seen in the liver where most of the metabolism of alcohol take place. Some portions of alcohol can be metabolized in other organs which include pancreas and brain. Also, small portions of alcohol are broken down into acetaldehyde in gastrointestinal tract which can cause damages.

Some of the behavioral and physiological effects that are related to alcohol can be caused by acetaldehyde. As example, when acetaldehyde is administering into laboratory test animals, it can cause sleepiness, coordination, memory impairment and other negative effects which are related with alcohol. But some believe acetaldehyde in the brain cannot cause damage because of insufficient amount. Brain has a unique barrier of cells which helps to prevent toxic substances which are circulating in the blood stream of human body. (NIAAA, 2007)

2.1.3 Alcohol effects on human body

Alcohol drinking can cause both short-term and long-term effects to the human. Short-term effects of alcohol drinking are slurred speech, drowsiness, vomiting, diarrhea, upset stomach, headaches, breathing difficulties, distorted vision and blackouts. Long-term effects of alcohol drinking are unintentional injuries, alcohol poisoning and many others. (The truth about alcohol, drugfreeworld.org,2018)

National Institute on Alcohol Abuse and Alcoholism stated that alcohol drinking can cause negative effects on many parts of human body. Drinking alcohol can make abnormality to brain functions such as mood swing, behaviour changes, impairment in memory and learning, incoordination in movement.

Heart is one of the main organs that can be affected by chronic alcohol drinking. Heart diseases that can be caused by alcohol drinking are cardiomyopathy, arrhythymias- irregular hearbeat, stroke and increased blood pressure. Liver is mainly affected when people consumed alcohol for a long time and sometimes become

alcohol dependence. The abnormalities are fatty liver (Steatosis), alcoholic hepatitis, cirrhosis and fibrosis. (NIAAA, 2018)

A study on alcoholic liver fibrosis stated that 80% of hepatotoxic deaths are caused by alcoholic use disorders (AUDs) and also 50% of liver cirrhosis are cause by alcohol too. In a period of 10 years, risk of cirrhosis increased with alcohol doses of 60g/day in male and 20g/day in female. Cases of 20-40% of steatosis are evolving into steatohepatitis or steatofibrosis and also, 8-20% of steatosis are evolving into liver cirrhosis directly.(Testino, Leone, Fagoonee, & Pellicano, 2018) Genetic and environmental factors sometimes determine the risk of alcoholic liver cirrhosis. Even though colder weather is believed to worsen the case of misusing alcohol, there is no proof on these impacts on alcohol drinking intake and alcoholic liver cirrhosis.(Ventura-Cots et al., 2018)

Although there is a massive association between alcohol drinking intake and liver cirrhosis, there is still only 10-20% of evolving cirrhosis among heavy drinkers. Also, alcohol drinking is an important factor in developing liver disease, other cofounding and risk factors should be determined to cause liver damage. Other risk factors such as obesity, HCV infection and diabetes mellitus are associated in developing of liver cirrhosis.(Fuster & Samet, 2018) Drinking alcohol can produce adverse effects on pancreas and can cause pancreatitis. Pancreatitis is a disease that is inflammation and swelling of blood vessels around pancreas that block proper digestion.(National Institute on Alcohol Abuse and Alcoholism, Alcohol Effects on the Body) Pancreatitis caused by heavy alcohol drinking is a potential fatal case for human. In United States 60-90% of patients with pancreatitis are caused by heavy alcohol drinking. It is assumed that if people in United States drink more than 80 gram per day with a minimum of 6-12 years can cause symptomatic pancreatitis.(Chowdhury & Gupta, 2006)

Chronic and heavy alcohol drinking can cause different types of cancers around the human body. These are head and neck cancer, oesophageal cancer, liver cancer, breast cancer, colorectal cancer. When people drink alcohol too much, their immune system become weak and vulnerable to diseases and infections. Tuberculosis and pneumonia are more likely to be caused in chronic alcohol drinker than people

who don't drink alcohol much. Also, heavy or binge drinking can cause human body prone to infections. (NIAAA, 2018)

2.1.4 Alcohol dependence, withdrawal and relapse

When people have continuous and excessive use of alcohol, this can cause developing of alcohol dependence. Alcohol dependence means that alcohol drinking habits become important and central in their life. And although they know the harm cause by alcohol, they continue to drink. Alcohol drinking people will think most of their time about alcohol and they find it hard to stop drinking or control the amount of drinking. (Services, 2017)

Alcohol dependence is related with withdrawal syndrome when alcohol drinking habits are stopped or reduced. The process of alcohol dependence and withdrawal is really dynamic and complicated. When people have alcohol dependence and also alcohol withdrawal, this can cause both physical and psychological problems. After periods of abstinence of alcohol, the presence of alcohol withdrawal symptoms may lead to relapse. Clinical studies show that people who have alcohol dependence are more prone to relapse than people who don't have alcohol dependence. Withdrawal related anxiety is caused by one factor contributing to relapse and it is likely to be reflected in adaptive changes in the brain by continued alcohol exposure. The medications for alcohol withdrawal symptoms can be developed that target the excessive, uncontrollable alcohol consumption in the future.(Becker, 2008)

2.1.5 Prevention of harmful use of alcohol

In the pathways of alcohol-related harm, there are amount of alcohol drinking, pattern of alcohol drinking and quality of alcohol consumed by people. The amount of alcohol consumed which means the volume of alcohol drinking can solely affect the human and can cause diseases, injuries. It is also called dose-response relationship. As

an example, risk of cancers can be worsened by high volume of alcohol drinking. There is also another factor which can affect and it is the pattern of alcohol drinking. For example, when people drink alcohol and eat food at the same time, it tends to be less harmful than alcohol drinking at other times. Also, the pattern of alcohol consumption is related with heart diseases, crimes and injuries. Heavy episodic drinking (HED) can lead to severe heart diseases. Health and mortality of people can be affected by the quality of alcohol. Homemade beverages or illegally sold alcohol include methanol and other toxic agents (eg. Disinfectants). So alcohol can cause multiple health problems to people who consumed. However, there is still no evidence about health problems caused by illegally sold alcoholic beverages and homemade beverages. Alcohol consumption can cause harms to human with three important direct mechanisms and these three are (1)organs and tissues affiliated with toxic side effects (2) intoxication which leads to disability of physical coordination, cognition, perceptiveness, physical conditions and consciousness, (3) dependence whereas the alcohol drinker's self-control condition is affected and impaired. (WHO, 2014a)

In 2010, World Health Organization (WHO) present a strategy to reduce harmful use of alcohol globally. World Health Assembly endorsed the global strategy in 2010. This global strategy will be collaborated between Secretariat of World Health Organization (WHO) and Member States. All the organizations, Non-government organizations (NGOs),industries will be involved in this important process. The strategy gives guidance to every countries and set their own goals and priorities in reducing harmful use of alcohol. There are 193 countries which can be called Member States who will set their own priorities and reduce the harmful use of alcohol. In 2004, alcohol drinking became third highest risk factor according to percentage of Disability-adjusted life years (DALYs) by country income level. Upper middle income group is the highest in alcohol attributable deaths per million inhabits. In category of age groups and regions, European region is the highest total male death in most of the age group In this strategy, there are many different structure to implement the prevention of harmful use of alcohol globally such as (1) scene setting, (2) seeking challenges and opportunities,(3) setting aim and objective, (4) Guiding principles, (5)

National level policy intervention (6) Key roles and components for global actions (7) and finally implementing the strategy. (WHO, 2014b)

2.1.6 Alcohol, socio-demographic factors and pattern of use

In young adults and children, alcohol can give negative effects on the brain such as difficulty in learning and impairment of memory because the brain is still developing until 20s. Older adults are at lesser risk than younger adults who are below 25 years old. Because young adults have higher risks in traffic injuries, violence related to alcohol intake. Also young adults have higher chance to become alcohol dependence and lower tolerance of alcohol than older adults. In young age, there is also higher risk of unwanted and unprotected sex, violent crimes and negative effects in social relationships with families and friends. In old age, alcohol drinking habits tend to decline but the risk of developing problems related with alcohol also have a high risk in older people. Alcohol dependence or alcohol abuse can be sometimes caused by loss of beloved ones, loneliness, illness, retirement or insomnia. Ageing people have less tolerance to alcohol effects and alcohol cannot be broken down efficiently by human body due to old age. Ageing people can be drunk with less amount of alcohol and high risk of injury and falls too. (Zealand & Staff, 2012)

Level of education can determine and influence in alcohol drinking and sometimes affect the pattern of alcohol drinking. A study about college students in United States stated that people who did not finish high school were 6.34 times higher to have alcohol dependence than people who finished high school. This study was conducted between 1980 and 1984 with approximate amount of 3000 participants at each of the five Epidemiological Catchment Area program survey sites such as New Haven, Baltimore, St. Louis, Durham-Piedmont and Los Angeles.(Crum, Helzer, & Anthony, 1993). A study on older American people also stated that education level is positively associated with pattern of alcohol drinking. This cross-sectional study was conducted in 2016 and include 1493 participants. Among 1493 participants, there are

734 Blacks and 759 Whites. This study focus on association between socio-demographic factors and alcohol drinking. Educational level is also interacted with race groups on alcohol drinking. Patterns of alcohol drinking can be different according to marital status of people. A meta-analysis study which was conducted in United States pointed out that bad marriage can sometimes lead to alcohol abuse and alcohol dependence. In this study, alcohol drinking is associated with negative marriage interaction patterns and marital violence. Also, couple who are drinking have more negative behaviours than no-drinking couple. This study was conducted in 2003.(Marshal, 2003) But a study which was conducted in England, Scotland and Wales stated that people who divorced are higher in consumption rate (43.9% in men and 14.7% in women) than others and married people are the least. Large amount of alcohol drinking is associated with marital separation. This study was Cohort study which include all 1958 born children who were from England, Scotland and Wales. This study was conducted in 1999.(Power, Rodgers, & Hope, 1999)

Religion has been identified as important indicator in patterns of use towards alcohol drinking. There are a lot of different perspective on alcohol drinking in terms of different religion. Alcohol drinking is against by some religions, some advocate moderate drinking and most condemn heavy consumption of alcohol. Alcohol drinking in people can be influenced by religions. In a cohort study of alcohol drinking and religion which was conducted in United States stated that people who are religious tends to avoid drinking alcohol and less likely to become drinkers. But, abstention norms and commitment about religions are not related with low rate of alcohol use disorders among drinkers. This study include 1795 participants since 1972 when they are 3 years old.(Luczak et al., 2014) In a study conducted by Canadians also stated that religion holds a key factor in alcohol drinking. In this study, religion with highest consumption rate is Lutherans (88.4%) and the lowest is Muslim (27.4%). Also, all other groups have more than 50% consumption rate of alcohol.(Tuck, Robinson, Agic, Ialomiteanu, & Mann, 2017)

Ethnic groups and culture can also influence the pattern of alcohol drinking. Different ethnic groups have different patterns of alcohol drinking and it is proved by many studies. A study based on National Survey Data, United States proved that

pattern of alcohol drinking can be affected by culture, ethnicity, gender and age. This study focus on different racial-gender groups. This study includes total 7249 participants between 2005 to 2010. (White, Black and Hispanic) In this study, white men and women have lower odds of alcohol related problems than black men and women in terms of light drinking and heavy drinking. This study focus on gender specific nature and ethnic disparities.(Witbrodt, Mulia, Zemore, & Kerr, 2014) A study called Coronary Artery Risk Development in Young Adults (CARDY) also proved that pattern of alcohol consumption can be influenced by different races. This study was prospective longitudinal study and conducted in 1985 and 1986. This study focus on people aged 18-30 years old who lived in Birmingham, Chicago, Minneapolis and Oakland. In this study, there were two ethnic groups with Whites and Blacks. In this study, Whites tend to drink more than Blacks in general. Whites have higher rate of drinkers than Blacks with 43.6% in light drinkers, 15.8% in moderate drinkers and 6.945 in heavy drinkers. (Sloan, Malone, Kertesz, Wang, & Costanzo, 2009)

Problems in family, relationships and work can affect the person in alcohol consumption. When people have stress from certain conditions, they tend to drink alcohol in order to reduce stress and anxiety as a response. Chronic alcohol drinking is related with increasing of an hormone called glucocorticoid which is released from brain region, hypothalamus, in response to stress. So, if a person drinks high amount of alcohol, large amount of glucocorticoid can be produced from adrenal gland. A study on stress and alcohol which was conducted in California revealed that not every stressful conditions can make people drink more alcohol. It also depends on other factors such as genetic factors and past history of life experiences.(Anthenelli & Grandison, 2012)

Binge drinking is the consumption of large amount of alcohol in a short amount of time. Binge drinking can be determined when workers have 5 or more drinks in men and 4 or more drinks in women according to Centers for Disease Control and Prevention. Binge drinking is a very serious problem in alcohol drinking but this can be prevented. In United States, binge drinking is the most popular and

deadly pattern of excessive alcohol consumption. (Center for Disease Control and Prevention, 2018)

In a study of Binge drinking of alcohol by U.S adults in 2015, 17.1% of total adults have an average of 53.1 binge-drinking episodes per person who have binge drinking habits annually. This means that an average of 5 or more than drinks in men and 4 or more than drinks in women. Total binge drinking is about 17.5 billion every year. Most common age in binge drinking is young adults which 18-34 years old but people who are above 35 years olds include in half of total binge drinkers. In lower education level people, binge drinking of alcohol tends to be more than higher education level people. Binge drinking also tends to be higher in low household incomes than high household incomes.(Kanny, Naimi, Liu, Lu, & Brewer, 2018)

Another study of binge drinking is high school students in United States between 1991-2015. The type of study is cross sectional, biennial school-based survey of 9^{th}-12^{th} Grade students in United States. In this study, although binge drinking habits among high school students are declined throughout years, there is still a significant prevalence among students. The study stated that approximately one out of three high school students was still drinking alcohol and one out of six students were binge drinkers in 2015.(Marissa B. Esser, 2017)

2.1.7 Policy and interventions for alcohol consumption in Myanmar

In Myanmar, there is still no written national policy (adopted/revised) or national action plan for alcohol consumption. There is tax on all kinds of alcohol beverages such as beer, wine and spirits. National legal minimum age for both off-premise and on premise sale of alcoholic beverages in 18 years old in all kinds of beverages. For restrictions for on and off premise sale of alcoholic beverages, it is restricted in some specific events. National maximum legal blood alcohol concentration(BAC) when driving vehicle is 0.07% in general, 0.00% in young adults,

0.00 % in professional drivers. There is legally binding regulations on advertising of alcoholic beverages, product placement, alcohol sponsorship. There is still no legally required health warning labels on alcohol advertisements and containers. There is community action that is fully supported by National Government and there is also national monitoring system. (WHO, 2014a)

2.2 Betel Nuts

2.2.1 What is betel nut?

Betel Nut which is also known Areca Nut, is the seed of fruit of areca palm (Areca Catechu). There are different names, pronunciations, ingredients depend on cultural and traditional groups. The seed is supposed to be taken out from outer layer of the fruit and there are various types to be used such as dried, fresh, boiled, baked, roasted or cured. Popular method for betel nut is slice into thin pieces and roll all the pieces into betel leaves with lime powder or crushed seashells. This type of mixture is called betel quid, betel chew, betel nut chew and betel pan.(ADF, 2018)

Betel nut has been used widely throughout the history and deeply cultivated in some religious and some sociocultural events. In United Kingdom and other developed countries, betel nut chewing continues and enhanced the use of betel nut during migration to other continents. British Asian have brought the betel nut chewing habits from India, Pakistan, Bangladesh and other countries and it becomes culturally bound to them.(Warnakulasuriya, Trivedy, & Peters, 2002)

Areca nut can be consumed along with inflorescence, which can also be called pods or flowers, or catkins. They are parts of the vine such as stem. Inflorescence consumption habits are popular in Melanesia and also in China, Taiwan and it is included into quid which is famous for its aromatic flavor. Betel inflorescence has high amount of phenolic compounds such as isoeugenol, eugenol methyl ester, safrole, hydroxychavicol and eugenol. Safrole, which is main phenolic compounds, is a possible carcinogen which is unsafe for human. (Cancer, 2004)

Betel nut can be mixed with tobacco ingredients or rolled into leaf of the betel plant with piper. Betel nut is consumed by an estimated 200-400 million people mainly in Asia (Indonesia, China). Both men and women like to use betel nut, in some cultural tribes or societies. Sometimes women tend to use betel nut more than men in some cultural tribes or groups.(Warnakulasuriya et al., 2002)

Betel nut is one of the psychoactive substances and it is ranked fourth place which follows nicotine, alcohol and caffeine. Betel nut chewing is a cultural and traditional habits for some countries and so it has so many health related risk factors and diseases if they use regularly.

2.2.2 Metabolism of betel Nuts and leaf

Metabolism of betel nus are already tested on laboratory rats. Arecoline is a compound which can be de-esterified in the liver to arecaidine. Both arecaidine and arecoline are released as mercapturic acid, N-acetyl-S-(3-carboxy-1-methylpiperid-4-yl)-L-cysteine.

The metabolism of arecoline compound is complicated. It can be five major metabolic products which are coming from different routes of metabolism. Arecoline can be metabolized quickly into the liver and kidney. But, blood or brain homogenates do not metabolize arecoline compound to any degree. Different enzyme inhibitors are using to rule out the significant involvement of hepatic microsomal oxidase or monoamine oxidase which are included in arecoline. Metabolism of arecoline is blocked in the liver homogenate by specific carboxylesterase inhibitors tri-ortho-tolylphosphate and tetraisopropyl pyrophosphoramide. Also, carboxyl esterase is mainly responsible for arecoline in the rats. Arecoline,, which are short-lived, are transformed into rapid in-vivo hydrolysis of enzymes of ester functionality to become carboxylic acid derivative arecaidine which can be important metabolic compound of arecoline in rats. There also in-vitro studies of human that are related to metabolism of betel nuts. Hydroxychavicol is a major phenolic compound which can be found in betel leaf and inflorescence of Piper Betel. In metabolism process, an

ortho-quinone is produced, which can enhance the production of reactive oxygen species via redox cycling. The compounds of hydroxychavicol such as quinones,imine methide and quinones methide which can be released into conjugation reactions with decreased level of GSH.(IARC, 2018)

2.3.3 Short term and long term effects of betel nuts

Some people have immediate side effects after they chewing betel nuts or areca nuts. The side effects are feeling alert, rapid heart rate and palpitations, high blood pressure, mild euphoria, red face,feeling warm and sweating. People who chew areca nut for the first time can get side effects such as tremor, dizziness, upset stomach, diarrhea, vomiting and psychosis.(ADF, 2018)

If people chew betel nuts for a long time, there are so many risk and diseases that can affect to human body especially around the mouth, oral cavity and so many others. The long effects of betel nut chewing are mouth ulcer, gum disease and dental caries, and gum discolouration,which can be turned into reddish brown colour,submucous fibrosis and oral cancers stomach ulcer and cancer, dependence on betel nut and heart disease.(ADF, 2018)

Oral hygiene status and Dental Caries: Betel nut chewing or areca nut chewing can make bad for oral hygiene status. A study on status of oral hygiene in betel nut chewing people which was conducted among Indian people indicated that huge number of betel nut chewers are suffering from bleeding gums, difficult to open mouth and swallow food, halitosis, burning sensation, and oral cavity ulcers more than people who don’t chew betel nuts or areca nuts.(Parmar, Sangwan, Vashi, Kulkarni, & Kumar, 2008) Dental caries is one of the main problems affected by betel nut chewing. One study indicated that betel nut chewing or Pan chewing have a great influence in oral health of the people. The study was conducted among adult Pakistanis. The study showed that 32% participants who chew betel nuts or pan had a greater risk of problems of oral health with odd ratio(OR) 3.63. The significant effects of this study was in dental carries which have high risk with odd ratio 4.51 and also

gingival bleeding. This study includes total 1000 questionnaire for participants and total 994 were returned. The participants were aged between 30 to 50 years. Total 49 % of participants are women.(Tanwir, Altamash, & Gustafsson, 2008)

Periodontal Disease: In a study for severity of periodontal disease in people who chew betel nuts with or without tobacco, people who chew betel nuts with or without tobacco are lower in socio-economic status than control group. Bleeding on probing, probing pocket depth and Plaque index of people who chew betel nuts without tobacco and control group are lower than individual who chew betel nuts with tobacco. In conclusion, the severity of periodontal disease is higher in individual who consume betel nuts with tobacco. It also depends on poor education and low socio-economic status to determine the severity of periodontal disease.(Javed et al., 2013)

Oral Squamous Cell Carcinoma(OSCC) and Submucous Fibrosis: In another study of betel chewing indicates that betel nuts or areca nuts chewing can cause both benign and malignant disease. There will be discolouration of teeth (red colour), buccal mucositis and periodontitis. Also, cancers such as oesophageal cancer, hepatocellular carcinoma and most importantly oral squamous cell carcinoma (OSCC).(Wollina, Verma, Parikh, & Parikh, 2002) Another study pointed out that oral squamous cell carcinoma(OSCC) and submucous fibrosis can be caused among betel nut chewers. The study was conducted in Sri Lanka.(Haniffa et al., 2007)

Stomach Cancer: Stomach cancer can happen in people who consume betel nuts for long term. It is proved by a study among Indian people who live in Meghalaya. The study showed that Raw Areca Nuts (RAN) can induce stomach cancer.(Kurkalang, Banerjee, Ghoshal, Dkhar, & Chatterjee, 2013)

Heart Disease: In betel nuts chewing people, heart disease is one of the main risk factors. One study indicated that 8 out of 10 people who consume betel nuts or areca nuts will have coronary artery disease. This study was Case-control study with 300 cases of coronary artery disease and 300 controls. Odd ratio analysis is 7.72 greater likelihood in people who have coronary artery disease and they chew betel nuts for more than 10 years . This study was conducted in Pakistan. (Khan et al., 2013) Nationwide survey of Taiwan for study between betel nuts chewing and atrial

fibrillation showed that when the betel chewing rate is higher, the rate of atrial fibrillation will be higher too. The nationwide survey was conducted to 375,360 males and 1326(0.5%) were found with atrial fibrillation. Nationwide population based 2005 Taiwan National Health Insurance Research Dataset (NHIRD) and 2005 National Health Interview Survey (NHIS) were used for this study. This study stated that prevalence of atrial fibrillation were negatively associated with betel nuts chewing.(Tsai et al., 2013)

2.3.4 Betel nuts dependence and tobacco

Betel nuts are mixed with other substances such as flavouring agents and tobacco. So it can be assumed that there will be people with betel nut dependence if they consume betel nut for so long. There is a study that focus on the people who have betel nut dependence and it was conducted among male Pakistan population. The study will be comparing betel nut dependence with smoking dependence. The information of the study are socio-demographic characteristics, pattern of use and symptoms of dependency with DSM-IV criteria for substance abuse. Out of 851 participants, 36.8% were people who consume betel nuts and 28.4 were people who consume areca nuts with tobacco addictions Analysis of the study indicates that people who chew betel nut with tobacco addictions will likely to be betel nut dependent.(Mirza, Shafique, Vart, & Arain, 2011) There is another study of betel nut dependence conducted amount South Indian Community but they don't use tobacco. In this study, participants were assessed their pattern of use, chewing history and features of dependence. Approximately half respondents consume 1-3 betel nuts/day(mean=1.9,SD=0.98). The average number of betel nut chewing episodes per day is 4.4 (SD=3.4). The symptoms of dependence were low in every level, but approximately 44% of betel nut chewers have at least one of the dependence symptoms.(Bhat, Blank, Balster, Nichter, & Nichter, 2010)

2.3.5 Betel nuts, socio-demographic factors and pattern of use

Betel nuts chewing can be seen in every age groups. A study in Myanmar, which is conducted in 2016, stated that average age of betel nuts consumer is about 45 years (Myint, Narksawat, & Sillabutra, 2016) But a telephone survey about betel nuts chewing which is conducted among Kaohsiung residents expressed that 13.3% were chewing betel nuts out of 1,162 participants. All the chewers were male and younger people tend to chew betel nuts in this study. This study used two-stage Waksberg-Mitofsky random digit dialing method. Self-developed questionnaire were used for this study. This study proved that betel nuts chewing is predominantly male habit.(Chen & Shaw, 1996) So there are differences about age groups in articles which is focused on betel nuts chewing. Socio-demographic factors of people can determine the pattern of use in betel nuts chewing. A study in Solomon island, which is focused on betel nuts consumption, stated that a lot of factors can influence in betel nuts chewing. In this study, 81 percentage of participants are chewing betel nuts which is higher than former studies about betel nuts chewing. Average age of people that started chewing betel nuts in this study was 16.2 years and younger adults are likely to chew more than older people.(Pratt, 2014)

People who live in rural areas are more likely to consume betel nuts than people who live in urban areas. A study about betel nuts chewing among Taiwan students demonstrated that females were consuming betel nuts more than male students. And the higher the age, the higher the prevalence of betel nuts chewing in this study. This study include students from general senior and vocational senior high schools, and the first three classes of junior colleges in the east,west,north and south areas of Taiwan. And, stratified, cluster and random sampling was used for this study. (Wang et al., 2003) In a study about immigrants from Indian subcontinent to Italy stated that people from South East Asia used to consume betel nuts with 37.9% prevalence. People who are at risk of oral cancer are less aware in general about disease. This study stated that betel nuts chewing knowledge and awareness were totally lacking in Italy. This study include immigrants who are first generation adult

male that came from Pakistan, India, Sri Lanka and Bangladesh, who were currently living in Rome.(Petti & Warnakulasuriya, 2018)

Papua New Guinea is highest in incidence of oral cancer not only in Asia but also in the world. This statement is presented by World Health Organization Representative of Papua New Guinea, Dr.William Adu-Krow , in the assembly of 'National No Betel Nut Day'. There is huge number of consumption of betel nuts and tobacco and also alcohol consumption. (Adu-Krow, 2008) In five regions of Papua New Guinea, 79% of respondent were betel nut chewers according to WHO STEPS survey done by HOPE worldwide between March 2007-March 2008 . Five regions are National Capital District, Manus, Gulf, Madang and Simbu).

The prevalence of betel nut chewing in 2012 is low in Thailand with 1.3% in men and 6.3% in women with average of 3.9% .In Cambodia, cigarette smoking is really common among men but for women, betel nut or areca nut chewing is really common. Approximately 560,482 women (95% Confidence Interval) are currently consuming betel nuts with tobacco. In Commonwealth of the Northern Mariana Islands, people like to chew only betel nuts other than various arecas. A recent unpublished study indicated that 90% of participants are consuming betel nuts or areca nuts right now. Nearly all participants started consuming at the age of 12 years old. Other Asian-Pacific countries such as Palau, Marshall islands, Solo islands have high rate of betel nuts chewing. (WHO, 2012)

2.4 Cultural/Norms Related to Alcohol Drinking and Betel Nuts Chewing in Myanmar

In Mandalay region, men usually drink alcohol at the weekends. Sometimes, they tend to drink alcohol after work in the weekdays. As there are people varieties of ethnic groups and religions, there are different alcohol drinking patterns.

Betel nuts chewing habits are still popular among Mandalay citizens. They tend to chew betel nuts all the time as betel nuts are very convenient to buy. Most of

them chew one or two packs of betel nuts per day. But some people have habits of chewing betel nuts the whole day starting from morning to night. They also like to chew betel nuts after drinking alcohol.

A cross-sectional study of betel nut chewing among adults in Insein Township, Myanmar stated that the prevalence of betel nut chewing is 55.2%. This study focus on prevalence and factors affecting betel nut chewing. There are 420 participants who are above 18 years old from Insein Township. Average age is 45 (±15) years. 29 years (±13) is the mean age of people that start chewing betel nuts. 62.3% of people who consume betel nuts also use tobacco and 24.2% were also smoking cigarettes. Factors influencing betel nut chewing habits are male gender, people who currently drink alcohol, low education status (Primary or Secondary school level), low level of knowledge of risks of betel nut chewing. This study also stated that participants need to have better knowledge about the health effects of betel nuts chewing.(Myint et al., 2016)

2.5 Related Studies about Alcohol Drinking and Betel Nuts Chewing

In a study of alcohol consumption among adult males in urban area of Thanlyin Township, the study shows that there is 29.5% (112 adult males) prevalence rate of alcohol drinking among total 380 adult males. This study was cross-sectional study and multi-stage sampling was used for sampling technique. The prevalence of current drinking, ex-drinking and no drinking were 20.5%, 9.0% and 70.5%. The study also indicates that betel chewing in this township is about 47.1% (179 adult males) and smoking is about 44.2% (168 adult males) of participants. Alcohol drinking's prevalence rate is surprisingly proportionate to the participants' education status as high prevalence rate in high education status. But other socio-demographic factors such as age, income, occupation, marital status and others does not relate the prevalence rate of alcohol drinking.(Oo, Aung, Soe, Htar Lwin, & Ohnmar Win, 2015)

Another study of betel nut chewing is focused on relation between betel nuts and oral malignant cancer. This study was cross-sectional study and was conducted in 20 16). The study was conducted in East Dagon Township, Myanmar. Both male and female (18 years and above) are included in this study. In this study, there are 542 participants with nearly half population are people who are 45 years and older. In this study, the researchers study about the socio-demographic characteristics, betel nuts chewing practice, characteristics of betel nuts chewing practice, alcohol drinking and smoking. The overall prevalence of betel nut or areca nut chewing in both gender is 52% (95% Confidence Interval) with 72% in men and 39% in women. There are 284 betel nuts chewers in this study and 240 participants are also using tobacco among betel nuts chewers. 24-44 years age group has the highest prevalence of betel nut chewing in this study. Out of 542 participants, there are 4.6% (25 persons) who have oral ulcers or lesions. Crude odd ratios are stating that betel nuts chewer have 6 times higher to have oral malignancy than people who are not consumer. Also, 171 participants have smoking habits and 91 participants have alcohol drinking habits.(Zaw et al., 2016)

There are two studies about both alcohol consumption and betel nut chewing conducted in Taiwan. First study is focused on both alcohol drinking, betel nut chewing and also included smoking cigarettes which can be called ABC consumption. This study was a part of the longitudinal study that focus on health promotion by nursing faculty members (HPCHN) around areas of Yunlin County, Taiwan. It was a cross-sectional design with population based and conducted in western costal Taiwan which is oral cancer epidemic area. The study includes 6203 respondents who are above 20 years old with focusing on ABC habits, socio-demographic characteristics and health behaviour of the respondents. This study indicated that there is high prevalence in all ABC consumptions and it is related with low education level, low socio-economic status and low level of health promoting behaviour. This study also stated that ABC consumption was associated with men.(Guo et al., 2013)

Second study in Taiwan also focused on Alcohol, betel nuts and smoking (ABC) with oesophageal cancer. The type of study is case-control study with 165 cases(SCC patients) and 255 participants for control group. For case group, mean age

is 56.0 years old and control group is 54.8 years old . Alcohol drinking (aOR = 17.6, 95% CI = 9.3-35.2, PAR = 76%) and Cigarettes smoking (aOR = 5.4, 95% CI = 2.4-12.9, PAR = 72%) have great significance in risk factors for oesophageal cancer. Also, people who chew betel nuts or areca nuts have borderline significance than people who are non-chewers. In conclusion, alcohol drinking have more significance for risk factors of oesophageal cancer than betel nut chewing.(Wu et al., 2006)

There is a study in Taiwan that focus on alcohol drinking, betel nuts chewing and tobacco smoking. This study was descriptive cross-sectional study and was conducted in 2018. All of the data were collected by Web design survey which was conducted from 2015 to 2016. All of the samples were collected by trained research assistant (RA) from waiting areas of orthopedics, rehabilitation clinics, gastro-intestinal medical-surgical, otolaryngology wards at a medical center in Taiwan. There were 1400 participants in this study and only 1210 participants agree to answer the questions. In this study, 256 participants (32.7%) who do not have all ABC consumption. 35 participants(4.5%) only smoke tobacco and 287 participants (36.7%) only drink alcohol. 131 participants (16.8%) have both alcohol drinking and smoking habits. 57 participants (7.3%) have all ABC consumption.

There is a study about alcohol consumption, betel nut chewing and cigarette smoking (ABC) of Myanmar workers in Thailand. This study was cross-sectional study and was conducted in 2014. This study focus on alcohol drinking, betel nuts chewing and cigarette smoking. The study indicated that 33.6% of participants have no risk behaviour, 24.7% have one risk behaviour and 41.7% have two or three ABC risk behaviour. The factors influencing the three risk behaviour (ABC) in this study are gender (male), traditional influences, friends who have risk behaviours, family who have risk behaviours.(Htin et al., 2014)

2.6 ASSIST (Alcohol, Smoking and Substance Involvement Screening Test) for Smoking and Drugs use.

ASSIST is a screening test with 8 items of questionnaire to determine the risk score of alcohol and other substance use. ASSIST is designed and translated into

different languages. In the questionnaire, there will be lifetime use of substances, problems caused by substance use within 3 months. After the screening, the results will be scored with high, moderate and low risk. ASSIST questionnaire can be used for proper intervention. Alcohol score for ASSIST are 0-10 (low risk), 11-26 (moderate risk) and more than 27 (high risk). For betel nuts ,smoking and other drugs, there will 0-3 (low risk), 4-26 (moderate risk) and more than 27(high risk).(WHO, 2010)

2.7 Ecological Model

Ecological model is a theory based framework for understanding the multifaceted and interactive effects of personal and environmental factors that determine behaviours, and for identifying behavioral and organizational leverage points and intermediaries for heath promotion within organizations.

This study will use some parts of Ecological model and also from literature reviews. Ecological model identifies environmental factors and influences, which interact and affect individual behavior. In this study, individual behaviour will be alcohol drinking and betel nuts chewing These factors may be the physical setting or place, the human aggregate or characteristics of the people, organizational and social climate, and/or characteristics of the surrounding community.

In ecological model, there are 5 main parts including public policy, community factors, institutional factors, interpersonal processes and primary groups and intrapersonal. Among these, only interpersonal processes and primary groups will be referenced for this study and combined with facts from literatures. (ACHA, 201)

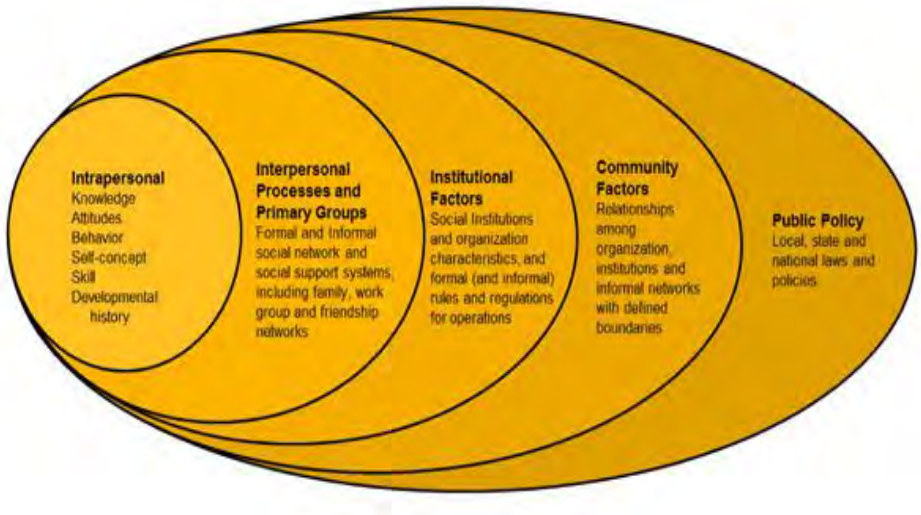


Figure 1.Ecological Model

Chapter 3

Research Methodology

3.1 Research Design

This study was a cross-sectional study.

3.2 Study Area

This study was conducted in Myitnge Train Carriage and Wagons Workshop which was located on Myitnge Town. Myitnge town is located in Amarapura Township which is one of the township of Mandalay region. Myitnge Township can be seen between Amarapura and Myitnge River and really close to the highway road of Yangon-Mandalay. One of the Myanmar railway factories for passengers seats and goods wagons.

Myitnge carriage and wagons workshop was built from 1905 to 1911. The workshop began functioning starting from 1912 . The additional construction was built 1969 and finished in 1970. In 2015 a new coach plant was built and finished in 2018 . Heavy overhauling of all the rolling stock are produced in Myitnge Carriage and Wagon Workshop. Heavy repair of Coaching stock is done every Two years and Freight Wagons every four years. The workshop is administered by General Manager and composed of more than 1400 total staffs.

3.3 Study Population

This study population was based on workers of Myitnge Train Carriage and Wagons Workshop. As there are still no research articles about workers, this study only focused on workers.

3.4 Sample Size

This sample size of this study was determined by using Slovin's method . The reason of using Slovin's method is that the behaviour of study population is unknown.

$$n = N / (1+ Ne^2)$$

n= number of samples

N= total population

e = margin of error

There are 1467 workers in Myitnge Train Carriage and Wagons Workshop. So 'N' was 1467 and assuming that there was confidence level of 95 percent with error margin of 0.05.

n= 1467/ (1+1467*0.05*0.05)

= 314

Sample size for this study which should be selected the least was 314. So, this study selected the total 320 participants from the workshop.

3.5 Sampling Technique

This study selected the participants with purposive sampling method. There are 1467 workers including officers, advisory and staffs in Myitnge Train Carriage and Wagons Workshop.

In Myitnge Train Carriage and Wagons Workshop, there are three main departments

(1) Repair Workshop

(2) Construction Workshop

(3) New Coach Plant

There are 3 main departments in the workshop. There are 20 officers among all three departments. For supervisory, there are 309 total among all three workshops and there are 1138 staffs among all three workshops.

First, all of the workers were asked whether they have both alcohol drinking and betel nuts chewing habits.

All 20 officers were selected because of low numbers. Also all of them have both alcohol drinking and betel nuts chewing habits.

Supervisory and staffs who have both alcohol drinking and betel nuts chewing habits were selected in this study. As there were 3 main departments, supervisory and staffs were also selected proportionately.

Department	Position	Number of workers		Sample
Repair Workshop	**Officers**	**9**		**9**
	Supervisory	**175**	→	**36**
	Staffs	**737**	**Purposive Sampling depending upon total number of workers**	**153**
Construction Workshop	**Officers**	**4**		**4**
	Supervisory	**81**		**17**
	Staffs	**237**		**50**
New Coach Plant	**Officers**	**7**		**7**
	Supervisory	**53**		**11**
	Staffs	**164**		**33**
	Total	**1467**		**320**

There were 300 participants combined for supervisory and staffs (excluding officers). Supervisory have 21% of workers for both supervisory and staffs combined.

And, staffs have 79% of workers for both supervisory and staffs combined. So, there will be 64 participants selected among supervisory and 236 participants will be selected among staffs.

There were 36 supervisory selected for Repair workshop since it has 56% of all supervisory among 3 workshops. Construction workshop have 26% of all supervisory and New coach plant have 18%. So there will be 17 supervisory for Construction workshop and 11 supervisorys for New coach plant.

There were 65% of all staffs in Repair workshop. And there are 21% and 14% for Construction workshop and New coach plant respectively. So, there will be 153 staffs for Repair workshop and 50 staffs for Construction Workshop. Also, there will 33 staffs selected for New coach plant.

(i) Inclusion criteria

Workers of Myitnge Train Carriage and Wagons Workshop who have both alcohol drinking and betel nuts chewing habits and willing to participate in this study will be selected.

(ii) Exclusion criteria

Workers of Myitnge Train Carriage and Wagons Workshop who have serious illness (e.g- cancer) will be excluded. Before recruitment process, all of the workers will be asked if they have diseases or not.

3.6 Validity and reliability

The structure of questionnaire was approved by 3 specialists with related field; alcohol-related expert; in order to gain content validity. The Index of Item-Objective Congruence (IOC) was conducted and the score was 0.9. The questionnaires were revised according to exam committee members' comments and experts' comments.

Reliability test for ASSIST questionnaire was done and the reliability score for whole questionnaire was 0.87.

3.7 Translation

All the questionnaire and relevant documents was translated into Myanmar language by an expert who is current working in public health field. Again, Translated questionnaire were converted into English questionnaire again by another expert who do not know original English questionnaires with the competency of both language, Myanmar and English. If there is any discrepancy between two translations, two translators met together to agree on a final wording and solve the problem of the discrepancy. If they do not agree with each other in discussion and third person with the competency of both Myanmar and English Language and expert skills in family planning will facilitate their discussion firstly to get the final wording. If the agreement is not yet achieved for final wording, the third person decide final wording of questionnaires and choose the right translation with the agreement by at least one translator.

3.8 Measurement tools

This study was conducted with structured questionnaire and ASSIST questionnaire. In structured questionnaire, there will be 3 sections

(1) socio-demographic factors

(2) history and patterns of use in alcohol drinking

(3) history and patterns of use in betel nuts chewing

Patterns of use in alcohol drinking and betel nuts chewing were determined about past 12 months.

In this study, patterns of use in alcohol drinking were identified with (1) frequency,

(2) duration,

(3) amount,

(4) type of alcohol,

(5) first age of drinking alcohol and

(6) place of alcohol drinking

Frequency was determined by asking question “How many days do you drink in a month?”. Duration was determined by asking question “How long have you been drinking?”.

Amount of alcohol drinking was determined by number of drinks workers will have in single occasion. Question will be “How many drinks do you have in single occasion?”.

Type of alcohol was determined by asking questions about the type of alcohol by asking “What type of alcohol do you drink during lifetime and in the past 12 months?”

First age of use was determined by asking the workers about their age that started drinking alcohol with question of “What is your first age of drinking alcohol?”.It will be classified into (a) 15 years old and younger (b) 16-20 years old (c) 20-29 years old (d) 30 years and older.

Place of use was determined by the places that workers used to drink alcohol with the question of where do you usually drink alcohol?”. Place of alcohol drinking will be classified into (a) Home (b) Work (c) Restaurants and bars (d) Others.

Reasons of alcohol drinking was classified into (a) Problems in family/works/relationships (b) Events (Festivals,celebrations etc) and (c) Others.

In this study, patterns of use in betel nuts chewing were identified with

(1) frequency,

(2) duration,

(3) amount,

(4) type of betel nuts,

(5) first age of chewing betel nuts and

(6) place of chewing betel nuts

Frequency was determined by asking question “How many days do you chew betel nuts in a month?” Frequency of betel nuts will be classified into four categories (a) Daily (b) 3-4 days per week (c) 1-2 days per week (d) 1-3 days per month.

Duration was determined by asking question “How long have you been chewing betel nuts?”.Duration will be classified into (a) less than 1 year (b) 2-4 years (c) 5-10 years (d) more than 10 years.

Amount of betel nuts was determined by number of betel nuts workers can chew in single occasion with the question of “How many pack do you chew in single occasion?”. Number of betel nuts will be classified into (a) 1-2 packs (b) 3-4 packs (c) 5 or more packs.

Type of betel nuts was determined by asking questions about the type of alcohol. The question will be “What type of betel nuts do you chew in your lifetime and in the past 12 months?”. Type of betel nuts will be divided into (a) Betel nuts without tobacco (b) “92” tobacco (c) “Parajet” tobacco (d) “45” tobacco (e) “100” tobacco (f) “Signal”(g) “Star” (h) Betel leaves (steamed).

First age of use was determined by asking the workers about their age that started chewing betel nuts with the question of “What is your first age of chewing betel nuts?”. It will be classified into (a) 15 years old and younger (b) 16-20 years old (c) 20-29 years old (d) 30 years and older.

Place of use was determined by the places that workers used to chew betel nuts with the question of “Where do you usually chew betel nuts?”. Place of chewing betel nuts will be classified into (a) Home (b) Work (c) Restaurants and bars (d) Others.

Reasons of chewing betel nuts was classified into (a) Problems in family/works/relationships (b) Events (Festivals,celebrations etc) and (c) Others.

ASSIST questionnaire was used for smoking and drugs use. It will also be used for screening of consequences and diseases that can be caused by alcohol drinking, betel nuts chewing, smoking and drugs use. In ASSIST questionnaire, there will be patterns of use of all substance use within 3 months and problems caused by substance use within 3 months. The results will be determined by levels of risks score (high,moderate,low).

Alcohol drinking scores for ASSIST were

(1) 0-10 (low risk),

(2) 11-26 (moderate risk)

(3) more than 27 (high risk).

For betel nuts chewing ,smoking and other drugs use ,there were

(1) 0-3 (low risk),

(2) 4-26 (moderate risk)

(3) more than 27(high risk) (WHO, 2010)

3.9 Data Collection

This study was conducted with face to face interview using structured questionnaire. One principal researcher and his ten assistants will conduct the interview. All the assistants are currently working at the NGOs and public health filed. So they have proper experience and knowledge in study in alcohol drinking and betel nuts.

Principal researcher trained the ten assistants to carry out proper face to face interview for one week before coming to Myitnge Train Carriage and Wagons

Workshop. The assistants studied about objectives and questions of the study, research methodology and structured questionnaires in detail. After the training ended, the principal asked ten assistants' knowledge level of this study. The assistants were also trained by asking structured questionnaire to each other in order to conduct the perfect study.

The study was conducted within April-May 2019.Principal researcher asked the permission to study the workers of Myitnge Train Carriage and Wagons Workshop from High ranking officers. Face to face interview was conducted in the office room of workshop which is private and quiet. Interviews were conducted in during lunch time and break. Each interview will take 20 minutes.

At the days of interview, the principal researcher and his ten assistants went to the workshop and ask the questionnaire to the workers. If a worker agree to do the interview, interviewer tried to explain the study's purpose and take the consent from the participant. An interviewer asked the questionnaire to the participants and wrote down about the discussion with the participants. If a participant does not want to be interviewed, that participant was described as 'missed or refuse to answer' in the study.

After all the participants were interviewed, the principal researcher and his ten assistants compilef all of the results of questionnaire and discussion notes. All the questionnaire need to be answered by participants and it was examined by principal researcher and his three assistants at the end of each day of interviews. The interview will be done for about 9 -10 days and all of data collection were done in 2 weeks.

3.10 Data analysis

All the data from this study were calculated in SPSS software 22.

This study used both descriptive statistics and inferential statistics for analysis. For descriptive statistics, frequency, percentage, mean and standard deviation will be used for both categorical and continuous variables.

In order to determine the relationship between independent variables and dependent variables, bivariate analysis were used. Chi-square test was used for categorical data.

3.11 Ethical consideration

This study was examined by Chulalongkorn Ethical Review Committee. All the papers including Myanmar translation of questionnaire of the study was submitted to the Ethical Review Committee of Chulalongkorn University. All the participants of the study will be informed. The interviewers will explain the objectives of the study. Each participants were given informed consent with both orally and written papers. All answers sheets and data reports were in locked cabinet. The collected data will be put into the database and then all the answer sheets were destroyed by burning.

Chapter 4

Results

This study aimed to describe independent variables such as socio-demographic characteristics, environmental factors and associated factors (smoking and drugs use). Also, this study will describe the patterns of alcohol drinking and patterns of betel nuts chewing. Patterns of use in both alcohol drinking and betel nuts chewing include frequency, duration, amount, type, first age of use, place of use and reason of use. A cross-sectional descriptive study was conducted in Myitnge Train Carriage and Wagons Workshop which is located in Myitnge Township, Mandalay, Myanmar. A total of 320 workers from Myitnge Train Carriage and Wagons Workshop were interviewed in this study. The study was conducted in May 2019.

The results of this study are mentioned as findings of exploratory analysis on independent variables and dependent variables among participants which are presented as frequencies, percentage, means, standard deviation (SD), medium and range accordingly.

4.1 Socio-demographic Characteristics of the Workers

Table 1 include descriptive statistics of socio-demographic characteristics of the participants such as age, marital status, education, religion and ethnic groups.

The age groups were divided into 5 groups such as younger than 20, 20-29 years old, 30-39 years old, 40-49 years old and older than 50. The average age of the participants in this study was 37 years old. The youngest age was 16 years old and the oldest was 60 years old. There were 7 participants who are younger than 20 and 66 participants (20.6%) who were in age group of 20-29 years old. 30-39 years old age group have the highest percentage (34.4%) of total participants. Also, there are 51 participants who were 50 years and above. There were 4 different marital status in this study with single, married, divorced and widowed. Most of the participants in this study were married (72.1%) and 78 participants were single. There were 6 participants who were divorced and 5 participants who were widowed.

Table 1.Socio-demographic characteristics of the participants

Socio-demographic characteristics	Frequency	Percentage
Age (years old)		
18-19	7	2.2
20-29	66	20.6
30-39	110	34.4
40-49	86	26.9
50-60	51	15.9
Total	320	100.0
Mean±SD	37.97±10.42	
Median	36.00	
Min-Max	18	
Max	60	
Marital Status		
Single	78	24.4
Married	231	72.1
Divorced	6	1.9
Widowed	5	1.6
Total	320	100.0
Education		
Primary school	48	15
Middle school	95	29.7
High school	92	28.7
College and higher degree	85	26.6
Total	320	100.0
Income		
80 USD	236	73.8
100 USD	64	20.0
120 USD	20	6.2
Total	320	100.0
Religion		
Buddhist	264	82.4
Christian	21	6.6
Hindu	14	4.4
Muslim	21	6.6
Total	320	100.0
Ethnic groups		
Myanmar	226	70.6
Kayin	10	3.1
Shan	10	3.1
Others	74	23.2
Total	320	100.0

4.2. Alcohol Drinking

4.2.1 History of alcohol drinking among participants

Table 2 showed the history of alcohol drinking among all participants in this study.

The average age of started drinking alcohol was 24 years old ranging from 16 years old to 50 years old. There was only 1 participant who started drinking alcohol younger than 15 years old. 26.9% of total participants started drinking at age between 15-19 years old and another 26.6% of participants started to have drinking habits at the age group of 20-24 years old. There were 94 participants who started drinking alcohol at 30 years and older age.

44.1% of the participants started drinking alcohol for experiment. 26 participants (8.1%) said that they started drinking alcohol because of problems in work, relationships and family. There were 60 participants in this study started to drink alcohol because of encouragement from boss or co-workers.

In table 3, history of alcohol drinking for staffs, supervisory and officers are demonstrated respectively. There was only 1 staff who started drinking younger than 15 years old but no advisory and officers who started drinking at age of younger than 15 years old.

Among staffs, 28.4% started to drink alcohol at the age group of 15-19 years old. There are 62 participants who started drinking alcohol at 30 years old and older. The average started drinking age of staffs was 24 years old ranging from 16 years to 50 years old. Among advisory and officers, age group of 30 years and older for started drinking alcohol have highest percentage with 35.9% and 45%.

Table 2.History of alcohol drinking among all participants

History of alcohol drinking	Frequency	Percentage
Age of started drinking alcohol (years old)		
14	1	0.3
15-19	86	26.9
20-24	85	26.6
25-29	54	16.8
30-50	94	29.4
Total	320	100.0
Mean±SD	24.96±7.56	
Median	23	
Min	14	
Max	50	
Reason for started drinking alcohol		
Problems in work, relationships and family	26	8.1
Experiment	141	44.1
Encouraged by boss or co-workers	60	18.8
Encouraged by family members	10	3.1
Events (e.g-festivals, celebrations)	44	13.8
Others	39	12.1
Total	320	100.0

In table 3, history of alcohol drinking for staffs, supervisory and officers are demonstrated respectively. There was only 1 staff who started drinking younger than 15 years old but no advisory and officers who started drinking at age of younger than 15 years old.

Among staffs, 28.4% started to drink alcohol at the age group of 15-19 years old. There are 62 participants who started drinking alcohol at 30 years old and older. The average started drinking age of staffs was 24 years old ranging from 16 years to 50 years old. Among advisory and officers, age group of 30 years and older for started drinking alcohol have highest percentage with 35.9% and 45%.

Experimental drinking is the most common among staffs, supervisory and officers and it have highest percentage among all reasons with 41.5%, 54.7% and 40.0%. Encouragement from boss or co-workers is the second most common reasons for started drinking alcohol among all staffs, advisory and officers.

Table 3.History of alcohol drinking among staffs, supervisory and officers

History of alcohol drinking	Staffs (N=236)		Supervisory (N=64)		Officers (N=20)	
	Number	Percentage	Number	Percentage	Number	Percentage
Age of started drinking alcohol (years old)						
14	1	0.4	0	0.0	0	0.0
15-19	68	28.4	15	23.4	3	15.0
20-24	63	26.7	17	26.6	5	25.0
25-29	42	17.8	9	14.1	3	15.0
30-50	62	26.7	23	35.9	9	45.0
Total	236	100.0	64	100.0	20	100.0
Reason for started drinking alcohol						
Probems in work, relationships and family	19	8.1	5	7.8	2	10.0
Experiemnt	98	41.5	35	54.7	8	40.0
Encouraged by boss-co-workers	46	19.5	8	12.5	6	30.0
Encouraged by family members	8	3.4	1	1.6	1	5.0
Events	34	14.4	8	12.5	2	10.0
Others	31	13.1	7	10.8	1	5.0
Total	236	100.0	64	100.0	20	100.0

4.2.2 Pattern of alcohol drinking (Lifetime) among participants

Table 4 show the patterns of alcohol drinking (Lifetime) among participants in this study. Almost all of the participants (98.2%) in this study have ever drunk Beer in their lifetime. 64.1% of the participants have ever drunk Whisky with Rum (38.1%), Gin (42.8%), White spirit (34.5%) and Home-made brew (41.9%).

148 participants (46.3%) had habits of alcohol drinking for 2-4 days per month and it has highest percentage in this study. There were 92 participants (28.7%) drank alcohol monthly and 62 participants (19.4%) drank 1-3 days per week. Only 18 participants (5.6%) in this study drank alcohol for 4 days per week and more.

Average amount of alcohol drinking in single occasion (Lifetime) in this study were 3 drinks per single occasion. The least amount of drink was 1 drink and highest amount of drink was 8 drinks per single occasion. 80 participants (35%) in this study drank 5 or more than 5 drinks for single occasion during their lifetime.

The patterns of alcohol drinking for staffs, supervisory and officers within lifetime are displayed in table 5. There were 230 staffs (97.5%) had drunk beer and 153 staffs (64.5%) who had whisky before. The type of alcohol that the staffs drunk

the least is white spirit with 36.7%. Rum and Gin almost have same number of staffs with 42.8% and 43.2% respectively. There were 14 staffs who drink alcohol 4 days per week and more in their lifetime. 113 staffs (47.9%) usually drink alcohol average 2-4 days per month. 28.8% of staffs drink alcohol once a month. 174 staffs (73.8%) usually drink less than 5 standard drinks and 62 staffs (26.2%) have 5 or more than 5 drinks.

Table 4.Patterns of alcohol drinking (Lifetime) among all participants

Pattern of alcohol drinking (Lifetime)	Frequency	Percentage
Type of alcohol		
Beer	314	98.1
Whiskey	205	64.1
Rum	122	38.1
Gin	137	42.8
White spirit	111	34.7
Home-made brew	134	41.9
Wine	127	39.7
Alcohol drinking frequency per month		
Monthly	92	28.7
2-4 days per month	148	46.3
1-3 days per week	62	19.4
4-7 days per week	18	5.6
Total	320	100.0
Amount of alcohol drinking in singe occasion		
Less than 5 standard drinks	240	75.0
5-8 standard drinks	80	25.0
Total	320	100.0
Median	3	
Min	1	
Max	8	

All supervisory had drunk beer in their lifetime and 41 advisory stated that they had drunk whisky before. The smallest percentage in this category is rum with 25%. Among supervisory, gin and home-made brew have almost same number with 31 and 32 supervisory. 26 supervisory (40.6%) usually drink alcohol average 2-4 days per month which is the highest percentage. The second highest percentage for alcohol drinking frequency per month among supervisory is average 1-3 days per week and it is followed by monthly (25.0%) and 4 days per week and more (6.3%).

In officers rank, all of them had drunk beer before. More than half of the officers (55.0%) had whisky in their lifetime. It is followed by Wine (55.0%),Rum (25.0%), Gin (25.0%), Home-made brew (25.0%) and White spirit (20.0%). Nine officers drink alcohol monthly and 8 officers said that they usually drink alcohol average 2-4 days per month. 15% of officers drink 1-3 days per week in their lifetime and there is no officer that drink for 4 days per week and more. In the category of amount of alcohol drinking per single occasion among officers, 16 officers (80%) have alcohol drinking habits for less than 5 standard drinks. Only 4 officers (20%) drink 5 or more than 5 drinks.\

Table 5.Patterns of alcohol drinking (Lifetime) among staffs, advisory and officers.

Patterns of alcohol drinking (Lifetime)	Staffs		Supervisory		Officers	
	Number	Percentage	Number	Percentage	Number	Percentage
Type of alcohol (N=320)						
Beer	230	97.5	64	100.0	20	100.0
Whiskey	153	64.8	41	64.1	11	55.0
Rum	101	42.8	16	25.0	5	25.0
Gin	102	43.2	31	48.4	5	25.0
White spirit	86	36.7	20	31.3	4	20.0
Home-made brew	97	41.1	32	50.0	5	25.0
Wine	93	39.4	24	37.5	11	55.0
Total	236	100.0	64	100.0	20	100.0
Alcohol drinking frequency per month						
Monthly	68	28.8	16	25.0	9	45.0
2-4 days per month	113	47.9	26	40.6	8	40.0
1-3 days per week	41	17.4	18	28.1	3	15.0
4-7 days per week	14	5.9	4	6.3	0	0
Total	236	100.0	64	100.0	20	100.0
Amount of alcohol drinking in singe occasion						
Less than 5 standard drinks	176	73.8	48	75.0	16	80.0
5-8 standard drinks	60	26.2	16	25.0	4	20.0
Total	236	100.0	64	100.0	20	100.0

4.2.3 Patterns of alcohol drinking among participants in the past 12 months

Table 6 indicated the patterns of alcohol drinking among participants in the past 12 months. In the past 12 months, 226 participants (70.6%) in this study had drunk Beer and 166 participants had drunk Whisky. Wine (30.0%) is the third highest percentage in type of alcohol consumed by participants in the past 12 months. It is followed by Home-made brew (26.3%), Gin (25.3%), White spirit (21.1%) and Rum (21.9%).

In the past 12 months, average alcohol drinking frequency per month was 5 days per month. One day per month is the least and 30 days per month is the highest. 23 participants (7.2%) in this study drank alcohol for 4 days per week and more. 130 participants drank alcohol for 1-3 days per week and 129 participants drank alcohol for 2-4 days per month. The average drinks per singe occasion in the past 12 months was 3 drinks per single occasion ranging from 1 drink to 7 drinks. 80 participants (25%) in this study drank 5 or more than drinks of alcohol per single occasion.

Most participants (79.7%) drank alcohol at night in the past 12 months. There were 57 participants who drank alcohol in the evening and only 8 participants drank all day. The main reason for drinking alcohol in the past 12 months among participants was that the participants just want to drink with no other reason (35.3%). It is followed by the reason of encouragement by co-workers or friends (33.4%), Events (22.2%) and Problems in relationships, works, family (9.1%).

There were more than half of the participants (68.1%) in this study who drank alcohol in the restaurants and bars within past 12 months. 54 participants (16.9%) drank alcohol at home and 8 participants drank in other places. 40 participants in this study drank alcohol all of the places mentioned above in the past 12 months.

Table 6.Patterns alcohol drinking among all participants in the past 12 months

Pattern of alcohol drinking (past 12 months)	Frequency	Percentage
Type of alcohol		
Beer	226	70.6
Whiskey	166	51.9
Rum	70	21.9
Gin	81	25.3
White spirit	71	21.1
Home-made brew	84	26.3
Wine	96	30.0
Total	320	100.0
Alcohol drinking frequency per month		
Monthly	38	11.9
2-4 days per month	129	40.3
1-3 days per week	130	40.6
4-7 days per week	23	7.2
Total	320	100.0
Mean±SD	5.67±4.93	
Median	4	
Min	1	
Max	30	
Amount of alcohol drinking in singe occasion		
Less than 5 standard drinks	240	75.0
5-8 standard drinks	80	25.0
Total	320	100.0
Median	3	
Min	1	
Max	8	
Time of drink		
Evening	57	17.8
Night	255	79.7
Above all	8	2.5
Total	320	100.0
Reason for drinking		
Problems in work, relationships and family	29	9.1
	71	22.2
Events (e.g- festivals, celebrations)	107	33.4
Encouraged by co-workers or friends	113	35.3
Just want to drink (No other reason)	320	100.0
Total		
Place of drinking		
Home	54	16.9
Restaurants and bars	218	68.1
Others	8	2.5
Above all	40	12.5
Total	320	100.0

There were more than half of the participants (68.1%) in this study who drank alcohol in the restaurants and bars within past 12 months. 54 participants (16.9%) drank alcohol at home and 8 participants drank in other places. 40 participants in this study drank alcohol all of the places mentioned above in the past 12 months.

In table 7, the patterns of alcohol drinking among staffs, advisory and officers in the past 12 months are displayed. 74.2% of staffs had drunk beer and it is the highest in the category of alcohol type. It is followed by whisky with 54.7%. Both Wine and Home-made brew have been drunk within past 12 months by 63 staffs. Also, Rum and White spirit have same number of staffs (23.7%) and Gin (23.3%) is the alcohol type that the staffs drunk the least. 29 staffs usually drink alcohol only once a month in the past 12 months. 18 staffs (7.6%) have alcohol drinking habits of average 4 days per week and more. 94 staffs drink alcohol average 2-4 days per month and 95 staffs drink average 1-3 days per week. 177 staffs (75%) usually drink less than 5 drinks per single occasion and 59 staffs (25%) have binge drinking habits which is 5 or more than 5 drinks in the past 12 months. Most staffs (79.9%) usually drink alcohol at night and 40 staffs stated that they used to drink in the evening. 8 staffs (3.4%) said that they drink alcohol the whole day. 81 staffs just want to drink alcohol with no other reasons. 10.6% of staffs used to drink alcohol because of problems in work, relationship and family. 32.2 % of staffs drink alcohol with reason of encouragement from co-workers or friends. Restaurants and bars (67.4%) is the place that the staffs used to drink the most within past 12 months. Drinking at home is in second place with 16.9%. 30 staffs drunk alcohol at home, restaurants, bars and many other places.

Table 7.Patterns of alcohol drinking among staffs, advisory and officers in the past 12 months.

Patterns of alcohol drinking (12 months)	Staffs		Supervisory		Officers	
	Number	Percentage	Number	Percentage	Number	Percentage
Type of alcohol						
Beer	175	74.2	38	59.4	13	65.0
Whiskey	129	54.7	29	45.3	9	45.0
Rum	56	23.7	9	14.1	5	25.0
Gin	55	23.3	22	34.4	5	25.0
White spirit	56	23.7	12	18.8	3	15.0
Home-made brew	63	26.7	19	29.7	2	10.0
Wine	63	26.7	23	35.9	11	55.0
Alcohol drinking frequency per month						
Monthly	27	12.2	9	14.1	2	10.0
2-4 days per month	96	39.8	23	35.9	10	50.0
1-3 days per week	95	40.4	27	42.2	8	40.0
4-7 days per week	18	7.6	5	7.8	0	0
Total	236	100.0	64	100.0	20	100
Amount of alcohol drinking in singe occasion						
Less than 5 standard drinks	178	75.0	46	75.0	16	80.0
5-8 standard drinks	58	25.0	18	25.0	4	20.0
Total	236	100.0	64	100.0	20	100.0
Time of drink						
Evening	40	16.9	12	18.8	5	25.0
Night	188	79.7	52	81.2	15	75.0
Above all	8	3.4	0	0	0	0.0
Total	236	100.0	64	100.0	20	100.0
Reason for drinking						
Problems in work, relationships and family	25	10.6	4	6.3	0	0.0
Events (e.g- festivals, celebrations)	54	22.9	13	20.2	4	20.0
Encouraged by co-workers or friends	76	32.2	25	39.1	6	30.0
Just want to drink (No other reason)	81	34.3	22	34.4	10	50.0
Total	236	100.0	64	100.0	20	100.0
Place of drinking						
Home	40	16.9	9	14.1	5	25.0
Restaurants and bars	159	67.4	47	73.4	12	60.0
Others	7	3.0	1	1.6	0	0.0
Above all	30	12.7	7	10.9	3	15.0
Total	236	100.0	64	100.0	20	100.0

There were 59.4% of supervisory who have drunk Beer and 45.3% have drunk whisky in the past 12 months. Wine is in third place for alcohol type that the advisory have drunk in the past 12 months with 35.9%. 9 advisory usually drink alcohol once a month. 22 advisory used to drink Gin and home-made brew have been drunk by 19 adivsory. Average1-3 days per week (42.2%) is the frequency that the supervisory

used to drink the most in the past 12 months. It is followed by average 2-4 days per month woth 35.9%. 5 advisory have alcohol drinking habits for average 4 days per week and more. 18 supervisory (25%) have binge drinking habits and the rest (75%) only drink less than 5 drinks. Supervisory mostly drink alcohol night and some (18.8%) used to drink alcohol in the evening. Encouragement from co-workers (39.1%) is the main reason to drink alcohol for advisory in the past 12 months. 22 supervisory said that they just want to drink alcohol with no other reasons within past 12 months. Restaurants and bars is that place that the most supervisory drunk in the past 12 months. 9 advisory used to drink alcohol at home.

Thirteen officers (65%) have drunk Beer and 11 officers have drunk Wine (55.0%) in the past 12 months. These are followed by Rum (25.0%), Gin (25.0%), White spirit (15.0%) and Home-made brew (10.0%). Half of the of officers (50.0%) have habits of drinking average 2-4 days per month in the past 12 months. There were eight officers (40.0%) who used to drink alcohol 1-3 days per week and 2 officers have monthly drinking. Four officers (20.0%) have drunk 5 or more than 5 drinks per single occasion in the past 12 months and the rest used to drink less than 5 drinks per single occasion. Majority of the officers (75.0%) have habits of drinking alcohol at night and 25% have drunk alcohol at home within past 12 months. 10 officers (50.0%) said that they have drunk alcohol in the past 12 months because they just want to drink without any reason. It is main reason of alcohol drinking among officers. There were 6 officers (30.0%) who usually drink alcohol because of encouragement from co-workers or friends. Among officers rank, restaurants and bars is the main place that they used to drink within past 12 months with 60%. Home (25.0%) is in second highest percentage for place of drinking in the past 12 months.

4.2.4 Environmental factors of alcohol drinking

Table 8 showed the environmental factors of alcohol drinking among participants. In the category of drinking habits in parents, 148 participants (46.3%)

said that their parents drink alcohol occasionally and it is followed by Never drink (37.8%) and Always drink (15.9%).

Table 8.Environmental factors for alcohol drinking among all participants

Environmental factors	Number	Percentage
Drinking habits in parents		
Never	121	37.8
Drink occasionally	148	46.3
Always drink	51	15.9
Total	320	100.0
Drinking habits in siblings		
Never	66	20.6
Drink occasionally	203	63.5
Always drink	51	15.9
Total	320	100.0
Drinking habits in relatives		
Never	4	1.3
Drink occasionally	221	69.0
Always drink	95	29.7
Total	320	100.0
Drinking habits in boss		
Never	108	33.8
Drink occasionally	181	56.6
Always drink	31	9.6
Total	320	100.0
Drinking habits in co-workers		
Never	0	0.0
Drink occasionally	197	61.6
Always drink	123	38.4
Total	320	100.0
Drinking habits in friends		
Never	0	0.0
Drink occasionally	191	59.7
Always drink	129	40.3
Total	320	100.0

In the category of drinking habits in siblings, 203 participants reported that siblings have habits of drinking alcohol occasionally. For drinking habits in relatives, most of the participants (69%) said that the relatives have occasional drinking habits of alcohol.

108 participants (33.8%) in this study said that their boss have never drink alcohol. Only 31 participants (9.6%)said that boss drink alcohol all the time. For drinking habits in co-workers, 61.6% of the participants reported that co-workers drink alcohol occasionally and the rest said that co-workers always drink alcohol. In the category of drinking habits in friends, 191 participants (59.7%) said that their friends have occasional drinking habits.

Table 9.Environmental factors for alcohol drinking among staffs, advisory and officers.

Environmental factors	Staffs		Supervisory		Officers	
	Number	Percentage	Number	Percentage	Number	Percentage
Drinking habits in parents						
Never	89	37.7	27	42.2	5	25.0
Drink occasionally	109	46.2	32	50.0	7	35.0
Always drink	38	16.1	5	7.8	8	40.0
Total	236	100.0	64	100.0	20	100.0
Drinking habits in siblings						
Never	42	17.8	16	25.0	8	40.0
Drink occasionally	150	63.6	41	64.1	12	60.0
Always drink	44	18.6	7	10.9	0	0.0
Total	236	100.0	64	100.0	20	100.0
Drinking habits in relatives						
Never	4	1.7	0	0.0	0	0
Drink occasionally	163	69.1	42	65.6	16	80.0
Always drink	69	29.2	22	34.4	4	20.0
Total	236	100.0	64	100.0	20	100.0
Drinking habits in boss						
Never	74	31.4	25	39.0	8	40.0
Drink occasionally	139	58.9	33	51.6	10	50.0
Always drink	23	9.7	6	9.4	2	10.0
Total	236	100.0	64	100.0	20	100.0
Drinking habits in co-workers						
Never	0	0.0	38	59.4	0	0
Drink occasionally	143	60.6	24	37.5	15	75.0
Always drink	93	39.4	2	3.1	5	25.0
Total	236	100.0	64	100.0	20	100.0
Drinking habits in friends						
Never	0	0	0	0	0	0
Drink occasionally	138	58.5	40	62.5	14	70.0
Always drink	98	41.5	24	37.5	6	30.0
Total	236	100.0	64	100.0	20	100.0

89 staffs reported that their parents never drink alcohol. 109 staffs (46.2%) have parents who have occasional drinking habits of alcohol. 63.6% of staffs said that their siblings drink alcohol occasionally and 44 staffs have siblings who drink alcohol all the time. In the category for drinking habits in relatives, majority of the staffs (69%) stated that their relatives used to drink alcohol occasionally and 4 staffs (1.7%) said that their relatives have never drunk before. 31.4% of staffs' bosses do not have alcohol drinking habits. Habits of drinking occasionally have highest percentage among both co-workers and friends of the staffs with 60.6% and 58.5 respectively.

Among family members and relatives of supervisory, occasional drinking have high numbers and percentage with parents (50%), siblings (64.1%) and relatives (65.6%). No habits of drinking is in second place for category for parents and siblings with 42.2% and 25% respectively. For relatives, habits of drinking all the time have second highest percentage with 34.4%. At work, co-workers who have ever drink alcohol before is the highest with 59.4% among supervisory and bosses who drink alcohol occasionally is the highest with 51.6%. Also, 40 supervisory (62.5%) have friends who have occasionally drinking habits which is the highest percentage.

Twenty five officers have parents who do not drink alcohol and 7 officers have those who drink alcohol occasionally. 8 officers said that their parents always drink alcohol. 12 officers (60%) have siblings who have occasional drinking habits and the parents of the rest (40%) have never drunk alcohol before. In the category of relatives, drinking occasionally is also the highest with 80% and always drink in second place with 20%. For bosses, the highest percentage is habits of drinking occasionally with 50% and followed by never (40%) and always drink (10%). For co-workers, drink occasionally is the highest with 75% and always drink is 25%. Drink occasionally is also highest in drinking habits among friends of the officers with 70%.

4.2.5 Relationship between characteristics and amount of alcohol per single occasion among participants.

Table 10 showed that there were statistical significant differences between characteristics and amount of alcohol drinking per single occasion. The amount of

alcohol drinking per single occasion in young age is not significantly huge. At young age, there are 18.2% who drink 5 or more than 5 drinks. In old age, there are 32.2% who drink 5 or more than 5 drinks. So, the older the age, the higher is the amount of alcohol per single occasion. In terms of marital status, there is no significant difference between magnitude of alcohol drinking among groups. (p-value= 4.74). People who are already married had large proportion of alcohol than who are not married. So, if the participants are married, they are likely to consume 5 or more drinks than those who have not married.

Table 10.Association between characteristics of the participants and amount of alcohol drinking in the past 12 months

Characteristics	Amount of alcohol drinking per single occasion				X^2	OR
	Less than 5 drinks		5 or more drinks			
	Number	%	Number	%		
Age					6.94	2.14
Younger than 36 years old	130	81.8	29	18.2		
36 years and older	109	67.7	52	32.3		
Marital status					4.74	0.76
Single/Divorced/Widowed	63	26.4	26	32.1		
Married	176	73.4	55	67.9		
Education)					2.01	1.82
Primary/middle/high school	183	77.8	26	22.2		
College and higher	56	65.8	55	34.2		
Income					3.87	1.73
100 USD and less	183	77.5	53	22.5		
More than 100 USD	56	66.6	28	33.4		
Ethnic groups					0.05*	0.94
Myanmar	168	74.3	58	25.6		
Others	71	75.5	23	24.4		
Place of drinks					0.20	0.85
Home	39	16.3	15	18.5		
Other places	200	83.7	66	81.5		

* p-value ≤ 0.05

The result shows no significant difference between education level and alcohol drinking (p-value= 2.01). 22.13% of people who have education level of lower than college had consumed 5 or more drinks per single occasion. Participants who have education level of college or higher degree tend to drink more than those who have lower education level. Income of participants and amount of alcohol were compared

in the study and the result show significant difference (p-value= 3.87). People who have higher income have higher chance for drinking 5 or more than drinks than those who have lower income. There is also significant difference between amount of alcohol and ethnic groups. (p-value= 0.05). The result show that Myanmar people are more like to consume 5 or more drinks than other ethnic groups.

Table 11.Association between characteristics and frequency of alcohol drinking

Characteristics	Frequency of alcohol drinking				X^2	OR
	Less than 5 days		5 or more days			
	Number	%	Number	%		
Age					0.04*	0.95
Younger than 36 years old	82	49.1	77	50.3		
36 years and older	85	50.9	76	49.7		
Marital status					1.84	0.86
Single/Divorced/Widowed	44	26.3	45	29.4		
Married	123	73.7	108	70.6		
Education					0.35	1.41
Primary/middle/high school	128	76.6	107	69.9		
College and higher	39	23.4	46	30.1		
Income					1.51	1.37
100 USD and less	128	76.6	108	70.6		
More than 100 USD	39	23.4	45	29.4		
Ethnic groups					6.03	8.94
Myanmar	150	89.8	76	49.7		
Others	17	10.2	77	50.3		
Place of drinks					1.56	0.69
Home	24	14.4	30	19.6		
Other places	143	85.6	123	80.4		

* p-value $\leq$ 0.05

4.2.6 Association between characteristics of the participants and frequency of drinking in the past 12 months

In this category, the relationship between characteristics of the workers and drinking frequency per month in the 12 months were written. Only age has significant difference. (p-value= 0.04)

According to the table 11, younger ages tends to drink more days than older ages. Also, people who do not have partners have higher chance to drinking alcohol more days than those who have partners. In education status, participants who have college degree and higher were drinking more days than those who have lower education levels. People with higher income people were also drinking more than who have lower income. In terms of place of drinks, people who drinks at home tends to have more drinking days per month than people who drinks at other places

4.2.7 Association between characteristics of the participants and risks of developing diseases

In table 12, the relationship between characteristics of the participants and risks of developing diseases were described. Low risk means less than 4 drinks per day and less than 14 drinks per week. High risk mean more than 4 drinks per day and more than 14 drinks per week.

There is no significance among all the characteristics and risks of developing diseases. Older people have more high risks than younger people and married people tends to have high risks than people who are single, divorced and widowed. In education level, the higher education, the lower the risk among participants and it is also the same in income status. People who drink at home are likely to have high risk than those who drink at other places.

Table 12.Association between characteristics of the participants and risks of developing diseases

Characteristics	Risks of developing diseases				X^2	OR
	Low risk		High risk			
	Number	%	Number	%		
Age					0.21	1.25
Younger than 36 years old	151	50.0	8	44.4		
36 years and older	151	50.0	10	55.6		
Marital status					2.33	3.23
Single/Divorced/Widowed	87	28.8	2	11.1		
Married	215	71.2	16	89.9		
Education					3.66	0.33
Primary/middle/high school	219	72.5	16	88.9		
College and higher	83	27.5	2	11.1		
Income					0.90	0.55
100 USD and less	221	73.2	15	83.3		
More than 100 USD	81	26.8	3	16.7		
Ethnic groups					0.83	1.57
Myanmar	215	71.2	11	61.6		
Others	87	28.8	7	38.9		
Place of drinks					0.38	0.69
Home	50	16.6	4	22.2		
Other places	252	83.4	14	77.8		

Note: Low risk= less than 4 drinks per day and less than 14 drinks per week

High risk= More than 4 drinks per day and less than 14 drinks per week

4.2.8 Association between frequency, amount of alcohol consumption and ranks of workers

In order to discover the position of the participants and amount of alcohol per single occasion, chi-square test was used. In this table, supervisory and officers were combined into one category because of their same attitudes. So, there were two categories with (1) staffs (2) supervisory and officers.

Almost half of the staffs (46.6%) were drinking 5 or more than 5 days per months and 44 supervisory and officers (51.2%) are binge drinking. According to table 13, positions of the participants were statistically no significant with amount of alcohol consumption per single occasion (p-value= 0.470). In staffs, there are 53 people (22.5%) who had 5 or more than drinks per single occasion while 33.3% of total advisory and officers consumed.

Table 13.Association between frequency, amount of alcohol consumption and ranks of workers

Patterns	Ranks				X^2	OR
	Staffs (n=236)		Supervisory and officers (n=84)			
	Number	%	Number	%		
Alcohol drinking frequency per month						
Less than 5 days	126	53.4	41	48.8	0.47	1.20
5 or more than 5 days	110	46.6	43	51.2		
Amount of alcohol drinking per single occasion						
Less than 5 drinks	183	77.5	57	66.7	0.10	1.57
5 or more than 5 drinks	53	22.5	27	33.3		

4.2.9 ASSIST scores for alcohol drinking among participants

The screening test was for identifying the individuals with experience of drinking alcohol across their lifetime and in the past 3 months. It is very useful to find out the level of risk that relating to alcohol and its consequences. After the study, brief intervention could be done and adjusted to their levels like medical advice, education message and management.

Concerning the table 14, almost all the participants have chewed betel nuts in the past 3 months. 281 participants had drunk alcohol in the past 3 months and there are 53 participants saying they had strong desire for drinking in the past 3 months. Most of the participants (88.4%) have fallen in “medium risk category” and “0.9% in high risk” category.

Table 14.ASSIST scores for alcohol drinking among participants

ASSIST Scores	Number	Percentage
Low risk	34	10.6
Medium risk	283	88.5
High risk	3	0.9
Total	320	100.0

Table 15.Associations between characteristics and ASSIST scores for alcohol drinking among participants

Characteristics	ASSIST scores of alcohol drinking						X^2
	Low risk (n=34)		Medium risk (n=283)		High risk (n=3)		
	Number	%	Number	%	Number	%	
Age (N= 320)							0.44
Younger than 36 years old	16	47.1	141	49.8	2	66.7	
36 years and older	18	52.9	142	50.2%	1	33.3	
Marital status (N= 320)							0.23
Single/Divorced/Widowed	9	26.5	68	24.0	1	33.3	
Married	25	73.5	215	76.0	2	66.7	
Education (N= 320)							0.07
Primary/middle/high school	25	73.5	208	73.5	1	33.3	
College and higher	9	26.5	75	26.5	2	66.7	
Income (N= 320)							2.56
100 USD and less	25	73.5	210	74.2	1	33.3	
More than 100 USD	9	26.5	73	25.8	2	66.7	
Ethnic groups (N= 320)							1.44
Myanmar	25	73.5	198	70.0	3	100.0	
Others	9	26.5	85	30.0	0	0.0	
Place of drinks (N= 320)							0.76
Home	5	26.5	49	17.3	0	100.0	
Other places	29	73.5	234	82.7	3	0.0	

4.2.10 Associations between characteristics and ASSIST scores for alcohol drinking among participants

Table 15 showed the relationships between characteristics and ASSIST scores for alcohol drinking among participants with chi-square test. In this table, there was significant difference between characteristics and ASSIST scores. In age groups, 36

years old and older age groups have higher percentage for medium risks than those who were younger. The table also indicated the differences of other characteristics such as marital status, education, income, ethnic groups and place of drink.

4.3 Betel Nuts Chewing

4.3.1 History of betel nuts chewing among participants

Table 16 showed the history of betel nuts chewing among all participants. The average age for started chewing was 25 years old. The youngest age was 14 years old and the oldest age was 50 years old. There are 2 participants who started chewing at the age of younger than 15 years old. 29.1% of total participants were starting to chew betel nuts at the age group of 20-24 years old which have the highest percentage.

There were 34 participants started having betel nuts chewing habits because of the problems in work, family, relationship. Experiment (42.2%) is the main reason for started chewing betel nuts among all the participants. Events such as festivals, celebrations make 10.6% of the participants to start chewing.

As mentioned in table 17, there are 2 staffs who started chewing younger than 15 years old and there is no advisory and officers at this age group. 20-24 years old age group (30.1%) is the most common among staffs. Among supervisory and officers, 30 years and older age group have the highest percentage for age of started chewing betel nuts with 34.4% and 65%. 20-24 years old is second common age group among advisory (29.7%) and officers (15%) to start chewing betel nuts.
Experimental chewing of betel nuts is the most common among all staffs, supervisory and officers. Among staffs, 16.5 % said that they started chewing because of encouragement from boss or co-workers and 9.7% from encouragement from family members. 15.6% of advisory said that they started consuming betel nuts because their boss or co-workers encouraged them. 20% of officers started chewing because of encouragement from family members

Table 16.History of betel nuts chewing among all participants

History of betel nuts chewing	Frequency	Percentage
Age of started chewing betel nuts (years old)		
14	2	0.6
15-19y	80	25.0
20-24	93	29.1
25-29	49	15.3
30-50	96	30.0
Total	320	100.0
Reason for started chewing betel nuts		
Problems in work, family and relationships	34	10.6
Experiment	135	42.2
Encouraged by boss or co-workers	49	15.3
Encouraged by family members	33	10.3
Events (e.g- festivals, celebrations etc)	34	10.6
Others	35	10.9
Total	320	100.0

Table 17.History of betel nuts chewing among staffs, supervisory and officers

History of betel nuts chewing	Staffs (N=236)		Supervisory (N=64)		Officers (N=20)	
	Number	Percentage	Number	Percentage	Number	Percentage
Age of started chewing betel nuts (years old)						
14	2	0.8	0	0.0	0	0
15-19	66	27.5	12	18.8	2	10.0
20-24	71	30.1	19	29.7	3	15.0
25-29	36	15.3	11	17.2	2	10.0
30-50	61	26.3	22	34.4	13	65.0
Total	236	100.0	64	100.0	20	100.0
Reason for started chewing betel nuts						
Problems in work, relationships and family	24	10.2	7	10.9	3	15.0
Experiment	101	42.8	23	35.9	11	55.0
Encouraged by boss-co-workers	39	16.5	10	15.6	0	0.0
Encouraged by family members	23	9.7	6	9.4	4	20.0
Events	25	10.8	9	14.1	0	0
Others	24	10.2	9	14.1	2	10.0
Total	236	100.0	64	100.0	20	100.0

4.3.2 Patterns of betel nuts chewing (Lifetime) among participants

As in table 18, the patterns of betel nuts chewing among participants within lifetime are mentioned. 245 participants (76.6%) have ever chewed “92” in their lifetime and 133 participants chewed betel nuts without tobacco. These are Parajet (35.3%), “100” (32.2%),Steam leaves (30.6%), ”45” (29.7%), “Signal” (28.4%) and “Star” (26.9%) accordingly.

There were 101 participants who used to chew average 2-4 days per month within lifetime which is 31.6% of total participants. Monthly chewing of betel nuts in second place with 24.7% and 1-3 days per week have third highest percentage (22.2). 21.5 participants have habits of chewing betel nuts for 4 days per week and more.

Table 18 mentioned that 171 participants (53.4%) usually chew 1-2 pack of betel nuts per single occasion. Others are 3-4 packs (23.4%) and 5 packs and more (23.1%).

The patterns of betel nuts chewing among staffs, advisory and officers are shown respectively in table 19. Almost half of the staffs (41.5%) have consumed betel nuts without tobacco in their lifetime and 178 staffs(75.4%) have ever chewed betel nuts before. After that, staffs consumed “Parajet” (36.4%),”100” (31.8%), “45” (28.8%), Signal (27.1%), Steam leaves (64%) and “Star” (26.7%). In the category of betel nuts chewing frequency per month, 2-4 days per month is the highest percentage with 31.4% and it is followed by 1-3 days per week (23.4%). 53 staffs used to chew betel nuts average 4 days per week and more in their lifetime. 122 staffs (51.8%) stated that 1-2 packs of betel nuts per single occasion is their routine consumption. “3-4 packs” and 5 packs and more” have same number of staffs with 24.1%.

Table 18.Patterns of betel nuts chewing (Lifetime) among participants

Pattern of betel nuts chewing (Lifetime)	Frequency	Percentage
Type of betel nuts (N=320)	133	41.6
Without tobacco	245	76.6
92 (Ninety two)	113	35.3
Parajet	95	29.7
45 (Forty five)	103	32.2
100 (One hundred)	91	28.4
Signal	86	26.9
Star	98	30.6
Steam leaves		
Betel nuts chewing frequency per month		
Monthly	79	24.7
2-4 days per month	101	31.6
1-3 days per week	71	22.2
4-7 days per week	69	21.5
Total	320	100.0
Amount of betel nuts chewed in single occasion		
1-2 packs	171	53.4
3-4 packs	75	23.4
5 packs and more	74	23.2
Total	320	100.0
Medium	2	
Min	1	
Max	15	

In table 19, type of betel nuts that are consumed among supervisory are stated. “92” is the betel nuts type that most advisory consumed in their lifetime and the percentage is 76.6%. 228 supervisory have consumed betel nuts without tobacco before. The betel nuts that less advisory consumed is “Star” and its percentage is 25%. 22 supervisory (34.4%) used to chew 2-4 days per month in their lifetime and 14 supervisory usually chew once a month. There are 15 supervisory who have chewing habits of average 4 days per week and more. Most advisory chew 1-2 packs of betel nuts per single occasion (51.5%). 5 packs and more betel nuts have been consumed by 15 supervisory (23%). Almost all of the officers (90%) have chewed “92”. 35% of officers chewed betel nuts tobacco, “Parajet” and “45” in their lifetime. The rest are

Steam leaves (45%), “Star” (40%), “100” (30%) and “Signal (25%). There are 11 officers who have habits of chewing betel nuts monthly. There is only one officer that usually consume betel nuts for average 4 days per week and more. There are 5 officers in average 2-4 days per month and 3 officers in average 1-3 days per week. 85% of the officers used to consume 1-2 packs of betel nuts per single occasion and the rest is 5 packs and more with 15%.

Table 19.Patterns of betel nuts chewing (Lifetime) among staffs, supervisory and officers

Patterns of betel nuts chewing(Lifetime)	Staffs		Supervisory		Officers	
	Number	Percentage	Number	Percentage	Number	Percentage
Type of betel nuts (N=320)						
Without tobacco	98	41.5	28	43.8	7	35.0
92 (Ninety two)	178	75.4	49	76.6	18	90.0
Parajet	86	36.4	19	29.9	7	35.0
45 (Forty five)	68	28,8	19	29.9	7	35.0
100 (One hundred)	75	31.8	23	35.9	6	30.0
Signal	64	27.1	21	32.8	5	25.0
Star	63	26.7	16	25.0	8	40.0
Steam leaves	64	27.1	24	37.5	9	45.0
Betel nuts chewing frequency per month						
Monthly	54	22.9	14	21.9	11	55.0
2-4 days per month	74	31.4	22	34.4	5	25.0
1-3 days per week	55	23.3	13	20.3	3	15.0
4-7 days per week	53	22.4	15	23.4	1	5.0
Total	236	100.0	64	100.0	20	100.0
Amount of betel nuts chewing in singe occasion						
1-2 packs	122	51.8	33	51.5	17	85.0
3-4 packs	57	24.1	17	26.5	0	0.0
5 packs and more	57	24.1	14	23.0	3	15.0
Total	236	100.0	64	100.0	20	100.0

4.3.3 Patterns of betel nuts chewing among participants in the past 12 months

Table 20 showed that 100 participants (31.3%) have consumed betel nuts tobacco in the past 12 months. “92” (65%) is the betel nuts type that the participants mostly chew. “Parajet” (28.2%) have been chewed by total 90 participants within 12 months. After these 3 betel nuts types, there are “Signal” (25.6%), Steam leaves (25%), “45” (23.4%), “Star” (23.4%) and “100” (23.1%).

More than half of the participants (55%) have habits of chewing betel nuts 1-2 packs per single occasion. 23.8% of total participants can chew 5 packs and more of betel nuts per single occasion in the past 12 months as mentioned in table 20.

Table 20.Patterns of betel nuts chewing among participants in the past 12 months

Pattern of betel nuts chewing(past 12 months)	Frequency	Percentage
Type of betel nuts		
Without tobacco	100	31.3
92 (Ninety two)	208	65.0
Parajet	90	28.1
45 (Forty five)	75	23.4
100 (One hundred)	74	23.1
Signal	82	25.6
Star	75	23.4
Steam leaves	80	25.0
Betel nuts chewing frequency per month		
Monthly	43	13.4
2-4 days per month	93	29.1
1-3 days per week	99	30.9
4-7days per week	85	26.6
Total	320	100.0
Amount of betel nuts chewing in single occasion		
1-2 packs	176	176
3-4 packs	68	68
5 packs and more	76	76
Total	320	100.0
Time of chewing		
Morning	67	20.9
Afternoon	91	28.4
Evening	49	15.3
Night	10	3.1
Above all	103	32.3
Total	320	100.0
Reason for chewing		
Problems in work, family and relationships	24	7.5
Events (e.g. festivals, celebrations etc)	48	15.0
Encouraged by co-workers or friends	105	32.8
Just want to chew (no other reason)	143	44.7
Total	320	100.0
Place of chewing		
Home	48	15.0
Work	148	46.2
Restaurants and bars	25	7.8
Others	15	4.7
Above all	84	26.3
Total	320	100.0

Others = street, friends house, relatives house

There were 103 participants who consumed betel nuts the whole day in the past 12 months. Chewing habits in afternoon is in second place with 28.4% and chewing habits in morning (20.9%) is third. Only 10 participants used to chew betel nuts at night. 143 participants stated that they chewed betel nuts in the past 12 months because of their own intention with no other reasons. 105 participants (32.8%) were chewing betel nuts because they have encouraged by co-workers or friends. Problems in work, relationship and family cause 24 participant to chew in the past 12 months. 84 participants said that they have chewed betel nuts in any place and 46.2% have habits of chewing at work. 48 participants (15%) like to chew betel nuts at home.

Moreover, 151 staffs (64%) have chewed “92” within 12 months. 34.3% of staffs used to chew betel nuts without tobacco as mentioned in table 20. The rest percentage for type of betel nuts that staffs have chewed in the past 12 months are “Parajet” (28%), “Signal” (23.7%), “100” (22.9%), “Star” (22%), and “45” is the least with 20.8%. Average 1-3 days per week of betel nuts chewing is the most common among staffs in the past 12 months with 32.6%. It is followed by 2-4 days per month with 27.9%. 63 staffs used to consume betel nuts average 4 days per week and more in the past 12 month. In the category of betel nuts chewing per single occasion, 1-2 packs of betel nuts per single occasion (54.3%) have highest percentage. 57 staffs have chewing habits of 5 packs and more per single occasion. 72 staffs reported that they used to chew the whole day in the past 12 months. Morning chewing is 21.2% and chewing in the afternoon is 28.8%. Only 9 staffs like to chew betel nuts at night. 18 staffs said that they were chewing betel nuts in the past 12 months because of problems in work, relationship and family. 44.1% of staffs just like to chew betel nuts with no other reason. 107 participants have chewed betel nuts in work and 35 participants at home.

As indicated in table 21, “92” is also the highest use of betel nuts among supervisory in the past 12 months which is same with staffs. The least percentage is betel nuts without tobacco 18.8%. 16 advisory (25%) like to chew “Parajet” and 23 supervisory for steam leaves (35.9%). Average 1-3 days per week (32.6%) have the highest percentage for betel nuts chewing As indicated in table 21, “92” is also the highest use of betel nuts among supervisory in the past 12 months which is same with

staffs. The least percentage is betel nuts without tobacco 18.8%. 16 advisory (25%) like to chew “Parajet” and 23 supervisory for steam leaves (35.9%). Average 1-3 days per week (32.6%) have the highest percentage for betel nuts chewing frequency per month. 30 supervisory have habits of chewing once a month. 27.9% used to chew average 2-4 days per month. 26.8% of supervisory chewed betel nuts 4 days per week and more in the past 12 months. 16 people were chewing 5 pack and more per single occasion among all advisory. Half of the supervisory used to chew 1-2 packs of betel nuts per single occasion. 31.3% of advisory like to chew betel nuts in the afternoon and 50 advisory used to chew in the morning. There is one people who used to consume betel nuts at night among all supervisory in the past 12 months. 46.9% reported that they were chewing betel nuts in the past 12 months because they just want to chew with no other intentions. 5 people chewed betel nuts because of problems in work, relationship and family. 50% of supervisory were consuming betel nuts at work in the past 12 months and 11 people (17.2%) used to chew at home which can be seen at table 21.

“92” is the betel nuts that most officers chewed in the past 12 months with percentage of 80%. 6 officer have chewed betel nuts without tobacco and type of betel nuts with least percentage is “100” with 20%. 8 officer have habits of chewing betel nuts only one time in a month. There are 6 officers in average 2-4 days per month and 3 officers in average 1-3 days per week. Also, 3 officers used to chew betel nuts 4 days per week and more. All most all of the officers (80%) were chewed 1-2 pack per single occasion in the past 12 months as stated in table 21. There are only 3 officers who chewed 5 pack and more per single occasion. 60% of officers can chew betel nuts the whole day. Afternoon chewing and evening chewing have same percentage with 15%. Most officers were chewing betel nuts because they just want to (45%). Encouragemnt from co-workers or friends have second highest percentage with 35%. In terms of place of chewing, work have highest percentage (45%) and followed by all places (20%),home (15%), Restaurants and bars (10%) and others (10%).

Table 21.Patterns of betel nuts chewing among staffs, supervisory and officers in the past 12 months

Patterns of betel nuts chewing (12months)	Staffs		Supervisory		Officers	
	Number	Percentage	Number	Percentage	Number	Percentage
Type of betel nuts						
Without tobacco	81	34.3	12	18.8	6	30.0
92 (Ninety two)	151	64.0	44	68.8	16	80.0
Parajet	66	28.0	16	25.0	7	35.0
45 (Forty five)	49	20.8	18	28.1	7	35.0
100 (One hundred)	54	22.9	15	23.4	4	20.0
Signal	56	23.7	20	31.3	5	25.0
Star	52	22.0	16	25.0	8	40.0
Steam leaves	47	19.9	23	35.9	9	45.0
Betel nuts chewing frequency per month						
Monthly	30	12.7	5	7.8	8	40.0
2-4 days per month	66	27.9	21	32.8	6	30.0
1-3 days per week	77	32.6	19	29.7	3	15.0
4-7 days per week	63	26.8	19	29.7	3	15.0
Total	236	100.0	64	100.0	20	100.0
Amount of betel nuts in singe occasion						
1-2 packs	128	54.3	32	50.0	16	80.0
3-4 packs	51	21.7	16	25.0	1	5.0
5 or more than 5 packs	57	24.0	16	25.0	3	15.0
Total	236	100.0	64	100.0	20	100.0
Time of chewing						
Morning	50	21.2	15	23.4	2	10.0
Afternoon	68	28.8	20	31.3	3	15.0
Evening	37	15.7	9	14.1	3	15.0
Night	9	3.8	1	1.6	0	0
Above all	72	30.5	19	29.7	12	60.0
Total	236	100.0	64	100.0	20	100.0
Reason for drinking						
Problems in work, relationships and family	18	7.6	5	7.8	2	10.0
Events (e.g. festivals, celebrations)	36	15.3	10	15.6	2	10.0
Encouraged by co-workers or friends	78	33.1	19	29.7	7	35.0
Just want to drink (No other reason)	104	44.1	30	46.9	9	45.0
Total	236	100.0	64	100.0	20	100.0
Place of drinking						
Home	35	14.8	11	17.2	3	15.0
Work	107	45.3	32	50.0	9	45.0
Restaurants and bars	18	7.6	5	7.8	2	10.0
Others	11	4.7	2	3.1	2	10.0
Above all	65	27.5	14	21.9	4	20.0
Total	236	100.0	64	100.0	20	100.0

4.3.4 Environmental factors of betel nuts chewing among participants

As can be seen from table 22, there are 119 participants (37.2%) that saying their parents do not have betel nuts chewing habits. Also, there are 31 participants whose parents are chewing betel nuts all the time. Among sibling and relatives, habits of chewing occasionally have the highest percentage with 55.6% and 70.6% respectively. In bosses and co-workers of the participants, occasional chewing is also the highest with bosses (60.9%) and co-workers (64.1%). There are 100 participants reporting that their bosses do not chew betel nuts and there are only 3 participants whose co-workers do not have betel nuts chewing habits. Chewing occasionally is also common among friends of the participants with percentage of 62.2%.

Table 22.Environmental factors of betel nuts chewing among all participants

Environmental factors	Number	Percentage
Chewing habits in parents	119	37.2
Never	170	53.1
Chew occasionally	31	9.7
Always chew	320	100.0
Total		
Chewing habits in siblings		
Never	86	26.9
Chew occasionally	178	55.6
Always chew	56	17.5
Total	320	100.0
Chewing habits in relatives		
Never	39	12.2
Chew occasionally	226	70.6
Always chew	55	17.2
	320	100.0
Total		
Chewing habits in boss		
Never	100	31.3
Chew occasionally	195	60.9
Always chew	25	7.8
Total	320	100.0
Chewing habits in co-workers		
Never	3	0.9
Chew occasionally	205	64.1
Always chew	112	35.0
Total	320	100.0
Chewing habits in friends		
Never	2	0.6
Chew occasionally	199	62.2
Always chew	119	37.2
Total	320	100.0

According to table 23, chewing occasionally have the highest percentage among parents, siblings, relatives, bosses, co-workers and friends of all staffs, advisory and officers. There are 90 staffs who said that their parents have never chewed betel nuts before and 63 staffs with their sibling who never chew betel nuts. Relatives of the staffs who always chew betel nuts have second highest percentage of environmental factors of betel nuts chewing. There are only 0.4% in the both category of chewing habits among co-workers and chewing habits among friends of the staff. 9

participants (14.1%) said that their parents are chewing betel nuts all day and 14 supervisory (21.8%) whose siblings have habits of chewing all day. In chewing habits among co-workers and friends among advisory, there are 17 and 24 advisory reporting that their co-workers and friends always chew betel nuts. Family members of the most officers do not chew betel nuts with 50% for parents and 55% for siblings. Relatives of the most officers chew betel nuts occasionally (75%). There are 45 % of officers who said that their bosses have occasional betel nuts chewing and 85% for co-workers. Most officers said that their parents sometimes chew betel nuts.

Table 23.Environmental factors of betel nuts chewing among staffs, supervisory and officers

Environmental factors	Staffs		Supervisory		Officers	
	Number	Percentage	Number	Percentage	Number	Percentage
Chewing habits in parents						
Never	90	38.1	18	28.1	10	50.0
Chew occasionally	126	53.4	37	57.8	8	40.0
Always chew	20	8.5	9	14.1	2	10.0
Total	236	100.0	64	100.0	20	100.0
Chewing habits in siblings						
Never	63	26.7	12	18.8	11	55.0
Chew occasionally	133	56.4	38	59.4	7	35.0
Always chew	40	16.9	14	21.8	2	10.0
Total	236	100.0	64	100.0	20	100.0
Chewing habits in relatives						
Never	29	12.3	8	12.5	3	15.0
Chew occasionally	166	66.3	44	68.8	15	75.0
Always chew	41	17.4	12	18.8	2	10.0
Total	236	100.0	64	100.0	20	100.0
Chewing habits in boss						
Never	60	25.4	30	46.9	9	45.0
Chew occasionally	156	66.1	31	48.4	9	45.0
Always chew	20	8.5	3	4.7	2	10.0
Total	236	100.0	64	100.0	20	100.0
Chewing habits in co-workers						
Never	1	0.4	2	3.1	0	0
Chew occasionally	143	60.6	45	70.3	17	85.0
Always chew	92	39.0	17	26.6	3	15.0
Total	236	100.0	64	100.0	20	100.0
Chewing habits in friends						
Never	1	0.4	1	1.6	0	0
Chew occasionally	144	61.0	39	60.9	16	80.0
Always chew	91	38.6	24	37.5	4	20.0
Total	236	100.0	64	100.0	20	100.0

Table 24.Association between socio-demographic characteristics and amount of betel nuts chewing per single occasion

Characteristics	Amount of betel nuts chewing per single occasion				X^2	OR
	Less than 5 packs		5 or more packs			
	Number	%	Number	%		
Age					1.23	0.75
Younger than 36 years old	117	48.0	42	55.3		
36 years and older	127	52.0	34	44.7		
Marital status					0.70	0.85
Single/Divorced/Widowed	66	27.0	23	30.3		
Married	178	73.0	53	69.7		
Education					0.02*	1.27
Primary/middle/high school	182	74.6	53	69.7		
College and higher	62	25.4	23	30.3		
Income					0.09	1.09
100 USD and less	181	74.2	55	72.4		
More than 100 USD	63	25.8	21	27.6		
Ethnic groups					0.45	0.82
Myanmar	170	69.7	56	73.7		
Others	74	30.3	20	26.3		
Place of chewing					0.00*	0.97
Home	41	16.8	13	17.1		
Other places	203	83.2	63	82.9		

* p-value ≤ 0.05

4.3.5 Association between characteristics and amount of betel nuts chewing per single occasion

Relationships between characteristics and amount of betel nuts chewing per single occasion were measured in table 24. According to statistics, older age were chewing more packs than younger ones with p-value=1.23 and people who do not have partners have higher chance of chewing more betel nuts than those who have partners (p-value=0.70). There is significance between education and amount of betel nuts chewing per single occasion (p-value=0.02) and income have no significant difference (p-value=0.09). Significant difference also was found between place of chewing and amount of betel nuts per single occasion (p-value=0.00) and people who

chew at home have more chewing days per month than those who chew at other places.

Table 25.Association between socio-demographic characteristics and frequency of betel nuts chewing

Characteristics	Betel nuts chewing frequency per month				X^2	OR
	Less than 5 days		5 or more days			
	Number	%	Number	%		
Age					0.12	1.08
Younger than 36 years old	93	50.5	66	48.5		
36 years and older	91	49.5	70	51.5		
Marital status					0.00*	1.36
Single/Divorced/Widowed	56	30.4	33	24.3		
Married	128	69.6	103	75.7		
Education					0.68	0.99
Primary/middle/high school	135	73.4	100	73.5		
College and higher	49	26.6	36	26.5		
Income					0.11	1.09
100 USD and less	137	74.5	99	72.8		
More than 100 USD	47	25.5	37	27.2		
Ethnic groups					0.23	0.88
Myanmar	128	69.6	98	72.1		
Others	56	30.4	38	27.9		
Place of chewing					0.79	1.31
Home	34	18.5	20	14.7		
Other places	150	81.5	116	85.3		

* p-value ≤ 0.05

4.3.6 Relationship between characteristics and frequency of betel nuts chewing

There is no significant difference found between age groups and amount of betel nuts consumption per single occasion (p-value= 0.12). Even though the frequency of betel nuts chewing were not significant disparate in young age group (younger than 36), chewing habits of 5 or more days have slightly higher proportion in older age group (36 years and older). So it means that the older the age, the more days they tend to consume betel nuts. Marital status is significant with married people tend to chew more days. There is also no significance between education and

frequency of betel nuts chewing (p-value=0.68). People who chew betel nuts at home can chew more days than those who chew at other places and p-value is 0.79.

4.3.7 Association between frequency, amount of betel nuts chewing and ranks of workers

There is no statistically significant difference between frequency, amount of betel nuts chewing and ranks of workers with frequency (p-value=0.10) and amount (p-value=0.13). 39.8% of the staffs were chewing 5 or more than 5 days in a month and 21.6% were chewing 5 or more than 5 packs per single occasion. Among supervisory and officers, half of them were chewing 5 or more than 5 days per month and 29.8% chewing 5 or more than 5 packs per single occasion.

Table 26.Association between frequency, amount of betel nuts chewing and ranks of workers

Patterns	Ranks				X^2	OR
	Staffs		Supervisory and officers			
	Number	%	Number	%		
Betel nuts chewing frequency per month						
Less than 5 days	142	60.2	42	50.0	0.10	1.51
5 or more than 5 days	94	39.8	42	50.0		
Amount of betel nuts per single occasion						
Less than 5 drinks	185	78.4	59	70.2	0.13	1.56
5 or more than 5 drinks	51	21.6	25	29.8		

4.3.8 ASSIST scores for betel nuts chewing among participants

In ASSIST questionnaire, betel nuts chewing are not included. So, betel nuts will be put into :others" category and screening test were done. The screen test for betel nuts chewing is the same with betel nuts with resulting in low, medium and high

score. It determined the experience of betel nuts chewing in lifetime and in the past 3 months.

There are 89 participants who chew betel nuts daily or almost daily in the past 3 months and 118 participants who were chewing betel nuts weekly. 2 participants said that they had strong desire and want to chew betel nuts instantly in the past 3 months. 13.1% participants have family who were really worried about them. 8 participants (2.5%) are fallen to “high risk category” for betel nuts chewing and 304 participants (95%) are in “medium risk category”.

Table 27.ASSIST scores for betel nuts chewing among participants

ASSIST Scores	Number	Percentage
Low risk	8	2.5
Medium risk	304	95.0
High risk	8	2.5
Total	320	100.0

4.3.9 Association between characteristics and ASSIST scores for betel nuts chewing among participants

Table 28 demonstrated the relationships between characteristics and ASSIST scores for betel nuts chewing among participants with chi-square test. In this table, there was significant difference between characteristics and ASSIST scores. In age groups, 36 years old and older age groups have higher percentage for medium risks than those who were younger.

Table 28.Associations between characteristics and ASSIST scores for betel nuts chewing among participants

Characteristics	ASSIST scores of betel nuts chewing						X^2
	Low risk (n=8)		Medium risk (n=284)		High risk (n=8)		
	Number	%	Number	%	Number	%	
Age							0.54
Younger than 36 years old	4	50.0	150	49.3	5	62.5	
36 years and older	4	50.0	154	50.7	3	37.5	
Marital status							0.77
Single/Divorced/Widowed	3	37.5	73	24.0	2	25.0	
Married	5	62.5	231	76.0	6	75.0	
Education							5.43
Primary/middle/high school	3	37.5	226	74.3	6	75.0	
College and higher	5	62.5	78	25.7	2	25.0	
Income							2.39
100 USD and less	4	50.0	226	74.3	6	75.0	
More than 100 USD	4	50.0	78	25.7	2	25.0	
Ethnic groups							2.74
Myanmar	4	50.0	215	70.7	7	87.5	
Others	4	50.0	89	29.	1	12.5	
Place of chewing							41.6
Home	8	100.0	46	15.1	0	0.0	
Other places	0	0.0	258	84.9	8	100.0	

4.4 Alcohol drinking and betel nuts chewing

4.4.1 Habits of alcohol drinking after betel nuts chewing

According to table 27, 121 participants (37.8%) like to drinking right after they finished chewing betel nuts.

Table 29.Number and percentage distribution for habits of alcohol drinking after betel nuts chewing

Alcohol drinking after betel nuts chewing	Number	Percentage
Yes	121	37.8
No	199	62.2
Total	320	100.0

4.4.2 Habits of betel nuts chewing after alcohol drinking

There are 76 participants (23.8%) who have habits of betel nuts chewing after they have drunk alcohol.

Table 30.Number and percentage distribution for habits of betel nuts chewing after alcohol drinking

Betel nuts chewing after alcohol drinking	Number	Percentage
Yes	76	23.8
No	244	76.3
Total	320	100.0

4.5 Smoking and Tobacco

4.5.1 Habits of smoking and drugs use among participants

There are 101 participants who have ever smoked (31.6%). In the past 12 months, there are 84 participants (26.2%) who have smoked and the rest do not smoke as mentioned in table 29. All the participants have never used drugs before.

Table 31.Smoking habits among participants

Smoking	Number	Percentage
Ever smoke		
Yes	101	31.6
No	219	68.4
Total	320	100.0
Smoking in the past 12 months?		
Yes	84	26.2
No	236	73.8
Total	320	100.0

4.5.2 ASSIST scores for tobacco consumption among participants

In this category, the ASSIST scores for tobacco consumption among participants were described. 24.1% of total participants is in medium risk and 1 participant is in high risk category.

Table 32.ASSIST scores for tobacco consumption among participants

ASSIST scores	Number	Percentage
Low risk	242	75.6
Medium risk	77	24.1
High risk	1	0.3
Total	320	100.0

4.6 History of hypertension among participants

According to table, there are 37 participants (11.6%) who have history of hypertension in this study.

Table 33.History of hypertension among participants

History of hypertension	Number	Percentage
Yes	37	11.6
No	283	88.4
Total	320	100.0

Chapter 5

Discussion, Conclusion and Recommendation

5.1 Discussion

The purpose of this study was to identify the patterns of use towards alcohol drinking and betel nuts chewing such as frequency, amount, duration, type, first age, reason and place. This study was cross-sectional study conducting among workers of Myitnge Train Carriage and Wagons Workshop which is located in Myitnge Township, Mandalay, Myanmar. The following part were discussed about the research findings.

5.1.1 History of alcohol drinking

The average age of started drinking alcohol was 24 years old ranging from 16 years old to 50 years old in this study. There are There were only 1 participant who started drinking alcohol younger than 15 years old. Two third of the participants started drinking after they turned 20. So, age of drinking onset among participants in this study is older compared to other studies. In a study about age of drinking onset in United States, there are more people that started drinking alcohol before they turned 20.(Hingson & Zha, 2009) There are still no study that include age of drinking onset in Myanmar.

There are 3 positions such as staffs, supervisory and officers out of all participants. There is only 1 staff who started drinking alcohol younger than 15 years old but there is none among advisory and officers. Age of drinking onset among staffs have small difference from overall participants. Among staffs, there are more in before 20 age group than after 20 age group but advisory and officers are similar to overall age of drinking onset. So it means the age of drinking onset is likely to be higher when the position got higher.

Almost half of the participants started drinking for experience in this study. Also, one fifth of the participants said that they start to drinking alcohol because encouragement from others such as family members, co-workers and boss. This measurement cannot be compared with other studies because most study didn't put measurement for reason for drinking onset. Among all staffs, advisory and officers, experimental drinking is most common factor for stared drinking alcohol. Also, second most common reason from all 3 positions is the encouragement from boss or co-workers. That means the main reasons for started drinking alcohol are same whether they are different ranks or not. Each ranks can be compared to overall study and it will still be similar in reasons for drinking onset.

5.1.2 Patterns of alcohol drinking

Information about patterns of alcohol drinking among participants was described in detail. Among participants, the favorite alcohol beverages were beer and whisky. These two beverage have highest percentage of drinking among participants. The rest of the alcohol beverages such as gin, rum, white spirit, home-made brew and wine have nearly same amount of drinkers in this study. Most of the workers enjoy standard 5 % alcohol contained beer. The alcohol types are varying the strength of pure alcohol depend on the brands and laws according to the countries. The most popular type of alcohol in Myanmar is beer and there are many beer with different brand names which contain 5% alcohol that produced by different countries. But there is still no study that focus on this proof in Myanmar. So this study will be a pilot study in terms of pattern of alcohol consumption in Myanmar. In terms of ranks (staffs, advisory and officers), the types of alcohol that they mostly drink are almost the same. So, no matter the rank is in this study, all of them used to drink same brands and types of alcohol.

Almost half of the participants in this study have habits of drinking 2-4 days per month and it is followed by habits of drinking once a month which is in second place. There are 14 participants who drink 4 days per week and more in this study. In a study conducted in Mexico which determine the pattern of alcohol consumption, the

drinking habit of 2-4 days per month is also most common habit and drinking monthly is second most common. These are followed by 1-3 days per week and the last is 4 days per week and more. So, it proves that there are similarities between these two studies (Quintero et al., 2019). But there is no study that measure alcohol drinking frequency per month in Myanmar. Because of that, this study can only be compared with other studies from abroad. Among staffs and advisory, drinking 2-4 days per months is most common habit but drinking once a month is most common among officers. So, it is slightly different among ranks. It means that when the rank is the highest, the alcohol drinking frequency tend to lower in this study. Only officers' drinking frequency is contrary to the study from Mexico. But the overall drinking frequency can be compared and it have same results.(Quintero et al., 2019) In this study, 25% of the participants were drinking 5 or more than 5 drinks per single occasion. Binge drinking in men means 5 or more drinks per single occasion according to Center for Disease and Control (Center for Disease Control and Prevention, 2018). It is similar to a study from United States which was conducted in 2015. The study focus on U.S adults who were binge drinking. Almost 25% of the study were binge drinking in the study of United States (Kanny et al., 2018). There are still study that focus on binge drinking in Myanmar.

Patterns of alcohol drinking in the past 12 months among workers of Myitnge Train Carriage and Wagons Workshop are demonstrated. Beer and whisky are also the most common types of alcohol that the participants used to drink the most in the past 12 months. In this study, 1-3 days per week drinking is the most common drinking frequency in the past 12 month. So, it is different from a study in Mexico that focus on alcohol consumption. In a study of Mexico, 2-4 days per months drinking is the most common. Among three different ranks, 2-4 days per month is most common only in officers. So only drinking frequency per month (past 12 months) of officers is similar to a study from Mexico. (Quintero et al., 2019)

Number of participants who binge drinking alcohol in the past 12 months were same with binge drinking within lifetime. So, it is also similar to a study from United States that conducted among adults (Kanny et al., 2018). All three ranks have almost same percentage in amount of alcohol drinking per frequency in single

occasion. In this study, most participants like to drink alcohol at night but some also used to drink at home. The main reason for drinking alcohol (past 12 months) was their own satisfaction but no other reason. The rest are encouragement from boss, co-workers, family members, problems in relationships, work and family and events. Restaurants and bars are the places that the participants used to drink in the past 12 months. There are still not study that focus on reason of drinking, time of drinking and place of drinking in the past 12 months. So, it cannot be compared with other studies in these categories.

5.1.3 Characteristics of the participants and alcohol drinking

In this study, older people were drinking less than younger people (0R=0.95). It is similar the study that focus on alcohol drinking and ages. The study stated that the drinking habits tend to decline as the age get older. (Zealand & Staff, 2012). In terms of marital status, there were 45 participants who do not have partners drink 5 or more than 5 days per month and 108 participants who have partners. People who are living without partners drink less than people who are living with partners (OR=0.86). As marriage can affect on the patterns of alcohol drinking, there will be difference between single and married. This study is similar to the study that conducted in England, Scotland and Wales. The study was conducted among 1958 born people. The study described that high alcohol drinking can be found more in single than married. Also it is related with marital separation.

There is no significant difference between education and frequency of alcohol drinking. It is different from the study that conducted in American old people. In the study, education status is positively associated with alcohol drinking. The study was conducted in 2016 and 1493 participants were selected (Assari & Lankarani, 2016). The higher education people were drinking more than those who have lower education in this study (OR= 1.41). So, it is different from the study that conducted in United States. The study was based on 5 cities of United states such as New Haven, Baltimore, St. Louis, Durham-Piedmont and Los Angeles which were Epidemiological Catchment Area program survey sites. In that study, people who did

not finish high school were 6.34 higher to have alcohol dependence than those who have higher education (Crum et al., 1993).

There is also no significant difference between ethnic groups and frequency of alcohol drinking. In this study, other ethnic groups were drinking more days than Myanmar ethnic groups (OR=8.94). This study cannot be compared in terms of ethnic groups because there is no previous study that focus on ethnic groups and frequency of drinking.

In this study, there is significant difference between ethnic groups and amount of alcohol drinking per single occasion (p-value= 0.05). Older people were drinking more days than younger people in this study (OR= 2.14). So it is different from the study that conducted in United States. The study was based on college age groups. The study stated that binge drinking decreased over time and binge drinking can be found more in younger groups (Krieger, Young, Anthenien, & Neighbors, 2018). There is no significant difference found in marital status in terms of drinking 5 or more than 5 drinks per single occasion. People who have partners were like to drink less than those who do not partners. Participants who have college and higher degree tend to drink more amount than others. So it is similar to the study that conducted in United States which focus among high school students. The study said that people who completed college tend to be at risk of more drinking than those who don't (Bingham, Shope, & Tang, 2005). Significant difference was not found between religion and ethnic groups in terms of amount of alcohol drinking per single occasion. Also, there is no previous study that focused on religion, ethnic groups and alcohol drinking in Myanmar. So it cannot be compared.

5.1.4 History of betel nuts chewing

In this study, the history of betel nuts chewing was described in details. Average age of started chewing was 25 years old among all participants. 70 % of participants started chewing before they turned 30 years old. It is similar to a study in Myanmar that conducted in 2016. There are more participants who started chewing

before 30 than those who stated chewing after they turn 30. In a study from Myanmar, average age of started chewing is 29 years old. So, it is almost similar as average age of this study was 25 years old. Only officers have more people in started chewing after 30 years old among all three ranks (Myint et al., 2016). Experimental chewing is the main reason for started chewing betel nuts among all participants. No study had done for research in main reason for started chewing betel nuts yet.

5.1.5 Patterns of betel nuts chewing

Patterns of betel nuts chewing within lifetime among all participants are described in this study. As betel nuts chewing is still popular in Myanmar, there are a lot of people who chew betel nuts. Also, there are still a lot betel nuts chewers not only in rural areas bt also in big cities such as Yangon and Mandalay. In Mandalay, there are a lot of betel nuts shops and sellers. People can get different kinds of betel nuts such as “92”, “45”, “100” and many others. The most popular types of betel nuts in Mandalay were betel nuts without tobacco and “92”. In this study, “92” is also the most popular betel nuts type among participants and it is followed by betel nuts tobacco, “100”, “ Parajet”, “45”, “Signal”, steam leaves and “Star”. It means that “92” is the most popular betel nuts in Mandalay.

Also, “92” is the most popular among all three ranks. For chewing frequency per month, 2-4 days per month is most common habits among participants in this study and it is followed by monthly chewing habits. Among officers, monthly consumption of betel nuts is the most common. But there are still no study that focus on types of betel nuts and frequency of betel nuts chewing per month. This study cannot be compared with others. There are 74 workers who chewed 5 or more than 5 betel nuts per single occasion. The average betel nuts chewing per single occasion is 3 packs per single occasion ranging from 1 pack to 15 packs. But it is lower than the study that conducted in 2016. In that study, the average betel nuts chewing per single occasion is 16 packs. So it is a lot smaller compared to the previous study (Myint et al., 2016).

Also, patterns of betel nuts chewing in the past 12 months are measured in this study. There will be types of betel nuts, frequency, amount, reason of use, place and time of use for betel nuts chewing in the past 12 month. As people like to chew "92" betel nuts the most, it is also the most popular betel nuts type in the past 12 months in this study. Also, betel nuts without tobacco is second most favorite betel nuts for workers. As for staffs and advisory, these two are most popular betel nuts. But steam leaves are more popular among officers and it is second most popular betel nuts after "92". Whatever the position, "92" always rank first among all workers. The frequency of betel nuts chewing in the past 12 months is different from frequency of lifetime. In the past 12 months, 1-3 days per week is most common chewing habits among workers which is different from lifetime frequency. The average of betel nuts chewing per single occasion in the past 12 months is also 3 packs. So, it is also lower than the study that conducted in Insein Township which have 16 packs average. But the previous study was conducted on general population and this study only focus on workers. So, the results can be different. A lot of workers in this study have habits of chewing betel nuts the whole day. But other people like to chew at specific time such as morning, afternoon, evening and night. In this study, the main reason for chewing betel nuts chewing in the past 12 months is own satisfaction but no other reasons. So, it is different from previous study that conducted in Myanmar. In the previous study, own satisfaction to chew betel nuts is not the most common reason (Myint et al., 2016). In terms of place of use, almost half of the workers used to consume betel nuts at work but some workers chew betel nuts in all places. As for place, time and reason use, three different ranks such as staffs, advisory and officers have almost the same habits.

5.1.6 Characteristics of the participants and Betel nuts chewing

There is no significance between age groups in terms of both amount and frequency of betel nuts chewing. Older participants were like to chew more betel nuts than younger people. So it is different from the previous study that conducted in Myanmar. In the study, average age of betel nuts consumer is about 45 years (Myint

et al., 2016). Also it is different from the study that conducted in Taiwan. The study was based on two-stage Waksberg-Mitofsky random digit dialing method. In that study, younger people tend to chew betel nuts more (Chen & Shaw, 1996).

In terms of marital status, people who do not have partners tend to chew more amount of betel nuts than those who have since they don't have marriage life (OR= 0.85). But people who don't have partners were chewing less days in a month when compared with those who have marriage partners (OR=1.36). This cannot be compared because there is no previous study was conducted on marriage life and betel nuts. There is no significant difference between education in terms of frequency of betel nuts chewing but significantly different in amount of alcohol drinking. In this study, people with lower education were less like to chew more amount of betel nuts per single occasion those who have higher education (OR=1.27). But, people with lower education were chewing more days in a month than those with higher education. There is no previous study that focus on marriage and betel nuts chewing.

There is no significant difference between income status and betel nuts chewing. People with high income have higher chance of chewing more days than those who were lower (OR=1.09) and also more amount of betel nuts (OR=1.09). There is no significant difference between ethnic groups and betel nuts chewing. Myanmar people tend to chew more amount of betel nuts and more days in a month than other ethnic groups according to data.

5.1.7 Alcohol drinking, betel nuts chewing and smoking.

There were 121 participants who like to chew betel nuts first and then drink alcohol in this study which means drinking alcohol after betel nuts chewing. And, there were 76 participants who have habits of drinking alcohol first and then chew betel nuts. So, it means that participants have more habits of chewing betel nuts and drink alcohol next in this study. There is no previous study that focus on this measurement. So, it cannot be compared.

In this study, smoking habits among participants were also measured. There were 101 participants (31.6%) who have ever smoked and there were 84 participants who have smoked in the past 12 months. Since all participants have both alcohol drinking and betel nuts chewing habits, those participants who have ever smoked have ABC risk behaviour. So it is lower than the study that conducted among Myanmar laborers in Thailand. That study was conducted among 300 Myanmar laborers who are 18-24 years old. It have 41.7% of ABC risk behaviour.(Htin et al., 2014)

5.1.8 ASSIST scores, Risks and health problems

Almost all of the participants in this study are at medium and high risk level of health diseases according to ASSIST scores for alcohol drinking. In ASSIST score of alcohol drinking, 11-26 marks is medium risks and above 26 marks for high risks. People who have above low risks level can have health related harms. Firstly, they can get hangovers, aggressive and violent behaviour, accidents and injury. After that, there will be reduced sexual performance, digested problems, ulcers, inflammation of the pancreas, high blood pressure. Also, anxiety, depression, difficulty in remembering things and solving problems. Once they have high risks, they will have deformities, permanent brain injury, muscle and nerve damage. In the end, there will be liver diseases, pancreatic diseases and cancers which are terminal cases. So it is very serious and should consider having treatment if there is alcohol related problems.

It is also the same in ASSIST scores for betel nuts chewing as almost all of them were chewing in the past 3 months. So they were included in medium risks and high risks. If people chew betel nuts for a certain amount of time, there will be badmouth and bad oral hygiene. Also they will have teeth problems which will be discoloured and deformed. People who chew betel nuts for a long time can have diabetes mellitus. In the end, they can get oral cancer and oesophageal cancer which are very serious diseases. So it should be considered for interventions and treatment.

ASSIST scores for tobacco smoking were also measured in this study with 77 participants have medium risks and only 1 participants have high risks. Medium risks

were between 4-26 marks high risks were between 27 and above. Tobacco can cause a lot of health problems such as premature aging, wrinkling of the skin, respiratory infections, asthma, high blood pressure and diabetes. Also it can cause kidney disease, chronic obstructive airways diseases and cardiac diseases.

In men, low risk-drinking is defined as no more than 4 drinks on any single day and no more than 14 drinks per week. So if participants drink more than 4 drinks per day and more than 14 drinks per week in this study, they will be in high risk for Alcohol Use Disorder. There were 14 workers who have high risks for developing the Alcohol Use Disorder (AUD). No significant difference was found between age groups and risks of developing diseases (p-value= 0.64). Older age have higher chance of getting high risks than younger people. Also there is no significant difference in education, marital status, income, religion and ethnic groups in terms of risks for developing diseases.

5.2 Conclusion

Alcohol drinking and betel nuts chewing are two of the health risk factors in Myanmar. There are a lot of alcoholics not only in big cities but also in rural areas.Most people drink alcohol at restaurants and bars in big cities such as Yangon and Mandalay. Most of resturants sell different kinds of alcohol. So people can get alcohol easily. In Mandalay where the study was conducted, there are alcoholic shops and restaurants that sell alcohol. Also, betel nuts chewing is still popular around Myanmar. Betel nuts sellers sell mostly with small shops which provide betel nuts and other snacks. So people can buy betel nuts easily from the shops and there are thousands of betel nuts shops in Mandalay and Myitnge Township.

In this study, there are 320 participants selected from workers of Myitnge Train Carriage and Wagons Workshop which is located in Myitnge Township, Mandalay, Myanmar. This study was conducted for determining patterns of alcohol drinking and betel nuts chewing among workers. In terms of patterns of alcohol drinking, different kinds of measurements such as frequency, amount, type of use,

reason of use, place of use and time of use were measured in this study. Also, history of alcohol drinking and environmental factors were also measured. Also, those measurements were done not only to whole participants but also each rank (staffs, advisory and officers) within lifetime and in the past 12 months. In this study, most beer and whisky are most popular alcohol beverages among all participants. 2-4 days per month drinking habits is most common habits for lifetime among participants and 1-3 days per month drinking is most common in the past 12 months. One fourth of this study were binge drinking within lifetime and it was also same in the past 12 months. Workers like to drink alcohol mostly at restaurants and bars. For time of drinking, night and evening was most common. The reason of drinking in the past 12 months that are given by most workers was own satisfaction.

Also, different measurements were done for patterns of betel nuts chewing among workers such as frequency, amount, type, reason, place and time of use. History and environmental factors of betel nuts chewing were also measured in this study. In this study, many workers consume “92” and betel nuts without tobacco the most within lifetime and in the past 12 months. 2-4 days per month chewing is most popular among workers in their lifetime and 1-3 days per week is highest in the past 12 months. It means that workers are drinking more in the past 12 months. 74 workers from this study consumed 5 or more than 5 packs in single occasion within lifetime and 76 workers for past 12 months. So it is higher in the past 12 months. Work is the place that most workers like to chew and people chew betel nuts different time in a day such as morning, afternoon, evening and night. In this study, co-workers of the most participants have alcohol drinking and betel nuts chewing habits. Also, family members of most workers have these habits too.

All of the participants (workers) have both alcohol drinking habits and betel nuts chewing habits. Some people might drink alcohol a lot but chew betel nuts less and some drink less but chew more. Also there are some workers who drink alcohol a lot and chew betel nuts a lot. In terms of three different ranks such as staffs, advisory and officers, staffs and advisory have almost same habits in every measurement for patterns of alcohol drinking and betel nuts chewing but officers have some differences

in both alcohol drinking and betel nuts chewing as they are higher positions than former two.

In terms of overall associations between characteristics of the workers and alcohol drinking, there is significant difference in age, education and income for amount of alcohol drinking per single occasion. Religion and ethnic groups were associated with frequency of betel nuts per month. In overall associations between characteristics of the workers and betel nuts chewing, only religion was associated with amount of betel nuts per single occasion.

Most of the participants were in medium and high risk in alcohol drinking according to ASSIST. So they should be considered for future programs to maintain healthy lives. Also there were 18 participants who have habits drinking more than 4 drinks per single occasion and more than 14 days per week which mean they have high risks of developing Alcohol Use Disorders (AUD). According to ASSIST scores on betel nuts chewing, almost all of them were in medium risks and high risks.

These results and data will be valuable and effective to use as knowledge and information for future studies. The preventive measures for both alcohol drinking and betel nuts chewing should be considered and conducted because of medium and high risks of developing health problems due to alcohol drinking and betel nuts chewing among workers of Myitnge Train Carriage and Wagons Workshop. Also, there should be more studies about alcohol drinking and betel nuts chewing in Myanmar. So it can provide more information and insights into alcohol drinking and betel nuts chewing. Therefore, more research studies should be conducted among workers and so their overall status for alcohol and betel nuts can be described more in detail.

5.3 Limitations

- The study was conducted only in one area which is a train factory. So workers from this Myitnge Train Carriage and Wagons Workshop cannot represent the drinking and chewing characteristics for general population of Myitnge township or Mandalay City.
- It also cannot represent the whole characteristics of workers in Myanmar.

- This study did not assess the diseases and risk factors that are caused by alcohol drinking and betel nuts chewing as focusing only on patterns of drinking and chewing.

5.4 Recommendations

- Officers should be provided information about risks of alcohol drinking and betel nuts chewing first. So, they can set the rules and regulations to prohibit alcohol drinking and betel nuts chewing during worktime.
- Assessment of diseases and risks factors that can be caused by alcohol drinking and betel nuts chewing should be conducted in the future.
- The longitudinal research study or qualitative study should be conducted to determine more insights of patterns of alcohol drinking and betel nuts chewing among workers of Myitnge Train Carriage and Wagons workshop.
- Studies among workers in other places should be conducted to assess the whole picture of the workers status.
- There should be future interventions for control assessment and preventive measures for both alcohol drinking and betel nuts chewing among workers of Myitnge Train Carriage and Wagons Workshop.
- Alcohol control law, alcohol reduction programs, and betel nuts reduction programs should enhanced by policy makers to be effective in prevention of harmful use of alcohol and betel nuts.

REFERENCES

ACHA. (201). Ecological model. Retrieved from https://www.acha.org/HealthyCampus/HealthyCampus/Ecological_Model.aspx

ADF. (2018). Betel Nut. Retrieved from https://adf.org.au/drug-facts/betel-nut/

Adu-Krow, D. W. (2008). PNG leads world with mouth cancer rate. Retrieved from http://www.wpro.who.int/papuanewguinea/mediacentre/mouth_cancer/en/

Anthenelli, R., & Grandison, L. (2012). Effects of stress on alcohol consumption. *Alcohol Res, 34*(4), 381-382.

Assari, S., & Lankarani, M. M. (2016). Education and Alcohol Consumption among Older Americans; Black-White Differences. *Front Public Health, 4*, 67. doi:10.3389/fpubh.2016.00067

Becker, H. C. (2008). Alcohol Dependence, Withdrawal, and Relapse. *Alcohol Res Health, 31*(4), 348-361.

Bhat, S. J. S., Blank, M. D., Balster, R. L., Nichter, M., & Nichter, M. (2010). Areca Nut Dependence Among Chewers in a South Indian Community Who Do Not Also Use Tobacco. *Addiction, 105*(7), 1303-1310. doi:10.1111/j.1360-0443.2010.02952.x

Bingham, C. R., Shope, J. T., & Tang, X. (2005). Drinking behavior from high school to young adulthood: differences by college education. *Alcoholism, clinical and experimental research, 29*(12), 2170-2180.

Cancer, I. A. F. R. O. (2004). Betel quid and Areca nut chewing. Retrieved from https://www.ncbi.nlm.nih.gov/books/NBK316572/?report=reader

Center, A. A. (2019). Short and Long Term Mental Effects of Alcohol. Retrieved from https://americanaddictioncenters.org/alcoholism-treatment/mental-effects

Center for Disease Control and Prevention, C. (2018). Fact Sheets-Binge Drinking. Retrieved from https://www.cdc.gov/alcohol/fact-sheets/binge-drinking.htm

Chen, J. W., & Shaw, J. H. (1996). A study on betel quid chewing behavior among Kaohsiung residents aged 15 years and above. *J Oral Pathol Med, 25*(3), 140-143.

Chowdhury, P., & Gupta, P. (2006). Pathophysiology of alcoholic pancreatitis: an overview. *World J Gastroenterol, 12*(46), 7421-7427. doi:10.3748/wjg.v12.i46.7421

Crum, R. M., Helzer, J. E., & Anthony, J. C. (1993). Level of education and alcohol abuse and dependence in adulthood: a further inquiry. *Am J Public Health, 83*(6), 830-837.

Fuster, D., & Samet, J. H. (2018). Alcohol Use in Patients with Chronic Liver Disease. *N Engl J Med, 379*(13), 1251-1261. doi:10.1056/NEJMra1715733

Guo, S. E., Huang, T. J., Huang, J. C., Lin, M. S., Hong, R. M., Chang, C. H., & Chen, M. Y. (2013). Alcohol, betel-nut and cigarette consumption are negatively associated with health promoting behaviors in Taiwan: A cross-sectional study. *BMC Public Health, 13*, 257. doi:10.1186/1471-2458-13-257

Haniffa, A. M., Saitoh, M., Abiko, Y., Takeshima, M., Nishimura, M., Yamazaki, M., . . . Shibata, T. (2007). Expression pattern of p63 in oral epithelial lesions and submucous fibrosis associated with betel-quid chewing in Sri Lanka. *Med Mol Morphol, 40*(4), 203-207. doi:10.1007/s00795-007-0383-6

Hingson, R. W., & Zha, W. (2009). Age of drinking onset, alcohol use disorders,

frequent heavy drinking, and unintentionally injuring oneself and others after drinking. *Pediatrics, 123*(6), 1477-1484. doi:10.1542/peds.2008-2176

Howteerakul, N., Suwannapong, N., & Than, M. (2005). Cigarette, alcohol use and physical activity among Myanmar youth workers, Samut Sakhon Province, Thailand. *Southeast Asian J Trop Med Public Health, 36*(3), 790-796.

Htin, K., Howteerakull, N., Suwannapong, N., & Tipayamongkholgul, I. M. (2014). Smoking, alcohol consumption and betal-quid chewing among young adult Myanmar laborers in Thailand. *Southeast Asian J Trop Med Public Health, 45*(4), 926-939.

IARC. (2018). Betel quid and betel nuts chewing.

Javed, F., Tenenbaum, H. C., Nogueira-Filho, G., Qayyum, F., Correa, F. O., Al-Hezaimi, K., & Samaranayake, L. P. (2013). Severity of periodontal disease in individuals chewing betel quid with and without tobacco. *Am J Med Sci, 346*(4), 273-278. doi:10.1097/MAJ.0b013e31827333fb

Kanny, D., Naimi, T. S., Liu, Y., Lu, H., & Brewer, R. D. (2018). Annual Total Binge Drinks Consumed by U.S. Adults, 2015. *Am J Prev Med, 54*(4), 486-496. doi:10.1016/j.amepre.2017.12.021

Khan, M. S., Bawany, F. I., Ahmed, M. U., Hussain, M., Khan, A., & Lashari, M. N. (2013). Betel nut usage is a major risk factor for coronary artery disease. *Glob J Health Sci, 6*(2), 189-195. doi:10.5539/gjhs.v6n2p189

Krieger, H., Young, C. M., Anthenien, A. M., & Neighbors, C. (2018). The Epidemiology of Binge Drinking Among College-Age Individuals in the United States. *Alcohol research : current reviews, 39*(1), 23-30.

Kurkalang, S., Banerjee, A., Ghoshal, N., Dkhar, H., & Chatterjee, A. (2013). Induction of chromosome instability and stomach cancer by altering the expression pattern of mitotic checkpoint genes in mice exposed to areca-nut. *BMC Cancer, 13*, 315. doi:10.1186/1471-2407-13-315

Luczak, S. E., Prescott, C. A., Dalais, C., Raine, A., Venables, P. H., & Mednick, S. A. (2014). Religious factors associated with alcohol involvement: results from the Mauritian Joint Child Health Project. *Drug Alcohol Depend, 135*, 37-44. doi:10.1016/j.drugalcdep.2013.10.028

Marissa B. Esser, P. H. C., PhD2; Zewditu Demissie, PhD2; Dafna Kanny, PhD1; Robert D. Brewer, MD1. (2017). Current and Binge Drinking Among High School Students —

United States, 1991–2015.

Marshal, M. P. (2003). For better or for worse? The effects of alcohol use on marital functioning. *Clin Psychol Rev, 23*(7), 959-997. doi:10.1016/j.cpr.2003.09.002

Mirza, S. S., Shafique, K., Vart, P., & Arain, M. I. (2011). Areca nut chewing and dependency syndrome: Is the dependence comparable to smoking? a cross sectional study. *Subst Abuse Treat Prev Policy, 6*, 23. doi:10.1186/1747-597x-6-23

Myint, S. K., Narksawat, K., & Sillabutra, J. (2016). PREVALENCE AND FACTORS INFLUENCING BETEL NUT CHEWING AMONG ADULTS IN WEST INSEIN TOWNSHIP, YANGON, MYANMAR. *Southeast Asian J Trop Med Public Health, 47*(5), 1089-1097.

NIAAA, N. I. o. A. A. a. A. (2007). Alcohol Metabolism. Retrieved from https://pubs.niaaa.nih.gov/publications/aa72/aa72.htm

NIAAA, N. I. o. A. A. a. A. (2018). Alcohol Effects on the Body. Retrieved from https://www.niaaa.nih.gov/alcohol-health/alcohols-effects-body

Oo, W., Aung, M., Soe, P., Htar Lwin, S., & Ohnmar Win, M. (2015). *Alcohol consumption among adult males in urban area of Thanlyin Township, Yangon Region, Myanmar* (Vol. 3).

Parmar, G., Sangwan, P., Vashi, P., Kulkarni, P., & Kumar, S. (2008). Effect of chewing a mixture of areca nut and tobacco on periodontal tissues and oral hygiene status. *J Oral Sci, 50*(1), 57-62.

Petti, S., & Warnakulasuriya, S. (2018). Betel quid chewing among adult male immigrants from the Indian subcontinent to Italy. *Oral Dis, 24*(1-2), 44-48. doi:10.1111/odi.12768

Power, C., Rodgers, B., & Hope, S. (1999). Heavy alcohol consumption and marital status: disentangling the relationship in a national study of young adults. *Addiction, 94*(10), 1477-1487.

Pratt, S. (2014). *The Challenge of Betel Nut Consumption to Economic Development: a Case of Honiara, Solomon Islands* (Vol. 21).

Quintero, L. A. M., Jimenez, M. V. M., Rojas-Solis, J. L., Molleda, C. B., Chilaca, A. S., & Diaz, F. J. R. (2019). Psychometric properties of the Alcohol Use Disorder Identification Test (AUDIT) in adolescents and young adults from Suthern Mexico: Alcohol Use Disorder Identification Test (AUDIT) in young Mexicans. *Alcohol*. doi:10.1016/j.alcohol.2019.05.002

Services, D. a. A. (2017). What is alcohol? Retrieved from https://www.sahealth.sa.gov.au/wps/wcm/connect/15b1ce004fe3d6969e1fbe03541ce8ed/What+is+alcohol+%2800501%29+2017.pdf?MOD=AJPERES&CACHEID=ROOTWORKSPACE-15b1ce004fe3d6969e1fbe03541ce8ed-meDa5Dp

Sloan, F. A., Malone, P. S., Kertesz, S. G., Wang, Y., & Costanzo, P. R. (2009). Racial differences in the relationship between alcohol consumption in early adulthood and occupational attainment at midlife. *Am J Public Health, 99*(12), 2261-2267. doi:10.2105/ajph.2007.127621

Tanwir, F., Altamash, M., & Gustafsson, A. (2008). Influence of betel nut chewing, dental care habits and attitudes on perceived oral health among adult Pakistanis. *Oral Health Prev Dent, 6*(2), 89-94.

Testino, G., Leone, S., Fagoonee, S., & Pellicano, R. (2018). Alcoholic liver fibrosis: detection and treatment. *Minerva Med*. doi:10.23736/s0026-4806.18.05844-5

Tsai, W. C., Chen, C. Y., Kuo, H. F., Wu, M. T., Tang, W. H., Chu, C. S., . . . Lai, W. T. (2013). Areca nut chewing and risk of atrial fibrillation in Taiwanese men: a nationwide ecological study. *Int J Med Sci, 10*(7), 804-811. doi:10.7150/ijms.5998

Tuck, A., Robinson, M., Agic, B., Ialomiteanu, A. R., & Mann, R. E. (2017). Religion, Alcohol Use and Risk Drinking Among Canadian Adults Living in Ontario. *Journal of Religion and Health, 56*(6), 2023-2038. doi:10.1007/s10943-016-0339-z

Ventura-Cots, M., Watts, A. E., Cruz-Lemini, M., Shah, N. D., Ndugga, N., McCann, P., . . . Bataller, R. (2018). Colder weather and fewer sunlight hours increase alcohol consumption and alcoholic cirrhosis worldwide. *Hepatology*. doi:10.1002/hep.30315

Wang, S. C., Tsai, C. C., Huang, S. T., & Hong, Y. J. (2003). Betel nut chewing and

related factors in adolescent students in Taiwan. *Public Health, 117*(5), 339-345. doi:10.1016/s0033-3506(03)00082-9

Warnakulasuriya, S., Trivedy, C., & Peters, T. J. (2002). Areca nut use: an independent risk factor for oral cancer : The health problem is under-recognised. *Bmj, 324*(7341), 799-800.

WHO. (2010). The Alcohol,Smoking and Substance Involvement Screening Test (ASSIST).

WHO. (2011). global_report_2011_8.2_crude_smokeless_tobacco_prevalence. Retrieved from www.who.int/.../en_tfi_global_report_2011_8.2_crude_smokeless_tobacco_prevalence

WHO. (2012). Review of Areca (Betel) Nut and Tobacco Use in the Pacific

WHO. (2014a). Global status report on alcohol and health 2014

WHO. (2014b). A global strategy to reduce harmful use of alcohol

WHO. (2018). Key facts of 2018 Retrieved from http://www.who.int/en/news-room/fact-sheets/detail/alcohol

Win, A. Z. (2015). Myanmar: An Endemic Country for Oral Cancer. *N Am J Med Sci, 7*(8), 377-378. doi:10.4103/1947-2714.163648

Witbrodt, J., Mulia, N., Zemore, S. E., & Kerr, W. C. (2014). Racial/ethnic disparities in alcohol-related problems: differences by gender and level of heavy drinking. *Alcohol Clin Exp Res, 38*(6), 1662-1670. doi:10.1111/acer.12398

Wollina, U., Verma, S., Parikh, D., & Parikh, A. (2002). [Oral and extraoral disease due to betel nut chewing]. *Hautarzt, 53*(12), 795-797. doi:10.1007/s00105-002-0413-1

Wu, I. C., Lu, C. Y., Kuo, F. C., Tsai, S. M., Lee, K. W., Kuo, W. R., . . . Ko, Y. C. (2006). Interaction between cigarette, alcohol and betel nut use on esophageal cancer risk in Taiwan. *Eur J Clin Invest, 36*(4), 236-241. doi:10.1111/j.1365-2362.2006.01621.x

Zaw, K. K., Ohnmar, M., Hlaing, M. M., Oo, Y. T., Win, S. S., Htike, M. M., . . . Thein, Z. M. (2016). Betel Quid and Oral Potentially Malignant Disorders in a Periurban Township in Myanmar. *PLoS One, 11*(9), e0162081. doi:10.1371/journal.pone.0162081

Zealand, A. A. C. o. N., & Staff, A. A. C. o. N. Z. (2012). *Alcohol: The Body and Health Effects: A Brief Overview*: Alcohol Advisory Council of New Zealand.

ANNEX (1)

Patient/ Participant Information Sheet

Title of research project … **"**PATTERNS OF USE IN ALCOHOL DRINKING AND BETEL NUTS CHEWING AMONG WORKERS OF MYITNGE TRAIN CARRIAGE AND WAGONS WORKSHOP"

Principle researcher's name Dr.Htet Myat Aung

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1. Introduction

I am Dr.Htet Myat Aung, studying Master of Public Health at Chulalongkorn University, Bangkok, Thailand. We are doing research on "**PATTERNS OF USE IN ALCOHOL DRINKING AND BETEL NUTS CHEWING AMONG WORKERS OF MYITNGE TRAIN CARRIAGE AND WAGONS WORKSHOP**". I am going to give you information and **invite you** to participate in this research. There may be some words that you do not understand. If you do not understand any word, you can ask me or other research team members at any time.

2. Purpose

The purpose of this study is to find out the patterns of use in alcohol drinking and betel nuts chewing among workers who are working in Myitnge Train Carraige and Wagons Workshop, which is located in Myitnge Township,Mandalay.

3. Participant selection

Inclusion criteria	Exclusion criteria
Workers who have ever drink alcohol and have ever chew betel nuts and also willing to participate in this study.	Workers who have serious illness.(e.g - cancer)

You are being invited to take part in this research because you have ever drink alcohol and have ever chew betel nuts. If you are willing to participate in this study, oral and written consent will be given. You can also refuse to participate in this study if you feel uneasy or discomfort.

4. Voluntary Participation

Your participation in this research is entirely voluntary. It is your choice whether to participate or not. It will not affect any of your work even if you choose not to participate. You may change your mind later and stop participating even if you agreed earlier.

5. Procedures and Protocol

The research team will explain verbally about purpose of research(research objectives), research procedure, detailed information about questionnaires and ethics about conducting research. If you agree to participate, we will ask you to sign in the informed consent form. After that, the researchers will interview the participants. The interview will be about pattern of alcohol drinking and betel nuts chewing. The interview will takes about 20 minutes. The

interview will take place in the office room of the workshop. Also, there will be no time compensation because the interview will only takes place during lunch-time and break.

6. Risks and discomfort

You may feel uneasy or somewhat unhappy with some questions and you have right not to answer those questions. This include your right to withdraw from the research project at any moment without advanced notification. Your decision not to take part in or withdraw from this project will not affect you in anyway.

7. Benefits

Participation in this study will not benefit you directly but your participation will help us to assess the patterns of use in alcohol drinking and betel nuts chewing of the workers of Myitnge Train Carriage and Wagons Workshop.

8. Confidentiality

Your personal information will be kept and will not be revealed to the public as information about an individual but the research result will be report as a whole image. People who will have the right to assess your information will be those who are involved in this research and the Research Ethics Review Committee for Research Involving Human Subjects Only.

9. Who to Contact

If you have any questions or any complaints about this study, or the researcher does not follow or treat the participant according to these items, you can contact to Dr.Htet Myat Aung, Principal researcher, Master of Public Health student, at College of Public Health Sciences, Chulalongkorn University, Tel: +66 633746284, Email-dr.htetmyataung.92@gmail.com. You can also make report to the Research Ethics Review Committee, Chulalongkorn University (RECCU), Jamjuree 1 Building, 2nd floor, 254 Phayathai Road, Pathuwam District, Bangkok 10330, Thailand, Tel/Fax: +662218-3202 Email: eccu@chula.ac.th at anytime if you have questions or complaints about this study or the researcher does not treat the participant according to the indications above.

ANNEX (2)

Informed Consent Form

Address

Date...../Month...../Year.....

Title: "PATTERNS OF USE IN ALCOHOL DRINKING AND BETEL NUTS CHEWING AMONG WORKERS OF MYITNGE TRAIN CARRIAGE AND WAGONS WORKSHOP"

Principle researcher's name: Mr.Htet Myat Aung

Address in Thailand: 268 Chulalongkorn Soi 9, Jaratmung Road, Wangmai, Pathumwan, Bangkok, Thailand +66 633746284

Address in Myanmar: 213, Ahlone Road, Ahlone Township, Yangon

+95 95158815

I have been notified of the details of the research rationale and the research objectives, details of the stages that I must go through or must be treated, as well as the risks/dangers and the benefits to be obtained from this research. I have thoroughly read the details in the document providing information for the research participants and have received explanations from the researcher so that I am able clearly to understand the information.

I therefore apply to take part in this research project, as specified in the document providing information for research participants. Concerning this, I consent to answer the questionnaire about patterns of alcohol drinking and betel nuts chewing. I have had the opportunity to ask questions about it and any questions that I have asked have been answered to my satisfaction. I have the right to withdraw from the research at any time according without having to state the reason. This withdrawal will in no way negatively affect me.

I have been assured and confirmed that the researcher will treat me in accordance with what is specified in the document providing information for the

research participants and any information about me will be treated by the researcher as confidential. The research will be presented as a whole picture only. No information in the report will lead to identifying me as an individual.

If I am not treated according to what is specified in the document providing information for the research participants, I have the right to file a complaint to the Research Ethics Review Committee, Chulalongkorn University (RECCU), Jamjuree 1 Building, 2nd floor, 254 Phayathai Road, Pathuwam District, Bangkok 10330, Thailand, Tel/Fax: +662218-3202 Email: eccu@chula.ac.th at anytime.

I have signed my name hereto in the presence of a witness. I have also received a copy of the document providing information for the research participants and a copy of the letter of consent.

Signature……

(……)

Prinicipal researcher

Signature……..

(……..)

Research participant

Signature…….

(…….....)

Witness

ANNEX (3)

Questionnaire

Participant Number _____

Section (1) Socio-demographic factors

1.1 Age _____

1.2 Marital Status (a) Single (b) Married (c) Divorced (d) Widowed (e) Others specify ……

1.3 Education (a) illiteracy (b) Primary school (c) Middle school (d) High school

(e) College and higher education (f) Others specify ……

1.4 Religion (a) Buddhist (b) Christian (c) Muslim (d) Hindu (e) Others specify……

1.5 Ethnicity (a) Myanmar (b) Kayin (c) Shan (d) Others specify ……..

1.6 Income _____ kyats per month

Section (2) History and Pattern of Alcohol Drinking

2.1 Have you ever drunk alcohol in your lifetime? (a) Yes (b) No, **skip to section (3)**

2.2 Age of first drinking _____ years old

2.3 Why did you start drinking alcohol? ***(Choose only one answer)***

	Yes	No
a. Problems in job, relationship, work		
b. For experiment		
c. Encouraged by boss or co-workers		
d. Encouraged by family members or friends		
e. Events (e.g-celebration, festivals)		
f. Others specify……		

2.4 How often do you drink alcohol since you started drinking?

(a) Monthly or less (b) 2- 4 times a month (c) 2-3 times a week (d) 4 or more times a week

2.5 How many drinks do you have in single occasion since you started drinking?

……..ml/one time drink

(1 can of beer = 330ml, 1 glass of wine= 142 ml, 1 unit of spirit = 43ml)

2.6 How often do you drink the following type of alcohol beverage?

	Lifetime		Past 12 months	
Type of alcohol	Yes	No	Yes	No
Beer				
Whiskey				
White Spirit				
Rum				
Gin				
Home brew				
Wine				

2.7 In the past 12 months…

(a).How many days do you drink in a month?	……..days per month			
(b).How much do you drink in single occasion?	……bottle or drinks			
(c).What time do you usually drink alcohol in a day? **(Choose one answer)**	Morning	Afternoon	Evening	Night
(d).How much do you spend money on alcohol in a month	……..Kyats			

2.8 When do you usually drink alcohol during the past 12 months?

(a) Problems in family, relationship, work (b) Events (e.g-festivals,celebration..etc) (c) Others specify_____

2.9 Where do you mostly drink alcohol?

(a) Home (b) Work (c)Restaurants and bars (d) Others specify_____

2.10 Drinking history among family members (who live together), friends and co-workers

Family members,friends and co-workers	No drink	Drinking occasionally	Always drink
Parents			
Siblings			
Family members who live together (e.g-uncle,aunty)			
Friends or co-workers			
Others			

2.11 How often during the last year have you been unable to remember what happened the night before because you had been drinking?

……

2.12 How often during the last year have you had a feeling of guilt or remorse after drinking?

…….

2.13 (A) Do you ever have traffic accidents or get traffic injuries because of alcohol drinking?

If Yes, tell me when did this happen and why?

……..

(B) Do you ever got into a fight because of alcohol drinking?

If Yes, tell me when did this happen and why?

……..

(C) Do you ever have liver disease because of alcohol drinking?

If Yes, tell me when did this happen and why?

……..

(D) Did you have pancreatic disease because of alcohol drinking?

If Yes, tell me when did this happen and why?

……..

2.14 Have you ever been hospitalized because of alcohol related problems or diseases?

(a) Yes (b) No

If Yes, why did you get hospitalized and when ?

……

2.15 Has a family member or friend or a doctor been concerned about your drinking beacause of alcohol related injuries/diseases/problems and suggested you to cut down?

(a) Yes (b) No

If Yes, when did this happened and why?

……

Section (3) History and Pattern of Betel Nuts Chewing

3.1 Do you ever chew betel nuts in your lifetime? (a) Yes (b) No (Go to ASSIST questions)

3.2 Age of first chewing betel nuts _____
years old

3.3 What is the main reason that started chewing betel nuts? (Choose only one answer)

(a) Problems in family,relationships,works (b) For experiment (c) Encouraged by boss or co-workers

(d) Encouraged by family members or friends (e) Events (e.g-celebration,festivals) (f) Others

3.4 How often do you chew betel nuts since you started chewing?

(a)Monthly or less (b) 2- 4 times a month (c) 2-3 times a week (d) 4 or more times a week

3.5 How many packs do u chew in single occasion since you started chewing?

_____

3.6 How often do you chew the following type of betel nuts and tobacco?

	Lifetime		Past 12 months	
Type of betel nuts	Yes	No	Yes	No
Betel nuts without tobacco				
"92" tobacco				
"Parajet" tobacco				
"45" tobacco				
"100" tobacco				
"Signal" tobacco				
"Star" tobacco				
Betel leaves(steamed)				

3.7 In the past 12 months…

(a).How many days do you chew in a month?	days per month			
(b).How much do you chew in single occasion?	packs			
(c).What time do you usually chew betel nuts in a day? **(Choose one answer)**	Morning	Afternoon	Evening	Night
(d).How much do you spend money on betel nuts in a month?	Kyats			

3.8 When do you usually chew betel nuts?

(a) Problems in family,relationship,work (b) Events (e.g-festivals,celebration..etc)

(c) Others specify……

3.9 Where do you mostly chew betel nuts?

(a) Home (b) Work (c)Restaurants and bars (d) Others specify……..

3.10 Betel nuts chewing history among family members (who live together), friends and co-workers

Family members	No chewing	Chewing occasionally	Always chew
Parents			
Siblings			
Family members who live together (e.g-uncle,aunty)			
Friends or co-workers			
Others			

3.11 How often during the last year have you had a feeling of guilt or remorse after chewing betel nuts?

……..

3.12 (A) Do you ever have bad mouth because of betel nuts chewing?

If Yes, tell me when did this happen and why?

……..

(B) Do you ever have unhealthy gum and disease because of betel nuts chewing?

If Yes, tell me when did this happen and why?

……..

(C) Do you ever have high blood pressure and palpitation because of betel nuts chewing?

If Yes, tell me when did this happen and why?

……..

(D) Do you ever have oral cancer because of betel nuts chewing?

If Yes, tell me when did this happen and why?

……..

3.13 Have you ever been hospitalized because of alcohol related problems or diseases?

(a) Yes (b) No

If Yes, Which problems or diseases?

……..

3.14 Has a family member or friend or a doctor been concerned about your drinking because of alcohol related injuries/diseases/problems and suggested you to cut down?

(a) Yes (b) No

If Yes, when did this happened and why?

……

3.15 Do you have habits of drinking alcohol after you finished chewing betel nuts?

(a)Yes (b)No

If yes, when did you have habits of drinking alcohol after chewing betel nuts ?

……

WHO - ASSIST V3.0

INTERVIEWER ID		COUNTRY		CLINIC	
PATIENT ID		DATE			

INTRODUCTION *(Please read to patient)*

Thank you for agreeing to take part in this brief interview about alcohol, tobacco products and other drugs. I am going to ask you some questions about your experience of using these substances across your lifetime and in the past three months. These substances can be smoked, swallowed, snorted, inhaled, injected or taken in the form of pills (show drug card).

Some of the substances listed may be prescribed by a doctor (like amphetamines, sedatives, pain medications). For this interview, we will not record medications that are used as prescribed by your doctor. However, if you have taken such medications for reasons other than prescription, or taken them more frequently or at higher doses than prescribed, please let me know. While we are also interested in knowing about your use of various illicit drugs, please be assured that information on such use will be treated as strictly confidential.

NOTE: BEFORE ASKING QUESTIONS, GIVE ASSIST RESPONSE CARD TO PATIENT

Question 1

(if completing follow-up please cross check the patient's answers with the answers given for Q1 at baseline. Any differences on this question should be queried)

In your life, which of the following substances have you ever used? ***(NON-MEDICAL USE ONLY)***	**No**	**Yes**
a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	3
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	3
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	3

d. Cocaine (coke, crack, etc.)	0	3
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	3
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	3
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	3
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	3
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	3
j. Betel nuts	0	3

	If "No" to all items, stop interview.
Probe if all answers are negative:	
"Not even when you were in school?"	*If "Yes" to any of these items, ask Question 2 for each substance ever used.*

Question 2

In the past three months, how often have you used [redacted] the substances you mentioned *(FIRST DRUG, SECOND DRUG, ETC)*?	**Never**	**Once or Twice**	**Monthly**	**Weekly**	**Daily or almost daily**
a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	2	3	4	6
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	2	3	4	6
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	2	3	4	6
d. Cocaine (coke, crack, etc.)	0	2	3	4	6
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	2	3	4	6
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	2	3	4	6
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	2	3	4	6
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	2	3	4	6
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	2	3	4	6
j. Betel nuts	0	2	3	4	6

If "Never" to all items in Question 2, skip to Question 6.

If any substances in Question 2 were used in the previous three months, continue with Questions 3, 4 & 5 for each substance used.

Question 3

During the past three months, how often have you [redacted] **had a strong desire or urge to use** ***(FIRST DRUG, SECOND DRUG, ETC)?***	**Never**	**Once or Twice**	**Monthly**	**Weekly**	**Daily or almost daily**
a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	3	4	5	6
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	3	4	5	6
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	3	4	5	6
d. Cocaine (coke, crack, etc.)	0	3	4	5	6
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	3	4	5	6
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	3	4	5	6
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	3	4	5	6
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	3	4	5	6
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	3	4	5	6
j. Betel nuts	0	3	4	5	6

Question 4

During the past three months, how often has your [redacted] use of *(FIRST DRUG, SECOND DRUG, ETC)* led to health, social, legal or financial problems?	**Never**	**Once or Twice**	**Monthly**	**Weekly**	**Daily or almost daily**
a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	4	5	6	7
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	4	5	6	7
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	4	5	6	7
d. Cocaine (coke, crack, etc.)	0	4	5	6	7
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	4	5	6	7
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	4	5	6	7
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	4	5	6	7
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	4	5	6	7
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	4	5	6	7
j. Betel nuts	0	4	5	6	7

Question 5

During the past three months, how often have you failed [redacted] to do what was normally expected of you because of your use of *(FIRST DRUG, SECOND DRUG, ETC)*?	**Never**	**Once or Twice**	**Monthly**	**Weekly**	**Daily or almost daily**
a. Tobacco products					
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	5	6	7	8
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	5	6	7	8
d. Cocaine (coke, crack, etc.)	0	5	6	7	8
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	5	6	7	8
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	5	6	7	8
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	5	6	7	8
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	5	6	7	8
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	5	6	7	8
j. Betel nuts	0	5	6	7	8

Ask Questions 6 & 7 for all substances ever used (i.e. those endorsed in Question 1)

Question 6

Has a friend or relative or anyone else ever [redacted] **expressed concern about your use of** ***(FIRST DRUG, SECOND DRUG, ETC.)?***	**No,Never**	**Yes,in the past 3 months**	**Yes,but not in the past 3 months**
a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	6	3
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	6	3
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	6	3
d. Cocaine (coke, crack, etc.)	0	6	3
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	6	3
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	6	3
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	6	3
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	6	3
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	6	3
j. Betel nuts	0	6	3

Question 7

Have you ever tried and failed to control, cut down or stop using *(FIRST DRUG, SECOND DRUG, ETC.)?*	No, Never	Yes, in the past 3 months	Yes, but not in the past 3 months
a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	6	3
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	6	3
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	6	3
d. Cocaine (coke, crack, etc.)	0	6	3
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	6	3
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	6	3
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	6	3
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	6	3
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	6	3
j. Other – specify:	0	6	3

Question 8

	No, Never	Yes,in the past 3 months	Yes,but not in the past 3 months
Have you ever used any drug by injection? [redacted] ***(NON-MEDICAL USE ONLY)***	0	2	1

How to calculate a specific substance involvement score.

For each substance (labelled a. to j.) add up the scores received for questions 2 through 7 inclusive. Do not include the results from either Q1 or Q8 in this score. For example, a score for cannabis would be calculated as: **Q2c + Q3c + Q4c + Q5c + Q6c + Q7c**

Note that Q5 for tobacco is not coded, and is calculated as: **Q2a + Q3a + Q4a + Q6a + Q7a**

The type of intervention is determined by the patient's specific substance involvement score

	Record specific substance score	no intervention	receive brief intervention	more intensive treatment *
a. tobacco		0 - 3	4 - 26	27+
b. alcohol		0 - 10	11 - 26	27+
c. cannabis		0 - 3	4 - 26	27+
d. cocaine		0 - 3	4 - 26	27+
e. amphetamine		0 - 3	4 - 26	27+
f. inhalants		0 - 3	4 - 26	27+
g. sedatives		0 - 3	4 - 26	27+
h. hallucinogens		0 - 3	4 - 26	27+
i. opioids		0 - 3	4 - 26	27+
j. betel nuts		0 - 3	4 - 26	27+

NOTE: *Further assessment and more intensive treatment may be provided by the health professional(s) within your primary care setting, or, by a specialist drug and alcohol treatment service when available.

B. WHO ASSIST V3.0 RESPONSE CARD FOR PATIENTS

Response Card - substances

a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)

b. Alcoholic beverages (beer, wine, spirits, etc.)

c. Cannabis (marijuana, pot, grass, hash, etc.)

d. Cocaine (coke, crack, etc.)

e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)

f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)

g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)

h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)

i. Opioids (heroin, morphine, methadone, codeine, etc.)

j. Betel nuts

C. ALCOHOL, SMOKING AND SUBSTANCE INVOLVEMENT SCREENING TEST (WHO ASSIST V3.0) FEEDBACK REPORT CARD FOR PATIENTS

Name_____ Test Date _____

Specific Substance Involvement Scores

Substance	Score	Risk Level
a. Tobacco products		0-3 Low 4-26 Moderate 27+ High
b. Alcoholic Beverages		0-10 Low 11-26 Moderate 27+ High
c. Cannabis		0-3 Low 4-26 Moderate 27+ High
d. Cocaine		0-3 Low 4-26 Moderate 27+ High
e. Amphetamine type stimulants		0-3 Low 4-26 Moderate 27+ High
f. Inhalants		0-3 Low 4-26 Moderate 27+ High
g. Sedatives or Sleeping Pills		0-3 Low 4-26 Moderate 27+ High
h. Hallucinogens		0-3 Low 4-26 Moderate 27+ High
i. Opioids		0-3 Low 4-26 Moderate 27+ High
j. Other - specify		0-3 Low 4-26 Moderate 27+ High

a. tobacco	Your risk of experiencing these harms is:..... Low Moderate High (tick one)
	Regular tobacco smoking is associated with:
	Premature aging, wrinkling of the skin
	Respiratory infections and asthma
	High blood pressure, diabetes
	Respiratory infections, allergies and asthma in children of smokers
	Miscarriage, premature labour and low birth weight babies for pregnant women
	Kidney disease
	Chronic obstructive airways disease
	Heart disease, stroke, vascular disease
	Cancers

b. alcohol	Your risk of experiencing these harms is:..... Low Moderate High (tick one)
	Regular excessive alcohol use is associated with:
	Hangovers, aggressive and violent behaviour, accidents and injury
	Reduced sexual performance, premature ageing
	Digestive problems, ulcers, inflammation of the pancreas, high blood pressure
	Anxiety and depression, relationship difficulties, financial and work problems
	Difficulty remembering things and solving problems
	Deformities and brain damage in babies of pregnant women
	Stroke, permanent brain injury, muscle and nerve damage
	Liver disease, pancreas disease
	Cancers, suicide

c. cannabis	Your risk of experiencing these harms is:……	Low	Moderate (tick one)	High
	Regular use of cannabis is associated with:			
	Problems with attention and motivation			
	Anxiety, paranoia, panic, depression			
	Decreased memory and problem solving ability			
	High blood pressure			
	Asthma, bronchitis			
	Psychosis in those with a personal or family history of schizophrenia			
	Heart disease and chronic obstructive airways disease			
	Cancers			

d. cocaine	Your risk of experiencing these harms is:…. Low Moderate High (tick one)
	Regular use of cocaine is associated with:
	Difficulty sleeping, heart racing, headaches, weight loss
	Numbness, tingling, clammy skin, skin scratching or picking
	Accidents and injury, financial problems
	Irrational thoughts
	Mood swings - anxiety, depression, mania
	Aggression and paranoia
	Intense craving, stress from the lifestyle
	Psychosis after repeated use of high doses
	Sudden death from heart problems

e. amphetamine type stimulants	Your risk of experiencing these harms is:……. Low Moderate High (tick one)
	Regular use of amphetamine type stimulants is associated with:
	Difficulty sleeping, loss of appetite and weight loss, dehydration
	jaw clenching, headaches, muscle pain
	Mood swings –anxiety, depression, agitation, mania, panic, paranoia
	Tremors, irregular heartbeat, shortness of breath
	Aggressive and violent behaviour
	Psychosis after repeated use of high doses
	Permanent damage to brain cells
	Liver damage, brain haemorrhage, sudden death (ecstasy) in rare situations

f. inhalants	Your risk of experiencing these harms is:……. Low Moderate High (tick one)
	Regular use of inhalants is associated with:
	Dizziness and hallucinations, drowsiness, disorientation, blurred vision
	Flu like symptoms, sinusitis, nosebleeds
	Indigestion, stomach ulcers
	Accidents and injury
	Memory loss, confusion, depression, aggression
	Coordination difficulties, slowed reactions, hypoxia
	Delirium, seizures, coma, organ damage (heart, lungs, liver, kidneys)
	Death from heart failure

g. sedatives	Your risk of experiencing these harms is:	Low	Moderate (tick one)	High
	Regular use of sedatives is associated with:			
	Drowsiness, dizziness and confusion			
	Difficulty concentrating and remembering things			
	Nausea, headaches, unsteady gait			
	Sleeping problems			
	Anxiety and depression			
	Tolerance and dependence after a short period of use.			
	Severe withdrawal symptoms			
	Overdose and death if used with alcohol, opioids or other depressant drugs.			

h. hallucinogens	Your risk of experiencing these harms is:……..	Low	Moderate (tick one)	High
	Regular use of hallucinogens is associated with:			
	Hallucinations (pleasant or unpleasant) – visual, auditory, tactile, olfactory			
	Difficulty sleeping			
	Nausea and vomiting			
	Increased heart rate and blood pressure			
	Mood swings			
	Anxiety, panic, paranoia			
	Flash-backs			
	Increase the effects of mental illnesses such as schizophrenia			

i. opioids	Your risk of experiencing these harms is:	Low	Moderate (tick one)	High
	Regular use of opioids is associated with:			
	Itching, nausea and vomiting			
	Drowsiness			
	Constipation, tooth decay			
	Difficulty concentrating and remembering things			
	Reduced sexual desire and sexual performance			
	Relationship difficulties			
	Financial and work problems, violations of law			
	Tolerance and dependence, withdrawal symptoms			
	Overdose and death from respiratory failure			

j. betel nuts	Your risk of experiencing these harms is:	Low	Moderate (tick one)	High
	Regular use of opioids is associated with:			
	Itching, nausea and vomiting			
	Teeth and gum discolouration			
	Tooth decay			
	Mouth ulcer,dental caries			
	Drowsiness			
	Difficulty concentrating and remembering things			
	Financial and work problems			
	Tolerance and dependence, withdrawal symptoms			
	Oral squamous cell carcinoma, oral submucous fibrosis			

သုတေသနတွင် ပါဝင်မည့်ဝန်ထမ်း၏ သတင်းအချက်အလက်များ

သုတေသနစာတမ်းခေါင်းစဉ်	"မြစ်ငယ်ရထားလူစီးတွဲနှင့်ကုန်တင်တွဲစက်ရုံရှိ ဝန်ထမ်းများ၏ အရက်သောက်သည့်ပုံစံနှင့် ကွမ်းယာစားသည့်ပုံစံ"
သုတေသနပြုသူအမည်	ဒေါက်တာထက်မြတ်အောင်
ရာထူး	ပြည်သူ့ကျန်းမာရေးပညာမဟာဘွဲ့ ကျောင်းသား
နေထိုင်ရာလိပ်စာ(ထိုင်း)	အမှတ်(၂၆၈)၊ ချူလာလောင်ကွန်း ၉လမ်း၊ ဂျာရတ်မန်လမ်း၊ ဝမ်းမိုင်၊ ပသူဝမ်းဘန်ကောက်မြို့၊ ထိုင်းနိုင်ငံ၊ ၀၆၃၃၇၄၆၂၈၄
နေထိုင်ရာလိပ်စာ(မြန်မာ)	အမှတ်(၂၁၃)၊ အလုံလမ်း၊ အလုံမြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီး၊ မြန်မာ၊ ၀၉-၅၁၅၈၁၀၅၅

အပိုင်း(၁) သုတေသနအချက်အလက်များ

(၁)နိဒါန်းဆက်

ကျန်တော်သည် ပြည်သူ့ကျန်းမာရေးသိပ္ပံဌာန၊ ချူလာလောင်ကွန်းတက္ကသိုလ်တွင် ပြည်သူ့ ကျန်းမာရေးမဟာဘွဲ့ အတွက် တက်ရောက်လေ့လာနေသူ ဖြစ်ပါသည်။ ကျန်တော်သည် "မြစ်ငယ်ရထားလူစီးတွဲနှင့်ကုန်တင်တွဲစက်ရုံရှိ ဝန်ထမ်းများ၏ အရက်သောက်သည့်ပုံစံနှင့်ကွမ်းယာစားသည့်ပုံစံ"ကို သုတေသနလုပ်ဆောင်မည် ဖြစ်ပါသည်။ သင့်ကို ကျန်တော်၏ သုတေသနတွင် ပါဝင်ရန် ဖိတ်ခေါ်အပ်ပါသည်။ နားမလည်သော စကားရပ်များရှိပါက ကျွန်ုပ်သို့ မဟုတ် သုတေသနတွင်ပါဝင်သော ဝန်ထမ်းတစ်ဦးဦးအား အချိန်မရွေးမေးမြန်းနိုင်ပါသည်။

(၂) သုတေသနလုပ်ခြင်း ရည်ရွယ်ချက်

ဤသုတေသနရည်ရွယ်ချက်မှာ မြစ်ငယ်ရထားလူစီးတွဲနှင့် ကုန်တင်တွဲစက်ရုံရှိ ဝန်ထမ်းများ၏ အရက်သောက်သည့်ပုံစံနှင့် ကွမ်းယာစားသည့်ပုံစံကို သုတေသန လုပ်ဆောင်မည်ဖြစ်ပါသည်။ ဤသို့သုတေသနပြုလုပ်ခြင်းဖြင့် ဝန်ထမ်းများ၏ ကျန်းမာရေးစောင့်ရှောက်မှု ပိုမိုတိုးတက်လာစေရန် ရည်ရွယ်ပါသည်။

(၃) သုတေသနအတွင်း လုပ်ဆောင်မှုအမျိုးအစား

ဤသုတေသနတွင် မြစ်ငယ်ရထားလူစီးတွဲနှင့်ကုန်တင်တွဲစက်ရုံရှိ ဝန်ထမ်းများအား တွေ့ဆုံ၍ မေးခွန်းလွှာဖြင့် မေးမြန်းခြင်းကို ပြုလုပ်မည်ဖြစ်ပါသည်။ မေးခွန်းလွှာဖြင့် မေးမြန်းခြင်းမှာ ၁၅မိနစ်ခန့် ကြာမြင့်မည်ဖြစ်ပါသည်။

(၄) သုတေသနတွင် ပါဝင်သူများကို ရွေးချယ်ခြင်း

သင်သည် မြစ်ငယ်ရထားလူစီးတွဲနှင့် ကုန်တင်တွဲစက်ရုံရှိ ဝန်ထမ်းတစ်ဦးဖြစ်သည့် အတွက် သုတေသနတွင် ပါဝင်ရန် ဖိတ်ခေါ်ခြင်းဖြစ်ပါသည်။

(၅) မိမိဆန္ဒအရ သုတေသနတွင် ပါဝင်ခြင်း

ဤသုတေသနတွင် ပါဝင်ခြင်းမှာ သင်၏လွတ်လပ်သော သဘောဆန္ဒအရသာ ဖြစ်ပါသည်။ ပါဝင်ခြင်းမရှိပါကလဲ သင့်ကိုမည်သို့မျှ ထိခိုက်စေမည်မဟုတ်ပါ။ ဤသုတေသနတွင် ပါဝင်ရန်သဘောတူခဲ့သော်လည်း အချိန်မရွေး အကြောင်းပြချက် မလိုဘဲ နုတ်ထွက်ခွင့်ရှိပါသည်။

(၆) သုတေသနလုပ်ငန်းလုပ်ဆောင်ချက်

သင့်ကို အရက်သောက်သည့်ပုံစံနှင့်ကွမ်းယာစားသည့်ပုံစံများကို မေးခွန်းလွှာအဖြစ် မေးမြန်းခြင်းတွင် ပါဝင်ရန် ဖိတ်ခေါ်ပါသည်။ ထိုသို့မေးမြန်းခြင်းမှာ ၁၅မိနစ်ခန့် ကြာမြင့်မည်ဖြစ်ပါသည်။ သင်ဖြေဆိုသည့်အကြောင်းအရာများကို လျို့ဝှက်စွာ စောင့်ထိန်းမည်ဖြစ်ပြီး သုတေသနအဖွဲ့ဝင်များမှလွဲ၍ အခြားသူများကို သိရှိခွင့် ပေးမည်မဟုတ်ပါ။

(၇) ကိုယ်စိတ်အနှောင့်အယှက်ဖြစ်ခြင်း

အကယ်၍ ဤသုတေသနတွင် ပါဝင်သည့်မေးခွန်းများသည် ပုဂ္ဂိုလ်ရေး ဆန်လွန်းခြင်း (သို့မဟုတ်) သင့်ကို စိတ်အနှောင့်အယှက်ဖြစ်စေပါက ထိုမေးခွန်း များကို မဖြေဆိုဘဲ နေနိုင်ပါသည်။ ထို့အပြင် ဤသုတေသနမှလည်း နုတ်ထွက် နိုင်ပါသည်။

(၈) အကျိုးကျေးဇူး

ဤသုတေသနတွင် ပါဝင်ခြင်းဖြင့် သင့်အတွက် တိုက်ရိုက်အကျိုးကျေးဇူးမရနိုင်ပါ။ သို့သော် ဤသုတေသနတွင် ပါဝင်ခြင်းအားဖြင့် မြစ်ငယ်ရထားလူစီးတွဲနှင့် ကုန်တင်တွဲစက်ရုံရှိ ဝန်ထမ်းများ၏ အရက်သောက်သည့်ပုံစံနှင့်ကွမ်းယာစားသည့် ပုံစံများကို လေ့လာသိရှိနိုင်ပါသည်။ ထို့အပြင် ဤသုတေသနမှ သင်၏ အရက်သောက်သည့်ပုံစံနှင့်ကွမ်းယာစားသည့်ပုံစံများကို သိရှိနိုင်ပါသည်။ ဤသို့ သိရှိခြင်းအားကြောင့် အနာဂတ်တွင် သင်၏ အရက်သောက်သည့်ပုံစံနှင့် ကွမ်းယာ စားသည့်ပုံစံများကို ပြုပြင်ပြောင်းလဲနိုင်ပါသည်။

(၉) လျှို့ဝှက်ထားရှိမှု

ဤသုတေသနဆောင်ရွက်ခြင်းကို အခြားသူများက သတိပြုမိကောင်းပြုမိနိုင်ပြီး မေးမြန်း ခြင်းမျိုးရှိနိုင်ပါသည်။ ကျန်းမာရေးနှင့်ဆိုင်သော လုပ်ငန်းတစ်ခုအဖြစ်သာ အသိပေးမည်ဖြစ်ပါသည်။ သုတေသနလုပ်ငန်းတစ်ခုလုံးအကြောင်းကို သိရှိကြမည် မဟုတ်ပါ။ သင်ဖြေကြားပေးလိုက်သော အကြောင်းအရာများကိုလည်း သုတေသန အဖွဲ့ဝင်များမှလွဲ၍ အခြားမည်သူမျှ သိရှိကြမည်မဟုတ်ပါ။ အကြောင်းအရာ အချက်အလက်များကိုလည်း သုတေသနအဖွဲ့ ဝင်များမှလွဲ၍ အခြားမည်သူနှင့်မျှ ပြောဆိုခြင်းပြုမည်မဟုတ်ပါ။ အကြောင်းအရာအချက်အလက်များကို အမည်ဖြင့် မမှတ်ဘဲဂဏန်းအမှတ်အသားဖြင့်သာ မှတ်ပါမည်။ ၎င်းအမှတ်အသားများကိုလည်း သုတေသနအဖွဲ့ ဝင်များကသာ သိကြမည်ဖြစ်ပြီး အကြောင်းအရာများကို လုံခြုံစွာ သော့ခတ်သိမ်းဆည်းထားမည်ဖြစ်ပါသည်။

(၁၀) ဆက်သွယ်ရန်

သင့်တွင် အခြားမေးမြန်းလိုသည့် မေးခွန်းများရှိလျှင်သော်လည်းကောင်း၊သုတေသ နစစ်တမ်းကောက်ယူသူများသည် အထက်ပါအချက်အလက်များအား မလိုက်နာ လျှင်သော်လည်းကောင်း၊ အဓိကသုတေသနပြုသူ၏ အထက်ပါလိပ်စာနှင့် အချက်အလက်များကို ဆက်သွယ်နိုင်ပါသည်။ (သို့မဟုတ်) ချူလာလောင်ကွန်း တက္ကသိုလ်လူကျင့်ဝတ်ဆိုင်ရာအဖွဲ့အစည်း၊ ဂျုန်ဂျူရီအဆောက်အအုံ(၁)၊ဒုတိယ အထပ်၊ ဖရောထိုင်းလမ်း၊အမှတ်(၂၅၄)၊ဘန်ကောက်မြို့၊ ဖုန်း - ၀၆၂၂၁၈၃၀၂၊

လိပ်စာ.....

ရက်စွဲ.....

ကုဒ်နံပါတ်.....

"မြစ်ငယ်ရထားလူစီးတွဲနှင့် ကုန်တင်တွဲစက်ရုံရှိ ဝန်ထမ်းများ၏ အရက်သောက်သည့် ပုံစံနှင့်ကွမ်းယာစားသည့်ပုံစံများကို လေ့လာသောသုတေသန"(သဘောတူညီချက် ပုံစံ)

ကျွန်ုပ်သည် "မြစ်ငယ်ရထားလူစီးတွဲနှင့် ကုန်တင်တွဲစက်ရုံရှိ ဝန်ထမ်းများ၏ အရက် သောက်သည့်ပုံစံနှင့် ကွမ်းယာစားသည့်ပုံစံများကို လေ့လာသောသုတေသန"တွင် ပါဝင်ရန် ဖိတ်ခေါ်ခြင်းခံရပါသည်။ သုတေသနတွင် ပါဝင်ခြင်းဖြင့် မည်သည့်ဆိုးကျိုး အန္တရာယ်မျှ မရှိကြောင်းကိုလည်း သိရှိနားလည်ပြီးဖြစ်ပါသည်။ ထို့အပြင် ဤသုတေသနတွင် ပါဝင်ခြင်းအားဖြင့် ကျွန်ုပ်၏ အရက်သောက်သည့်ပုံစံနှင့် ကွမ်းယာစားသည့် ပုံစံကို သိရှိနိုင်ကြောင်းနားလည်ပြီးဖြစ်ပါသည်။ ကျွန်ုပ်သည် ရှေ့မှ အချက်အလက်များကို ဖတ်ရှုပြီးဖြစ်သည် (သို့မဟုတ်) ကျွန်ုပ်အား ဖတ်ပြပြီးဖြစ်သည်။ ကျွန်ုပ်တွင် မေးခွန်းမေးပိုင်ခွင့်နှင့် ထိုမေးခွန်းများကို ကျွန်ုပ်ကျေနပ်သည်အထိ ဖြေကြားပြီးဖြစ်သည်။ ကျွန်ုပ်သည် သုတေသနတွင် မိမိဆန္ဒအလျောက် ပါဝင်ရန်သဘောတူပါသည်။ ဤသုတေသနလုပ်ငန်းမှ အချိန်မရွေးနုတ်ထွက်ခွင့်ရှိပြီး၊ ယင်းသို့နုတ်ထွက်ခြင်းကြောင့် ကျွန်ုပ်ကို ထိခိုက် စေခြင်းမရှိကြောင်းနားလည်ပြီးဖြစ်ပါသည်။ အကယ်၍ ကျွန်ုပ်သည် သုတေသန သတင်းအချက်အလက်တွင် ပါဝင်သည့်အတိုင်း အဆက်ဆံခံရခြင်းမရှိပါက ချူလာလောင်ကွန်းတက္ကသိုလ် လူ့ကျင့်ဝတ်ဆိုင်ရာအဖွဲ့အစည်း၊ ဂျန်ဂျူရီ အဆောက်အအုံ(၁)၊ ဒုတိယထပ်၊ ဖရာထိုင်းလမ်း၊ အမှတ်(၂၅၄)၊ ဘန်ကောက်မြို့၊ ဖုန်း-၆၆၂၂၁၈၃၂၊ email – eccu@chula.ac.th သို့ တိုင်ကြားနိုင်ပါသည်။

ပါဝင်မည့်သူအမည်	.....	သက်သေ၏အမည်	.....
ပါဝင်မည့်သူလက်မှတ်	.....	သက်သေ၏လက်မှတ်	.....
နေ့စွဲ	.....	နေ့စွဲ	.....

သုတေသီ၏အမည် .....

သုတေသီ၏လက်မှတ် .....

နေ့စွဲ .....

မေးခွန်းပုံစံ

အခန်း(၁) ကိုယ်ရေးရာဇဝင်

၁. အသက် _____

၂.အိမ်ထောင်ရေးအခြေအနေ (က) အိမ်ထောင်မရှိ (ခ) အိမ်ထောင်ရှိ (ဂ)အိမ်ထောင်ကွဲ
(ဃ) မုဆိုးဖို/မ

၃.ပညာရေး (က) ပညာမတတ် (ခ) မူလတန်း (ဂ) အလယ်တန်း (ဃ) အထက်တန်း (ဇ) ဘွဲ့ရ

၄.ဘာသာ (က) ဗုဒ္ဓဘာသာ (ခ) ခရစ်ယာန် (ဂ) မွတ်စလင် (ဃ) ဟိန္ဒူ

၅.လူမျိုး (က) မြန်မာ (ခ) ကရင် (ဂ) ရှမ်း (ဃ) အခြား _____

၆.တစ်လဝင်ငွေ _____ ကျပ်

အခန်း(၂) အရက်သောက်သည့်ပုံစံနှင့်သမိုင်း

အရက်သောက်ခြင်း

မေးခွန်း(၁)

အရက်သောက်ဖူးပါသလား?
(က) သောက်ဖူးပါသည် (ခ) မသောက်ဖူးပါ
မသောက်ဖူးလျှင် မေးခွန်း(၃)ကိုကျော်ရန်

မေးခွန်း(၂)

(၁) အရက်စသောက်သည့်အသက် _____

မေးခွန်း(၃)

အရက်ဘာကြောင့်စသောက်ခဲ့ပါသလဲ(အဖြေမှန်တစ်ခုရွေးပါ)

	မှန်	မှား
က.အလုပ်၊လူမှုရေးပြဿနာများကြောင့်		
ခ.စမ်းသပ်မှုအနေဖြင့်		
ဂ.အလုပ်ရှင်၊လုပ်ဖော်ကိုင်ဖက်များကြောင့်		
ဃ.မိသားစု၊ဆွေမျိုးများကြောင့်		
င.ပွဲလမ်းသဘင်များ		
စ.အခြား_____		

မေးခွန်း(၄)

အရက်စသောက်စဉ်ကဘယ်လောက်တစ်ခါသောက်ပါသလဲ

(က) လစဉ် (ခ)တစ်လ၂-၄ ကြိမ် (ဂ)တစ်ပတ်၂-၃ကြိမ် (ဃ)တစ်ပတ်၄ကြိမ်နှင့်အထက်

မေးခွန်း(၅)

တစ်ခါသောက်လျှင်မည်မျှပမာဏသောက်ပါသလဲ

_____

မေးခွန်း(၆)

အောက်ဖော်ပြပါအရက်အမျိုးအစားများထဲမှသောက်ခဲ့ဖူးသောအရက်များနှင့်သောက်ခဲ့သောအချိန်

	တစ်သက်တာအတွင်း		၁၂လအတွင်း			
အရက်အမျိုးအစား	အမှန်	အမှား	အမှန်	အမှား		
ဘီယာ						
ဂီစကီ						
အရက်ဖြူ						
ရမ်						
ဂျင်						
အိမ်ချက်အရက်						

ဝိုင်						

မေးခွန်း(၇)

လွန်ခဲ့သော၁၂လအတွင်း

က.တစ်လအတွင်းဘယ်နှစ်ရက်သောက်ပါသလဲ	..... ရက်
ခ. တစ်ခါသောက်လျှင်မည်မျှပမာဏသောက်ပါသလဲ	..... ပုလင်း(သို့)ခွက်
ဂ.ဘယ်အချိန်တွေမှာသောက်သုံးလေ့ရှိပါသလဲ(အဖြေမှန်တစ်ခုသာရွေးပါ)	မနက် | နေ့လည် | ညနေ | ည
ဃ.တစ်လအတွင်းအရက်အတွက်ငွေသုံးစွဲသည့်ပမာဏ	.....ကျပ်

မေးခွန်း(၈)

လွန်ခဲ့သော၁၂လအတွင်းဘယ်လိုအခြေအနေမျိုးမှာသောက်လေ့ရှိသလဲ

က) အလုပ်၊မိသားစု ဖိအားကြောင့် ခ) ပွဲလမ်းသဘင်များ ဂ) အခြား_____

မေးခွန်း(၉)

မည်သည့်နေရာတွင်သောက်သုံးလေ့ရှိပါသလဲ

က)အိမ် ခ)အလုပ် ဂ)စားသောက်ဆိုင်နှင့်အရက်ဆိုင် ဃ) အခြား_____

မေးခွန်း(၁၀)

မိသားစုဂင်များ၊လုပ်ဖော်ကိုင်ဖက်များနှင့်အတူတူသောက်ဖူးသည့်သမိုင်း

မိသားစုဂင်များ	မသောက်ဖူးပါ	ရံဖန်ရံခါ	အမြဲတမ်း
မိဘ			
ညီအစ်ကို၊မောင်နမ			
အမျိုးများ			
သူငယ်း			
လုပ်ဖော်ကိုင်ဖက်			
သူဝယ်ချင်း			

*အခြား _____

မေးခွန်း(၁၀)

လွန်ခဲ့သောတစ်နှစ်အတွင်းအရက်မသောက်မိညာမှဖြစ်ရပ်များအားမမှတ်မိသည်မျိုးဘယ်နကြိမ
်ခန့်ဖြစ်ဖူးပါသလဲ

_____

မေးခွန်း(၁၂)

လွန်ခဲ့သောတစ်နှစ်အတွင်းအရက်သောက်ပြီးနောက်နောင်တ(သို့)သံဝေဂဘယ်နကြိမ်ခန့်ရဖူးပါသလဲ

(အဖြေမှန်တစ်ခုသာရွေးပါ)

က)မရဖူးပါ ခ) လစဉ်ထက်နည်း ဂ)လစဉ် ဃ)အပတ်စဉ် င)နေ့စဉ်(သို့)နေ့စဉ်နီးပါး

မေးခွန်း(၁၃)

လွန်ခဲ့သောတစ်နှစ်အတွင်းအရက်သောက်ခြင်းကြောင့်ရောဂါများဖြစ်ဖူးပါသလား

က)ဖြစ်ဖူးသည် ခ)မဖြစ်ဖူးပါ

ဖြစ်ဖူးလျှင်၊ ရောဂါအမျိုးအစားအားပြောပါ _____

မေးခွန်း(၁၄)

လွန်ခဲ့သောတစ်နှစ်အတွင်းအရက်ကြောင့်ဆေးရုံတင်ရတာမျိုးဖြစ်ဖူးပါသလား

က)ဖြစ်ဖူးသည် ခ)မဖြစ်ဖူးပါ

ဖြစ်ဖူးလျှင်၊ မည်သည့်အချိန်ကနည်း _____

မေးခွန်း(၁၅)

လွန်ခဲ့သောတစ်နှစ်အတွင်းအရက်ကြောင့်ဖြစ်တတ်သောရောဂါ၊ဒဏ်ရာအစရှိသည်တို့နှင့်ပတ်သက်ပြီး
မိသားစုဝင်၊ဆရာဝန်တို့ကစိုးရိမ်သဖြင့်ပြောပြဖူးပါသလား

က) ပြောဖူးသည် ခ)မပြောဖူးပါ

အခန်း(၃) ကွမ်းစားသုံးသည့်ပုံစံနှင့်သမိုင်း

မေးခွန်း(၁)

မိမိတစ်သက်တာအတွင်းကွမ်းယာစားဖူးပါသလား (က) စားဖူးပါသည် (ခ) မစားဖူးပါ

မေးခွန်း(၂)

ကွမ်းယာစတင်စားဖူးသည့်အရွယ် _____ နှစ်

မေးခွန်း(၃)

ကွမ်းဘာကြောင့်စစားခဲ့ပါသလဲ(အဖြေမှန်တစ်ခုရွေးပါ)

	မှန်	မှား
က.အလုပ်၊လုပ်ရေးပြဿနာများကြောင့်		
ခ.စမ်းသပ်မှုအနေဖြင့်		
ဂ.အလုပ်ရှင်၊လုပ်ဖော်ကိုင်ဖက်များကြောင့်		
ဃ.မိသားစု၊ဆွေမျိုးများကြောင့်		
င.ပွဲလမ်းသဘင်များ		
စ.အခြား_____		

မေးခွန်း(၄)

ကွမ်းစစားစဉ်ကဘယ်လောက်တစ်ခါစားခဲ့ပါသလဲ

(က) လစဉ် (ခ)တစ်လ ၂-၄ ကြိမ် (ဂ)တစ်ပတ် ၂-၃ကြိမ် (ဃ)တစ်ပတ်၄ကြိမ်နှင့်အထက်

မေးခွန်း(၅)

တစ်ခါစားလျှင်ပမာဏမည်မျှစားပါသလဲ

_____

မေးခွန်း(၆)

အောက်ဖော်ပြပါကွမ်းနှင့်ဆေးရွက်ကြီးအမျိုးအစားထဲမှစားသုံးဖူးသည်များကိုရွေးပါ

	တစ်သက်တာအတွင်း		၁၂အတွင်း	
ကွမ်းသီးအမျိုးအစား	စားဖူးသည်	မစားဖူးပါ	စားဖူးသည်	မစားဖူးပါ
ဆေးရွက်ကြီးမပါသောကွမ်းသီး				
"92" ဆေးရွက်ကြီး				
"Parajet" ဆေးရွက်ကြီး				
"45" ဆေးရွက်ကြီး				
"100" ဆေးရွက်ကြီး				
"Signal" ဆေးရွက်ကြီး				
"Star" ဆေးရွက်ကြီး				
ကွမ်းရွက် (ပေါင်းခံ)				

မေးခွန်း(၇)

လွန်ခဲ့သော၁၂လအတွင်း

က.တစ်လအတွင်းဘယ်နှစ်ရက်စားပါသလဲ	..... ရက်			
ခ. တစ်ခါသောက်လျှင်မည်မျှပမာဏစားပါသလဲ	..... ပုလင်း(သို့)ခွက်			
ဂ.ဘယ်အချိန်တွေမှာစားလေ့ရှိပါသလဲ(အဖြေမှန်တစ်ခုသာရွေးပါ)	မနက်	နေ့လည်	ညနေ	ည

ဃ.တစ်လအတွင်းကွမ်းအတွက်ငွေသုံးစွဲသည့်ပမာဏ	.....ကျပ်

မေးခွန်း(၈)

လွန်ခဲ့သောဘ၂လအတွင်းဘယ်လိုအခြေအနေမျိုးမှာစားလေ့ရှိပါသလဲ

က) အလုပ်၊မိသားစု ဖိအားကြောင့် ခ) ပွဲလမ်းသဘင်များ ဂ) အခြား_____

မေးခွန်း(၉)

မည်သည့်နေရာတွင်စားလေ့ရှိပါသလဲ

က)အိမ် ခ)အလုပ် ဂ)စားသောက်ဆိုင်နှင့်အရက်ဆိုင် ဃ) အခြား_____

မေးခွန်း(၁၀)

မိသားစုဝင်များ၊လုပ်ဖော်ကိုင်ဖက်များနှင့်အတူတူစားဖူးသည့်သမိုင်း

မိသားစုဝင်များ	မစားဖူးပါ	ရံဖန်ရံခါ	အမြဲတမ်း
မိဘ			
ညီအစ်ကို၊မောင်နှမ			
အမျိုးများ			
သူငယ်း			
လုပ်ဖော်ကိုင်ဖက်			
သူငယ်ချင်း			

*အခြား _____

မေးခွန်း(၁၁)

လွန်ခဲ့သောတစ်နှစ်အတွင်းကွမ်းစားပြီးနောက်နောင်တ(သို့)သံဝေဂဘယ်နှကြိမ်ခန့်ရဖူးပါသလဲ

(အဖြေမှန်တစ်ခုသာရွေးပါ)

က)မရဖူးပါ ခ) လစဉ်ထက်နည်း ဂ)လစဉ် ဃ)အပတ်စဉ် င)နေ့စဉ်(သို့)နေ့စဉ်နီးပါး

မေးခွန်း(၁၂)

လွန်ခဲ့သောတစ်နှစ်အတွင်းကွမ်းစားခြင်းကြောင့်ရောဂါများဖြစ်ဖူးပါသလား

က)ဖြစ်ဖူးသည်　　ခ)မဖြစ်ဖူးပါ

ဖြစ်ဖူးလျှင်၊ ရောဂါအမျိုးအစားအားပြောပါ _____

မေးခွန်း(၁၃)

လွန်ခဲ့သောတစ်နှစ်အတွင်းအရက်ကြောင့်ဆေးရုံတင်ရတာမျိုးဖြစ်ဖူးပါသလား

က)ဖြစ်ဖူးသည်　　ခ)မဖြစ်ဖူးပါ

ဖြစ်ဖူးလျှင်၊ မည်သည့်အချိန်ကနည်း _____

မေးခွန်း(၁၄)

လွန်ခဲ့သောတစ်နှစ်အတွင်းအရက်ကြောင့်ဖြစ်တတ်သောရောဂါ၊ဒဏ်ရာအစရှိသည်တို့နှင့်ပတ်သက်ပြီး မိသားစုဝင်၊ဆရာဝန်တို့ကစိုးရိမ်သဖြင့်ပြောပြဖူးပါသလား

က)ပြောဖူးပါသည်　ခ)မပြောဖူးပါ

ပြောဖူးလျှင်၊ ပြောဖူးသည့်အကြောင်းကိုဆက်လက်ပြောပါ _____

မေးခွန်း(၁၅)

ကွမ်းစားပြီးနောက်အရက်သောက်လေ့ရှိပါသလား

က) ရှိပါသည်　　ခ)မရှိပါ

ရှိလျှင် မည်သည့်အချိန်ကစပြီးထိုအလေ့အကျင့်ရှိခဲ့ပါသလဲ _____

ASSIST မေးခွန်း အခန်း(၁)

မေးခွန်း ၁

အောက်ဖော်ပြပါအရာများထဲမှတစ်သက်တာအတွင်းသုံးဖူးပါသလား (ဆေးဘက်ဝင်အတွက်မပါဝင်ပါ)	သုံးဖူးပါသည်	မသုံးဖူးပါ
က. ဆေးရွက်ကြီးနှင့်ဆက်စပ်ပစ္စည်းများ(စီးကရက်၊ပိုးစားနိုင်သောဆေးရွက်ကြီး...)	၀	၃
ခ. အရက်နှင့်ဆက်စပ်ပစ္စည်းများ(ဘီယာ၊ဝိုင်၊အရက်ပြန်၊....)	၀	၃
ဂ. ဆေးခြောက်နှင့်ဆက်စပ်ပစ္စည်းများ	၀	၃
ဃ. ကိုကိန်း နှင့်ဆက်စပ်ပစ္စည်းများ	၀	၃
င. အမဲဖတ်တမင်းကဲ့သို့စိတ်ကြွစေသောဆေးဝါးများ	၀	၃
စ. ရှူရှိုက်ရသောပစ္စည်းများ(ကော်၊ဘတ်ဆီ၊နိုက်ထရက်စ်၊....)	၀	၃
ဆ. အိပ်ဆေးနှင့်ဆက်စပ်ပစ္စည်းများ	၀	၃
ဇ. စိတ်ကိုထင်ယောင်ထင်မှားဖြစ်စေနိုင်သောပစ္စည်းများ(အက်စစ်၊မို့ကတ်တမင်း....)	၀	၃
ဈ. ဘိန်းနှင့်ဆက်စပ်ပစ္စည်းများ(ဓော်ဖင်း၊ကိုဒင်း၊ဟီးရိုးဟင်း...)	၀	၃
ည. ကွမ်းယာနှင့်ဆက်စပ်ပစ္စည်းများ	၀	၃

အခြား_____

အထက်ဖော်ပြပါပစ္စည်းများအား တစ်ခါမျှပင်လုံးဝမသုံးဖူးပါလျှင် မေးခွန်းမေးခြင်းအားရပ်တန့်ပါ

သုံးဖူးပါလျှင် မေးခွန်း ၂ မှ သုံးစွဲသည့်ပစ္စည်းအားဆက်လက်မေးမြန်းရန်

မေးခွန်း ၂

လွန်ခဲ့သော ၃လအတွင်း သုံးစွဲခဲ့သောအကြိမ်ရေ	လုံးဝမသုံးပါ	တစ်ကြိမ်(သို့)နှစ်ကြိမ်	၃လ	အပတ်စဉ်	နေ့စဉ်(သို့)မဟုတ် နေ့တိုင်းပါ
က.ဆေးရွက်ကြီးနှင့်ဆက်စပ်ပစ္စည်းများ(စီးကရက်၊ပိုးစားနိုင်သောဆေးရွက်ကြီး...)	၀	၂	၄	၅	၆
ခ. အရက်နှင့်ဆက်စပ်ပစ္စည်းများ(ဘီယာ၊ဝိုင်၊အရက်ပြန်၊....)	၀	၂	၄	၅	၆
ဂ. ဆေးခြောက်နှင့်ဆက်စပ်ပစ္စည်းများ	၀	၂	၄	၅	၆
ဃ. ကိုကိန်း နှင့်ဆက်စပ်ပစ္စည်းများ	၀	၂	၄	၅	၆
င. အမဲဖတ်တမင်းကဲ့သို့စိတ်ကြွစေသောဆေးဝါးများ	၀	၂	၄	၅	၆

စ. ရှရိုက်ရသောပစ္စည်းများ(ကော်၊ဓာတ်ဆီ၊နိုက်ထရိုက်စ်၊....)	၀	၃	၄	၅	၆
ဆ. အိပ်ဆေးနှင့်ဆက်စပ်ပစ္စည်းများ	၀	၃	၄	၅	၆
ဇ.စိတ်ကိုထင်ယောင်ထင်မှားဖြစ်စေနိုင်သောပစ္စည်းများ(အက်စစ်၊မို့ဂတ်တမင်း၊....)	၀	၃	၄	၅	၆
ဈ. ဘိန်းနှင့်ဆက်စပ်ပစ္စည်းများ(မော်ဖင်းကိုဒင်းဟီးရိုးဟင်း၊...)	၀	၃	၄	၅	၆
ည. ကွမ်းယာနှင့်ဆက်စပ်ပစ္စည်းများ	၀	၃	၄	၅	၆

အခြား_____

မေးခွန်း ၂ တွင် အချက်အားလုံး လုံးဝမသုံးဖူးပါဟုဖြေလျှင် မေးခွန်း၆ ကိုကျော်ပါ
သုံးဖူးသည်ဟုဖြေလျှင် မေးခွန်း ၃၊၄၊၅ မှသုံးဖူးသည့်ပစ္စည်းအကြောင်းအားဆက်လက်မေးပါရန်

မေးခွန်း၃

လွန်ခဲ့သောဥလအတွင်းသုံးစွဲချင်စိတ်ပြင်းထန်ခြင်းမျိုး ဘယ်နှကြိမ်ခန့်ဖြစ်ပါသလဲ	လုံးဝမသုံးဖူးပါ	တစ်ကြိမ်(သို့) နှစ်ကြိမ်	လစဉ်	အပတ်စဉ်	နေ့စဉ်(သို့) နှစ်ဉီးပါး
က.ဆေးရွက်ကြီးနှင့်ဆက်စပ်ပစ္စည်းများ(စီးကရက်၊ဂေါ်ဖားနိုင်သောဆေးရွက်ကြီး၊...)	၀	၃	၄	၅	၆
ခ. အရက်နှင့်ဆက်စပ်ပစ္စည်းများ(ဘီယာ၊ဝိုင်း၊အရက်ပြန်၊...)	၀	၃	၄	၅	၆
ဂ. ဆေးခြောက်နှင့်ဆက်စပ်ပစ္စည်းများ	၀	၃	၄	၅	၆
ဃ. ကိုကိန်း နှင့်ဆက်စပ်ပစ္စည်းများ	၀	၃	၄	၅	၆
င. အမ်ဖတ်တမင်းကဲ့သို့စိတ်ကြွစေသောဆေးဝါးများ	၀	၃	၄	၅	၆
စ. ရှရိုက်ရသောပစ္စည်းများ(ကော်၊ဓာတ်ဆီ၊နိုက်ထရိုက်စ်၊...)	၀	၃	၄	၅	၆
ဆ. အိပ်ဆေးနှင့်ဆက်စပ်ပစ္စည်းများ	၀	၃	၄	၅	၆
ဇ.စိတ်ကိုထင်ယောင်ထင်မှားဖြစ်စေနိုင်သောပစ္စည်းများ(အက်စစ်၊မို့ဂတ်တမင်း၊....)	၀	၃	၄	၅	၆
ဈ. ဘိန်းနှင့်ဆက်စပ်ပစ္စည်းများ(မော်ဖင်းကိုဒင်းဟီးရိုးဟင်း၊...)	၀	၃	၄	၅	၆
ည. ကွမ်းယာနှင့်ဆက်စပ်ပစ္စည်းများ	၀	၃	၄	၅	၆

အခြား_____

မေးခွန်း၄

လွန်ခဲ့သောဥလအတွင်းသုံးစွဲခြင်းကြောင့်လူမှုရေးကျန်းမာရေးစီးပွားရေးပြဿနာများဘယ်နှကြိမ်ခန့်ဖြစ်ပါသလဲ	လုံးဝမသုံးစွဲပါ	တစ်ကြိမ်(သို့)နှစ်ကြိမ်	လစဉ်	အပတ်စဉ်	နေ့စဉ်(သို့)နှစ်ဉ်းပါး
က.ဆေးရွက်ကြီးနှင့်ဆက်စပ်ပစ္စည်းများ(စီးကရက်၊ဂါးစားနိုင်သောဆေးရွက်ကြီး...)	၀	၃	၄	၅	၆
ခ. အရက်နှင့်ဆက်စပ်ပစ္စည်းများ(ဘီယာ၊ဝိုင်း၊အရက်ပြန်....)	၀	၃	၄	၅	၆
ဂ. ဆေးခြောက်နှင့်ဆက်စပ်ပစ္စည်းများ	၀	၃	၄	၅	၆
ဃ. ကိုကိန်း နှင့်ဆက်စပ်ပစ္စည်းများ	၀	၃	၄	၅	၆
င. အမ်ဖတ်တမင်းကဲ့သို့စိတ်ကြွစေသောဆေးဝါးများ	၀	၃	၄	၅	၆
စ. ရှူရှိုက်ရသောပစ္စည်းများ(ဓောဂါ၊ဆေတ်ဆီ၊နိုက်ထရိုက်စိ၊....)	၀	၃	၄	၅	၆
ဆ. အိပ်ဆေးနှင့်ဆက်စပ်ပစ္စည်းများ	၀	၃	၄	၅	၆
ဇ.စိတ်ကိုထင်ယောင်ထင်မှားဖြစ်စေနိုင်သောပစ္စည်းများ(အက်စစ်၊မို့၊ကတ်တမင်း....)	၀	၃	၄	၅	၆
ဈ. ဘိန်းနှင့်ဆက်စပ်ပစ္စည်းများ(မော်ဖင်း၊ဂိုဒင်း၊ဟီးရိုးဟင်း...)	၀	၃	၄	၅	၆
ည. ကွမ်းယာနှင့်ဆက်စပ်ပစ္စည်းများ	၀	၃	၄	၅	၆

အခြား_____

မေးခွန်း၅

လွန်ခဲ့သောဥလအတွင်းသုံးစွဲမှုကြောင့်သင်မျော်ထားတာတွေမဖြစ်လာတာတွေ ဘယ်နှကြိမ်ခန့်ရှိပါသလဲ	လုံးဝမသုံးစွဲပါ	တစ်ကြိမ်(သို့)နှစ်ကြိမ်	လစဉ်	အပတ်စဉ်	နေ့စဉ်(သို့)နှစ်ဉ်းပါး
က.ဆေးရွက်ကြီးနှင့်ဆက်စပ်ပစ္စည်းများ(စီးကရက်၊ဂါးစားနိုင်သောဆေးရွက်ကြီး...)	၀	၃	၄	၅	၆
ခ. အရက်နှင့်ဆက်စပ်ပစ္စည်းများ(ဘီယာ၊ဝိုင်း၊အရက်ပြန်....)	၀	၃	၄	၅	၆
ဂ. ဆေးခြောက်နှင့်ဆက်စပ်ပစ္စည်းများ	၀	၃	၄	၅	၆
ဃ. ကိုကိန်း နှင့်ဆက်စပ်ပစ္စည်းများ	၀	၃	၄	၅	၆
င. အမ်ဖတ်တမင်းကဲ့သို့စိတ်ကြွစေသောဆေးဝါးများ	၀	၃	၄	၅	၆
စ. ရှူရှိုက်ရသောပစ္စည်းများ(ဓောဂါ၊ဆေတ်ဆီ၊နိုက်ထရိုက်စိ၊....)	၀	၃	၄	၅	၆
ဆ. အိပ်ဆေးနှင့်ဆက်စပ်ပစ္စည်းများ	၀	၃	၄	၅	၆
ဇ.စိတ်ကိုထင်ယောင်ထင်မှားဖြစ်စေနိုင်သောပစ္စည်းများ(အက်စစ်၊မို့၊ကတ်တမင်း....)	၀	၃	၄	၅	၆
ဈ. ဘိန်းနှင့်ဆက်စပ်ပစ္စည်းများ(မော်ဖင်း၊ဂိုဒင်း၊ဟီးရိုးဟင်း...)	၀	၃	၄	၅	၆

ည. ကွမ်းယာနှင့်ဆက်စပ်ပစ္စည်းများ	၀	၃	၄	၅	၆

အခြား_____

သုံးခဲ့ဖူးသောပစ္စည်းများအားလုံးအတွက် မေးခွန်း၆နှင့်ဂုအားဖြေပါ

မေးခွန်း၆

အမျိုး(သို့)သူငယ်ချင်းတစ်ယောက်ယောက်မှ သုံးစွဲခြင်းအတွက် သတိပေးပါသလား	လုံးဝမသုံးဖူးပါ	တခါတရံ(၁၀ ကြိမ်အောက်)	လစဉ်	အပတ်စဉ်	နေ့စဉ်(သို့) နှစ်ဉီးပါး
က.ဆေးရွက်ကြီးနှင့်ဆက်စပ်ပစ္စည်းများ(စီးကရက်၊ပါးစားနိုင်သောဆေးရွက်ကြီး...)	၀	၃	၄	၅	၆
ခ. အရက်နှင့်ဆက်စပ်ပစ္စည်းများ(ဘီယာ၊ဝိုင်းအရက်ပြန်.....)	၀	၃	၄	၅	၆
ဂ. ဆေးခြောက်နှင့်ဆက်စပ်ပစ္စည်းများ	၀	၃	၄	၅	၆
ဃ. ကိုကိန်း နှင့်ဆက်စပ်ပစ္စည်းများ	၀	၃	၄	၅	၆
င. အမ်ဖက်တမင်းကဲ့သို့စိတ်ကြွစေသောဆေးဝါးများ	၀	၃	၄	၅	၆
စ. ရှူရှိုက်ရသောပစ္စည်းများ(ကော်၊ဓာတ်ဆီ၊နိုက်ထရက်စ်၊...)	၀	၃	၄	၅	၆
ဆ. အိပ်ဆေးနှင့်ဆက်စပ်ပစ္စည်းများ	၀	၃	၄	၅	၆
ဇ.စိတ်ကိုထင်ယောင်ထင်မှားဖြစ်စေနိုင်သောပစ္စည်းများ(အက်စစ်၊မို့၊ကတ်တမင်း.....)	၀	၃	၄	၅	၆
ဈ. ဘိန်းနှင့်ဆက်စပ်ပစ္စည်းများ(ဓေါ်ဖင်းကိုဒင်းဟီးရိုးဘင်း...)	၀	၃	၄	၅	၆
ည. ကွမ်းယာနှင့်ဆက်စပ်ပစ္စည်းများ	၀	၃	၄	၅	၆

အခြား_____

မေးခွန်း၇

သုံးစွဲခြင်းအားဖြတ်ရန်၊လျှော့ချရန် ကြိုးစားပြီးမအောင်တာမျိုး ဘယ်နှကြိမ်ခန့်ဖြစ်ဖူးပါသလဲ	လုံးဝမသုံးဖူးပါ	တခါတရံ(၁၀ ကြိမ်အောက်)	လစဉ်	အပတ်စဉ်	နေ့စဉ်(သို့) နှစ်ဉီးပါး
က.ဆေးရွက်ကြီးနှင့်ဆက်စပ်ပစ္စည်းများ(စီးကရက်၊ပါးစားနိုင်သောဆေးရွက်ကြီး...)	၀	၃	၄	၅	၆
ခ. အရက်နှင့်ဆက်စပ်ပစ္စည်းများ(ဘီယာ၊ဝိုင်းအရက်ပြန်.....)	၀	၃	၄	၅	၆

ဂ. ဆေးခြောက်နှင့်ဆက်စပ်ပစ္စည်းများ	၀	၃	၄	၅	၆
ဃ. ကိုကိန်း နှင့်ဆက်စပ်ပစ္စည်းများ	၀	၃	၄	၅	၆
၎. အမ်ဖတ်တမင်းကဲ့သို့စိတ်ကြွစေသောဆေးဝါးများ	၀	၃	၄	၅	၆
စ. ရှရိုက်ရသောပစ္စည်းများ(ကော်၊ဓာတ်ဆီ၊နိုက်ထရိုက်စ်၊...)	၀	၃	၄	၅	၆
ဆ. အိပ်ဆေးနှင့်ဆက်စပ်ပစ္စည်းများ	၀	၃	၄	၅	၆
ဇ.စိတ်ကိုထင်ယောင်ထင်မှားဖြစ်စေနိုင်သောပစ္စည်းများ(အက်စစ်၊ပို့ကတ်တမင်း....)	၀	၃	၄	၅	၆
ဈ. ဘိန်းနှင့်ဆက်စပ်ပစ္စည်းများ(မော်ဖင်းကိုဒင်းဟီးရိုးဟင်း...)	၀	၃	၄	၅	၆
ည. ကွမ်းယာနှင့်ဆက်စပ်ပစ္စည်းများ	၀	၃	၄	၅	၆

အခြား_____

မေးခွန်း(၈)

	မသွင်းဖူးပါ	လွန်ခဲ့သော သုံးလအတွင်း ထိုးဖူးသည်	ထိုးဖူးသည်၊လွန်ခဲ့သော သုံးလအတွင်းမဟုတ်ပါ
ဆေးများကိုယ်ခန္ဓာထဲထိုးသွင်းဖူးပါသလား (ဆေးကုသရန်အတွက်ထိုးသွင်းခြင်းမဟုတ်ပါ)	၀	၂	၁

	သုံးစွဲသည့်ပစ္စည်းမှတ်တမ်း	ဖြတ်ရန်မကြိုးစားဖူးပါ	ဖြတ်ရန်ကြိုးစားဖူးပါသည်	ဆေးကုသမှုဖြင့်ဖြတ်ရန်ခဲယဉ်ဖူးသည်
က.ဆေးရွက်ကြီးနှင့်ဆက်စပ်ပစ္စည်းများ		၀ - ၃	၄ - ၂၆	၂၇+
ခ. အရက်နှင့်ဆက်စပ်ပစ္စည်းများ		၀ - ၁၀	၁၁ - ၂၆	၂၇+
ဂ. ဆေးခြောက်နှင့်ဆက်စပ်ပစ္စည်းများ		၀ - ၃	၄ - ၂၆	၂၇+
ဃ. ကိုကိန်း နှင့်ဆက်စပ်ပစ္စည်းများ		၀ - ၃	၄ - ၂၆	၂၇+
င. အမဲဖတ်တမင်းကဲ့သို့စိတ်ကြွစေသောဆေးဝါးများ		၀ - ၃	၄ - ၂၆	၂၇+
စ. ရွှံရိုက်ရသောပစ္စည်းများ		၀ - ၃	၄ - ၂၆	၂၇+
ဆ. အိပ်ဆေးနှင့်ဆက်စပ်ပစ္စည်းများ		၀ - ၃	၄ - ၂၆	၂၇+
ဇ.စိတ်ကိုထင်ယောင်ထင်မှားဖြစ်စေနိုင်သောပစ္စည်းများ		၀ - ၃	၄ - ၂၆	၂၇+
ဈ. ဘိန်းနှင့်ဆက်စပ်ပစ္စည်းများ		၀ - ၃	၄ - ၂၆	၂၇+
ည. ကွမ်းယာနှင့်ဆက်စပ်ပစ္စည်းများ		၀ - ၃	၄ - ၂၆	၂၇+
ဋ.အခြား		၀ - ၃	၄ - ၂၆	၂၇+

သုံးစွဲသည့်ပစ္စည်းပေါ် မူတည်၍ဖြတ်ရန်ကြိုးစားမှုအပေါ် အမှတ်ပေးဇယား

အခန်း(၂)

သုံးစွဲသည့်ပစ္စည်းနှင့်ပတ်သက်၍တုန့်ပြန်မှုဇယား

က.ဆေးရွက်ကြီးနှင့်ဆက်စပ်ပစ္စည်းများ

ခ. အရောက်နှင့်ဆက်စပ်ပစ္စည်းများ
ဂ. ဆေးခြောက်နှင့်ဆက်စပ်ပစ္စည်းများ
ဃ. ကိုကိန်း နှင့်ဆက်စပ်ပစ္စည်းများ
င. အမ်ဖတ်တမင်းကဲ့သို့စိတ်ကြွစေသောဆေးဝါးများ
စ. ရွှံ့ရိုက်ရသောပစ္စည်းများ
ဆ. အိပ်ဆေးနှင့်ဆက်စပ်ပစ္စည်းများ
ဇ.စိတ်ကိုထင်ယောင်ထင်မှားဖြစ်စေနိုင်သောပစ္စည်းများ
ဈ. ဘိန်းနှင့်ဆက်စပ်ပစ္စည်းများ
ည. ကွမ်းယာနှင့်ဆက်စပ်ပစ္စည်းများ
ဋ္ဌ. အခြား

တုန့်ပြန်မှုမေးခွန်း ၂ - ၅

တစ်ခါမျှမသုံးပါ - လွန်ခဲ့သောဥလအတွင်းမသုံးပါ

တစ်ခါ(သို့)နှစ်ခါ - လွန်ခဲ့သောဥလအတွင်းတစ်ခါ(သို့)နှစ်ခါသုံးသည်

လစဉ် - တစ်လအတွင်းတစ်ကြိမ်မှသုံးကြိမ်

အပတ်စဉ် - တစ်ပတ်အတွင်းတစ်ကြိမ်မှလေးကြိမ်

နေ့စဉ်(သို့)နေ့စဉ်နီးပါး - တစ်ပတ်အတွင်းငါးကြိမ်မှဥနှစ်ကြိမ်

တုန့်ပြန်မှုမေးခွန်း ၆ - ၈

တစ်ခါမျှမသုံးဖူးပါ

သုံးဖူးသည်၊သို့သော်လွန်ခဲ့သောသုံးလအတွင်းမဟုတ်ပါ

လွန်ခဲ့သောသုံးလအတွင်းသုံးဖူးသည်

သုံးစွဲသည့်ပစ္စည်းအပေါ် အမှတ်ပေးဖယား

	အမှတ်	အဖြေရွေးချယ်ရှိသည့်အဆင့်
က.ဆေးရွက်ကြီးနှင့်ဆက်စပ်ပစ္စည်းများ		၀ - ၃ နည်းပါး ၄ - ၂၆ အလယ်အလတ် ၂၇+ မြင့်မား
ခ. အရက်နှင့်ဆက်စပ်ပစ္စည်းများ		၀ - ၃ နည်းပါး ၄ - ၂၆ အလယ်အလတ် ၂၇+ မြင့်မား
ဂ. ဆေးခြောက်နှင့်ဆက်စပ်ပစ္စည်းများ		၀ - ၃ နည်းပါး ၄ - ၂၆ အလယ်အလတ် ၂၇+ မြင့်မား
ဃ. ကိုကိန်း နှင့်ဆက်စပ်ပစ္စည်းများ		၀ - ၃ နည်းပါး ၄ - ၂၆ အလယ်အလတ် ၂၇+ မြင့်မား
၎. အမ်ဖတ်တမင်းကဲ့သို့စိတ်ကြွစေသောဆေးဝါးများ		၀ - ၃ နည်းပါး ၄ - ၂၆ အလယ်အလတ် ၂၇+ မြင့်မား
စ. ရှရိုက်ရသောပစ္စည်းများ		၀ - ၃ နည်းပါး ၄ - ၂၆ အလယ်အလတ် ၂၇+ မြင့်မား
ဆ. အိပ်ဆေးနှင့်ဆက်စပ်ပစ္စည်းများ		၀ - ၃ နည်းပါး ၄ - ၂၆ အလယ်အလတ် ၂၇+ မြင့်မား
ဇ.စိတ်ကိုထင်ယောင်ထင်မှားဖြစ်စေနိုင်သောပစ္စည်းများ		၀ - ၃ နည်းပါး

		၄ - ၂၆ အလယ်အလတ် ၂၇+ မြင့်မား
ဃ. ဘိန်းနှင့်ဆက်စပ်မစ္စည်းများ		၀ - ၃ နည်းပါး ၄ - ၂၆ အလယ်အလတ် ၂၇+ မြင့်မား
ည. ကွမ်းယာနှင့်ဆက်စပ်မစ္စည်းများ		၀ - ၃ နည်းပါး ၄ - ၂၆ အလယ်အလတ် ၂၇+ မြင့်မား
ဋ.အခြား		၀ - ၃ နည်းပါး ၄ - ၂၆ အလယ်အလတ် ၂၇+ မြင့်မား

နည်းပါး	ယခုသုံးစွဲသည့်ပုံစံသည်ကျန်းမားရေးထိခိုက်ရန်အခြေအနေနည်းသည်
အလယ်အလတ်	ယခုသုံးစွဲသည့်ပုံစံသည်ကျန်းမားရေးထိခိုက်ရန်အခြေအနေအလယ်အလတ်ခန့်ရှိသည်
မြင့်မား	ယခုသုံးစွဲသည့်ပုံစံသည်ကျန်းမားရေးထိခိုက်ရန်အခြေအနေမြင့်မားသည်

အခန်း(၃)

သင်အထက်ပါပစ္စည်းများသုံးစွဲမှုအပေါ်စိုးရိမ်မှုပန်မှုရှိပါသလား။

က. ဆေးရုံကြီး	အောက်ပါအချက်များနှင့်တွေ့ရန်အဆင့် ဆေးရွက်ကြီးပုံမှန်သုံးစွဲခြင်းသည်၊	နည်း	အလယ်အလတ်	မြင့် (အမှန်ခြစ်ပါ)
	အရွယ်မတိုင်ခင်အိုမင်းခင့်ရော်ခြင်း			
	အသက်ရှူလမ်းကြောင်းဆိုင်ရာရောဂါနှင့်ပန်းနာရင်ကြပ်			
	သွေးတိုးဆီးချို			
	သုံးစွဲသည့်သူသားသမီးများတွင်အသက်ရှူလမ်းကြောင်းဆိုင်ရာရောဂါနှင့်ပန်းနာရင်ကြပ်			
	ကလေးမျက်ကျခြင်းလေမဝေ့(သို့)ပေါင်မပြည့်ပဲမွေးဖွားခြင်း			

	ကျောက်ကပ်ရောဂါ
	နာတာရှည်အသက်ရှူလမ်းကြောင်းကျဉ်းသောရောဂါ
	နလုံးရောဂါ၊လေဖြတ်ခြင်း
	ကင်ဆာ

ခ. အရေက်	အောက်ပါအချက်များကြီးတွေ့ရန်အဆင့် အရေက်အလွန်သောက်ခြင်းသည်	နည်း	အလယ်အလတ်	မြင့် (အမှန်ခြစ်ပါ)
	အရေက်နာကျခြင်း၊အမူအရာများကြမ်းတမ်းလာခြင်း၊မတော်တဆမှုနှင့်ဒဏ်ရာများခြင်း			
	လိင်ပိုင်းဆိုင်ရာစွမ်းဆောင်မှုကျခြင်း၊ အရွယ်မတိုင်ခင်အိုမင်းရင့်ရော်ခြင်း			
	အစာအိမ်နှင့်အစာလမ်းကြောင်းဆိုင်ရာရောဂါများ၊ သွေးတိုးခြင်း			
	စိတ်ပူပန်ခြင်း၊စိတ်ကျခြင်း၊ အလုပ်၊မိသားစု၊ဒွေကြေးဆိုင်ရာပြဿနာများ			
	မုတ်ဆက်နှင့်ပတ်သက်သောပြဿနာများ			
	ကိုယ်ဝန်ဆောင်မိခင်များတွင် ကလေးအားထိခိုက်စေခြင်း			
	လေဖြတ်ခြင်း၊ဦးနှောက်၊ကြွက်သား၊အာရုံကြောများထိခိုက်ခြင်း			
	အသဲ၊ မုန့်ချိုအိတ်နှင့်ပတ်သက်သောရောဂါများ			
	ကင်ဆာ ၊ မိဓိကိုယ်ကိုသတ်သေခြင်း			

ဂ. ဆေးပြောခြင်း	အောက်ပါအချက်များကြိုတွေ့ရန်အဆင့်	နည်း	အလယ်အလတ်	များ
				(အမှန်ခြစ်ပါ)
	ဆေးခြောက်ပုံမှန်သုံးစွဲခြင်းသည်			
	အာရုံရူးစိုက်မခြင်း			
	စိတ်ပိုင်းဆိုင်ရာရောဂါများ			
	မူတ်ညှာက်နှင့်ပတ်သက်သောပြဿနာများ			
	သွေးတိုးခြင်း			
	ပန်းနာရင်ကြပ်ရောဂါ			
	နှလုံးရောဂါ			
	နာတာရှည်အသက်ရှူလမ်းကြောင်းဆိုင်ရာရောဂါ			
	ကင်ဆာ			

ဃ. ကိုကင်း	အောက်ပါအချက်များကြိုတွေ့ရန်အဆင့်	နည်း	အလယ်အလတ်	များ
	ဘိန်းပုံမှန်သုံးစွဲခြင်းသည်			
	နှလုံးတုန်ခြင်းအိပ်မပျော်ခြင်းကိုယ်အလေးချိန်ကျသွားခြင်း			
	ကိုယ်ခန္ဓာယားယံခြင်းထုံကျဉ်ခြင်း			
	ထိခိုက်ဒဏ်ရာရခြင်း			
	စိတ်ပိုင်းဆိုင်ရာရောဂါများရခြင်း			
	ယင်းထခြင်း			
	သုံးစွဲမှုများခြင်းကြောင့်စိတ်မနံခြင်း			
	နှလုံးရောဂါကြောင့်ရုတ်တရက်သေဆုံးခြင်း			

င.အမ်ဖတ်တမင်းကဲ့သို့ စိတ်ကြွစေသောဆေးဝါးများ	အောက်ပါအချက်များကြိုတွေ့ရန်အဆင့်	နည်း	အလယ်အလတ်	များ
	အမ်ဖတ်တမင်းကဲ့သို့စိတ်ကြွစေသောဆေးဝါးများ ပုံမှန်သုံးစွဲခြင်းသည်			

	အိပ်မပျော်ခြင်းအစားအသောက်ပျက်ခြင်းကိုယ်အလေးချိန် ကျဆင်းခြင်း အံကိုတ်ခြင်းခေါင်းကိုက်ခြင်းကြွက်သားများနာကျင်ခြင်း နှလုံးခုန်မမှန်ခြင်းအဖျော်ဖောက်ခြင်း ကိုယ်စိတ်ကြွမ်းတမ်းလာခြင်း သုံးစွဲမှုများခြင်းကြောင့်စိတ်မနှံ့ခြင်း ဦးနှောက်အားထိခိုက်စေခြင်း အသဲထိခိုက်ခြင်း၊ ရုတ်တရက်သေဆုံးခြင်း

စ. ရှရိုက်ရသောပစ္စည်းများ	အောက်ပါအချက်များကြီးတွေ့ရန်အဆင့်	နည်း	အလယ်အလတ်	မြင့်
	ရှရိုက်ရသောပစ္စည်းများ ပံ့မှန်သုံးစွဲခြင်းသည်			
	ထင်ယောင်ထင်မှားဖြစ်ခြင်းမူးဝေခြင်းအမြင်အာရုံ ဝေဝါးခြင်း တုပ်ကွေးကဲ့သို့လက္ခဏာများပြခြင်းအစာအိမ်ရောဂါများ မတော်တဆမှုနှင့်ထိခိုက်ဒဏ်ရာများ မှတ်ဉာဏ်များပျောက်ဆုံးခြင်းစိတ်ကျခြင်း၊ တက်ခြင်းမေ့မျောခြင်း ကိုယ်ခန္ဓာလေးလံခြင်းခြေလက်များပြာနမ်းလာခြင်း နှလုံးရပ်သဖြင့်သေဆုံးခြင်း			

ဆ. အိပ်ဆေးနှင့် ဆက်စပ်ပစ္စည်းများ	အောက်ပါအချက်များကြီးတွေ့ရန်အဆင့်	နည်း	အလယ်အလတ်	မြင့်
	ပံ့မှန်သုံးစွဲခြင်းသည်			
	လေးလံထိုင်းမှိုင်းခြင်းမူးဝေခြင်း အာရုံစူးစိုက်မရခြင်း ခေါင်းကိုက်ခြင်း၊ လမ်းလျှောက်သည့်ပုံစံမမှန်ခြင်း အိပ်မပျော်ခြင်း စိတ်ကျခြင်း			

	အရိုန်တိုအတွင်းသုံးစွဲရသည့်ပမာဏများလာခြင်း ဆေးသုံးစွဲမှုရပ်ပြီးနောက် ယင်းထခြင်း အရက်၊ဘိန်း နှင့်အခြားဆေးများနှင့်တွဲသုံးခြင်းဆေးလွန်ပြီးသေဆုံးခြင်း

ဖ.စိတ်ကိုထင်ယောင်ထင်မှား ဖြစ်စေနိုင်သောပစ္စည်းများ	အောက်ပါအချက်များကြောင့်တွေ့ရန်အဆင့်	နည်း အလယ်အလတ် မြင့်
	ပုံမှန်သုံးစွဲခြင်းသည်	
	ထင်ယောင်ထင်မှားဖြစ်ခြင်း အိပ်မပျော်ခြင်း ပို့.အန်ခြင်း ရင်တုန်ခြင်းသွေးတိုးခြင်း စိတ်မငြိမ်ခြင်း စိတ်ကဆင်းကလွဲးရောဂါကဲ့သို့စိတ်ရောဂါများအားပိုဆိုးစေခြင်း	

ဗျ. ကွမ်းယာနှင့် ဆက်စပ်ပစ္စည်းများ	အောက်ပါအချက်များကြောင့်တွေ့ရန်အဆင့်	နည်း အလယ်အလတ် မြင့်
	ပုံမှန်သုံးစွဲခြင်းသည်	
	အရွယ်မတိုင်ခင်အိုမင်းရင့်ရော်ခြင်း အသက်ရှူလမ်းကြောင်းဆိုင်ရာရောဂါနှင့်ပန်းနာရင်ကြပ် သွေးတိုးဆီးချို ခံတွင်းနှင့်ပတ်သက်သောအနာများရောဂါများ ကျောက်ကပ်ရောဂါ အသဲရောဂါ နှလုံးရောဂါလေဖြတ်ခြင်း ကင်ဆာ	

ည. ဘိန်း	အောက်ပါအချက်များကြီးတွေရန်အဆင့် နည်း အလယ်အလတ် မြင့်
	ဘိန်းပုံမှန်သုံးစွဲခြင်းသည်
	ယားယံခြင်း၊ ပို့အန်ခြင်း
	မူးဝေခြင်း
	ဝမ်းချုပ်ခြင်း၊ သွားများပျက်စီးခြင်း
	အာရုံရူးစိုက်၍မရခြင်း
	လိင်စိတ်နှင့်လိင်ပိုင်းဆိုင်ရာစွမ်းဆောင်ရည်ကျခြင်း
	မိသားစုအလုပ်အကိုင်၊ငွေကြေး အခက်အခဲများဖြစ်ခြင်း
	ဆေးစွဲခြင်း၊သုံးစွဲရသည့်ပမာဏများလာခြင်း
	ဆေးလွန်၍အသက်ရှူရပ်ပြီးသေဆုံးခြင်း

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