YANGON UNIVERSITY OF ECONOMICS

MASTER OF PUBLIC ADMINISTRATION PROGRAMME

A STUDY ON THE BETEL NUT & TOBACCO CHEWING HABITS IN YANGON (THINGANGYUN TOWNSHIP)

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EMPA – 32 (15th BATCH)

FEBRUARY, 2019

YANGON UNIVERSITY OF ECONOMICS

MASTER OF PUBLIC ADMINISTRATION PROGRAMME

A Study on The Betel Nut & Tobacco Chewing Habits in Yangon (Thingangyun Township)

A thesis submitted as a partial fulfillment towards the requirements for the degree of Master of Public Administration (MPA)

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February, 2019

YANGON UNIVERSITY OF ECONOMICS
MASTER OF PUBLIC ADMINISTRATION PROGRAMME

This is to certify that this thesis entitled **"A Study on The Betel Nut & Tobacco Chewing Habits in Yangon (Thingangyun Township)"**, submitted as a partial fulfilment towards the requirements for the degree of Master of Public Administration has been accepted by the Board of Examiners.

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ABSTRACT

The main objectives of this study are to identify the factors influencing the betel chewing habits and examine whether betel chewers are aware of the health risks associated with betel packets. This study was conducted in Thingangyun Township by collecting from 150 betel chewers by random sampling method. There is a municipal law enacted in 2013 stating that “dumping rubbish, spitting betel saliva, general spitting and depositing chewing gum in public areas carry penalties of one year in prison or fines ranging from K10,000 to K500,000”. The study reveals that most of the betel chewers are between 36 and 40 years old and they passed the high school. They work as the general workers and earn between 200,000 and 300,000 Kyats and usually spend for betel nut chewing more than 5,000 Kyats per month. The most influencing factor is the ease of buying betel packets. Most people have the moderate knowledge about betel risks such as mouth or throat cancer since they used to watch anti-chewing short videos, read anti-betel articles and saw some anti-chewing events. According to the Chi-square result, the knowledge of betel risks and intention to quit are strongly correlated while education levels and intention to quit do not have strong correlations. Therefore, in order to reduce betel packet consumption in the society, government officials should educate the anti-betel programs especially for the general workers. In additions, government should issue the law about betel shops and raise the tax for the betel packets so that ease of buying and affordability could be reduced.

ACKNOWLEDGEMENTS

First of all, I would like to express my profound gratitude to the Yangon University of Economics and Master of Public Administration Programme Committee for kindly permission for giving me the opportunity to study this MPA course. Next, I would like to express my deep gratitude to Professor Dr. U Tin Win, Rector, Yangon University of Economics for his kind permission to conduct this thesis.

I also would like to express my sincere wishes and gratitude to Professor Dr. Kyaw Min Htun (Retired, Pro-rector, Yangon University of Economics) for his insightful suggestions, advices and guidance for my thesis.

I am also grateful to Professor Dr. Daw Phyu Phyu Ei, Programme Director and Head of Department, Department of Applied Economics, for her invaluable supervision, constructive suggestion and unfailing interest for completion of my paper.

Afterwards, I would like to express my deep appreciation to my supervisor, U Thein Ko, Lecturer, Department of Applied Economics, Yangon University of Economics, for his kindness, helpfulness, patience, guidance and supervision throughout the preparation of this thesis.

As always, I must thanks to all the professors, associate professors and lecturers for conveying a great variety of knowledge and concepts of public administration during the two years study periods of MPA programme.

Last but not least, I deeply want to thanks to my family, for their love, great kindness, warm support and continuous encouragement me to complete this study.

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LIST OF ABBREVIATIONS

ICMR	Indian Council of Medical Research
MoHS	Ministry of Health and Sports
NGOs	Nongovernmental Organizations
OSMF	Oral Submucous Fibrosis
PHW	Public Health Wales
SLT	Selective Laser Trabeculoplasty
TAPS	Teacher Assessment on Performance Standards
WHO	World Health Organization

CHAPTER 1
INTRODUCTION

Betel nut is ubiquitous in Myanmar. Betel nut/quid chewing (Kun Yar) is a habit that is commonly practiced in Myanmar. Betel nut (paan, Areca nut) chewing existed in Myanmar (Burma) since ancient times and it was done by both the kings and princes in the Burmese court and also by the ordinary people. The Burmese kings used golden containers studded with jewels to put the ingredients for betel quid (betel nut, betel leaf, caustic lime, and tobacco), whereas the common people used a lacquer ware box.

The nut is chewed alone or in a quid form. The quid is prepared by wrapping chopped areca nuts (betel nuts) in a leaf of the vine, Piper betel. Tobacco and lime may be added to improve the taste. The quid is known colloquially as ‘pan’. In addition, a variety of condiments are added to the quid including fennel sweets, coconut, honey/syrup and catechu. Furthermore, spices—such as cardamom, saffron, cloves, aniseeds, turmeric, and mustard—or sweeteners may also be added as flavorings. The choice of quid preparation depends on personal preferences. The chewing habit is enjoyed among all sections of society, including men, women and quite often, children. It tends to stain the lip and the teeth red but this does not signal bad aesthetics in Burmese culture. Many people chew betel incessantly, despite half-hearted government attempts to curb the practice, or at least to stop the spitting associated with chewing. The streets are covered with big red blotches because, when locals finish chewing their quids, they hawk red gobs and streams of juice onto the roads and walkways, permanently staining the concrete. Today, in Myanmar, there is a ban on spitting betel juice in public places. But, the Burmese love the betel nut so much that tens of thousands of acres are dedicated to its cultivation. Consequently, the number of betel nut stalls is also growing in towns and cities across Burma.

1.1 Rationale of the Study

Various compounds present in the nut, most importantly are coline, are carcinogenic and contribute to histological changes in the oral mucosa. People who chew betel nut are 10 times more likely to have oral cancer than those who do not. About 90% of males with oral cancer in Myanmar had histories of habitual betel nut chewing. Chewingpaan causes oral sub mucous fibrosis (OSMF), a precancerous lesion that lies on the causal pathway to oral cancer.

The habit is associated with oral cancer, oral leukoplakia and oral submucous fibrosis (OSF). It is important to make people aware of the harmful effects of areca nut/quid use. However encouraging people to abandon the habit, may not be so simple, as areca nut is said to be the fourth most commonly used psychoactive substance in the world, after caffeine, nicotine and alcohol, and several hundred million people use it (Gupta, 2004).

Even though it has been proved that chewing betel nut causes oral cancer, there are very few education or intervention programs in Myanmar. Monks, men, women, and even kids as young as 10-year-olds chew betel nuts in Myanmar. Myanmar has the highest prevalence of betel nut chewing in the region - about 51.4% of adult males chew paan daily. Compared to this, 32.9% of adult males in India, 31.2% in Nepal, 26.4% in Bangladesh, 24.9% in Sri Lanka, 2.8% in Philippines, 1.3% in Thailand, 0.9% in China, 0.7% in Cambodia, 0.5% in Malaysia, and 0.3% in Vietnam chew betel nut.

In Myanmar, oral cancer is the fourth most common cancer among males and sixth most common among females. Oral cancer ranks second in cancer mortality among males. There are no laws in Myanmar that prohibit the sale of smokeless tobacco to minors or prohibit the sale of smokeless tobacco within 100 yards of schools.

Thus, Myanmar is still far from banning the practice of chewing betel nut. Currently, in the media, there are awareness campaigns in the form of public service announcements. This study will explore the relationship between the knowledge level concerning with betel nut chewing related diseases and influencing factors of betel nut chewing practices among people in Thingangyun Township, Yangon. Implication of the findings will help providing baseline information to the concerned local authorities for the necessary intervention, as well as for further study.

1.2 Objectives of the Study

The main objectives of the study are:

1) To identify the factors influencing of betel chewing
2) To examine the knowledge of betel risks, betel chewing practice and attitudes toward betel chewing.

1.3 Method of Study

This study focuses on people chewing betel nuts in Thingangyun Township Yangon. Descriptive method is used in this study. Both primary and secondary data are used. In order to collect the primary data. A survey was conducted with structured questionnaire among the respondents of 150 betel chewers in Thingangyun Township by random sampling. The secondary data was also used such as lecture books, reference books, website and annual government reports.

1.4 Scope and Limitations of the Study

This study only focuses on health awareness of betel chewers and buying behavior factors. This study only covers betel chewers in Thingangyun Township Yangon. This study does not cover the other regions in Yangon since this study is done by collecting from 150 people only as sample representatives.

1.5 Organization of the Study

This researched is organized into five chapters. Chapters 1 is an introductory one that presents rationale of the study, method of the study, scope and limited of the study and organization of the study. Chapter 2 presents with literature view of betel chewing and related studies. Chapter 3 describes the current situation of betel chewing in Myanmar. Chapter 4 consists of the analysis of findings. Chapter 5 presents the part of the conclusion, suggestions, and needs for future research.

CHAPTER 2
LITERATURE REVIEW

This chapter presents the related literature review for the chewing betel nuts. The literature review covers betel nuts, compositions of betel nut, betel chewing habits, influencing factors, and risk factors in terms of socioeconomic.

2.1 Betel Nut and Betel Quid Chewing

Betel nut is the dried, ripe seed of the palm tree Areca catechu (Palmae). The nuts, slightly larger than a chestnut, have a faint odor when broken open and a somewhat acrid taste. Betel nut is a seed of the areca palm tree also known as areca nut, Gua or Supari, it is traditionally cut into small pieces and chewed. Betel nut use is embedded within the socio-cultural aspects of the Pacific, South East and South Asian community at home and in the diaspora. It is the fourth most commonly used drug worldwide after tobacco, alcohol, and caffeine. It is estimated that 10% of the world's population uses betel nut0F1. The perceived benefits of betel nut use include being used as a mouth refresher, laxative, stimulant, an aid for relaxation and coping with stress.

The nut is chewed with a betel leaf (Piper betel) from an evergreen perennial vine, a small amount of either lime (calcium oxide) or slaked lime (calcium hydroxide), and catechu - a dye extracted by boiling the Areca tree bark in water. Various flavoring ingredients, such as cardamom, cloves, licorice, peppermint, grated coconut, fennel seed, and sugar syrup are added to betel-quid and tobacco might be included. The betel leaf is used to wrap up the ingredients into folded packet, commonly called a quid, which is then chewed.

Betel nut may be used in a variety of ways (fresh, dried or cured) with or without tobacco. It is commonly packaged in a betel leaf with additives, betel nut, loose tobacco, lime paste and other flavorings. This is known as a betel nut quid (pouch) or paan quid tobacco. It is placed in the mouth and held against the cheek and molar teeth. The betel quid is periodically chewed to extract the juices5F6.

Commercially manufactured dry betel nut includes paan masala, supari, gutkha with or without tobacco4, 6F7, 7F8. This type of betel nut is gaining popularity among the younger population due to its appealing colorful sachets with attractive brand names.

2.1.1 History and Characteristics of Betel Quid Chewing around the World

Betel nut chewing is an indigenous habit common in habitats of the tropical palm trees bearing the nut, notably in Central, South, and Southeast Asia, and some South Pacific islands. It is estimated that the habit is practiced by 200-600 million persons around the globe, accounting for10-20 percent of the world's population'. With the growing number of immigrants from those areas, consumption of areca nut is increasing in western Europe and North America, where areca nut chewing, compared with tobacco use and alcohol intake, remains an under recognized public health issue. In Kenya the practice is widespread among the Asian communities.

The habit of chewing betel quid/areca nut has been reported from many countries including

Pakistan, Sri Lanka, Bangladesh, Thailand, Cambodia, Malaysia, Indonesia, China, Papua New Guinea, several Pacific islands and migrant populations like those in South Africa and Eastern Africa, the UK, North America and Australia (Guptaand Warnakulasuriya, 2002). The chewing of betel quid is practiced in several different ways in various countries, while the major components are comparatively consistent (Lee, Ko, Huang, Chao, Tsai, Shieh and Lin 2003). Betel nut chewing habits still continue among the South African Indian population. The Indian populous in South Africa is 1.2 million with Durbanhaving the largest population of Indians outside India (Statistics South Africa, 2005).

In South Africa the piper betel vine is locally grown, but the areca nut is imported from India. Areca nut is chewed on its own or in a quid form. For the quid, the areca nut is cut into pieces or shaved into thin slivers that are added to a mixture of coconut, sweets, fennel seeds, cardamom, syrup, lime or tobacco that may or may not be added depending on personal preferences. The latter ingredients are then wrapped in a betel leaf or the leaf is made into cone shape and the preferred ingredients are filled into the leaf. The areca nut is eaten raw, baked or boiled. Areca nut and condiments are available at the leisure markets, a selection of Eastern restaurants, paan shops and supermarkets. Traditionally, the betel nut and condiments are offered to guests on a tray or packed in little bags or boxes at weddings and

christenings. Culturally, areca nut and betel leaf are first offered to the Deities (Hindu Gods) and then consumed. In the city of Durban (S.A), it was found that 30.7% of women practiced the chewing habit while only 5.5% of men were chewers. The habit was more common in the elderly, 71.9% of women over 60 years and 10.3%of men in the same age group (Seedat & Vanwyk, 1988).

In Malaysia, betel quid usage is highest among indigenous groups, who also add tobacco to the quid. In mainstream/urban Malaysian society, the ethnic Indians incorporate tobacco in betel quid, but the Malays do not (Gupta, 2004). In rural Sarawak, areca nut is essentially an item of local produce. Areca nut is known as pinang. It was reported that 22% of men and 47% of women used areca daily. The habit tended to begin in young adulthood and women were more regular chewers than men (Strickland and Duffield, 1997; Gupta and Warnakulasuriya, 2002) and nearly a quarter were current chewers. Again, the habit was more prevalent in women. Malay quid users do not use tobacco in their quid mixture (Gupta and Warnakulasuriya, 2002).

In Sri Lanka the habit of areca chewing stems from ancient times and traditionally it is chewed with a betel leaf sprinkled with lime. Tobacco may be added to the quid. The betel leaf is usually chewed with one or more of three other ingredients, namely, areca nut (Areca catechu), lime (calcium hydroxide), and the leaf of a special grade of tobacco (Senewiratne, 1972). A largescale epidemiological study in rural villages in the Central Province of Sri Lanka, reported that half of men and women chew the betel quid (Warnakulasuriya, 1992). In a nationwide survey (1994-95) of 4000 adults over 35 years of age, the reported prevalence was 33.7% among 35-44 years old and 47.7% among 65-74 years old (Ministry of Health, 1998).

In Kerala, India, raw areca nut, tobacco and shell lime are preferred. Typical users smear one or two betel leaves with shell lime and place them in their mouths, and while chewing a few pieces of areca nut are added. About 5 g of tobacco from a strip are then snapped off by hand or cut with a knife and added to the bolus in the mouth. The bolus is kept in the mandibular groove. On average a person may chew a quid five to ten times a day (Bhonsle, 1992).

In Vietnam betel quid chewing is still prevalent. However, the chewing habit is said to be on the decline. Only 6.7% of the female population still indulges in the habit. The association of betel quid chewing and oral cancer is still of important,

however Reichart and Nguyen (2008) believe that eventually the betel quid chewing habit will vanish from Vietnam and only play a role in socio-ritual contexts.

In Guam, unripe areca nuts are chewed by themselves or with betel leaves. Some habitual chewers in Guam add smokeless tobacco (Gupta, 2004). In Papua New Guinea, betel quid chewers apply the lime separately with a spatula to the commissure of the mouth (Pindborg, Murthi, Bhonsle, and Gupta, 1992). Among aboriginal groups of Southeast Asian countries, betel quid chewers commonly add tobacco to the quid and additionally smoking habits are also common among such populations (Gupta, 2004). Areca nut is known here colloquially as daka. Lime is available in the powdered form (Gupta and Warnakulasuriya, 2002).

The hill tribes of Thailand, Cambodia, Myanmar and Laos include condiments like cloves, cinnamon and the roots of certain local plants in their betel quid (Awang, 1983). In Thailand areca nut is known colloquially as make (Guptaand Warnakulasuriya, 2002). In most countries, the habit appears to be confined to the elderly, while retaining ceremonial value in some areas. In Thailand, a decline was recorded several decades ago (De Young, 1995) and reconfirmed recently (Reichart, 1995).

Betel chewing enjoys island-wide popularity among the 20 million inhabitants of Taiwan and the number of current and ex-users was estimated at 2.0 million. An increased consumption has been reported especially among children and youth, due to an upsurge in marketing and production of areca nut and the sale of ready-made quid in the shops. Lu, Lan, Hsich, Yang, Ko and Tsai (1993) reported that among 2442 junior high school students in Changshua country, 6.4%, 3.7% and 3.0% of students in rural, semi-urban and urban areas respectively were chewers. More than half of the habitual chewers first tried it with a family member, most often the father or grandfather (Lu et al., 1993). In other school surveys in Taiwan, betel quid use was found to be more common among boys than girls and among students who smoked, consumed alcohol and had friends who chewed betel quid (Lu et al., 1993 and Yang, Su, Suand Ko, 1996; Ho, Gee, Tsai, Lo and Wang, 2000). In Taiwan, the betel quid is prepared in two different ways. In one, used mainly by Aborigines, fresh areca nut was simply wrapped with betel leaf and in another, popular mainly among Chinese, a lengthwise piece of betel fruit and a lime paste was sandwiched between two halves of an areca nut. A high proportion of chewers also smoke and drink, but tobacco was not chewed together with the betel quid (Ko, Chiang, Chang and Hsieh 1992). They

also consume Laohwa quid, where a split areca nut is sandwiched with the inflorescence (flower) of piper betel Linn, spiced with red lime. Another preparation, the stem quid, where a split areca fruit is sandwiched with the stem of the piper betel Linn, spread with white lime is used exclusively by Aborigines in a home grown environment (Wen, Tsai, Cheng, Chen, Levy, Yang and Eriksen, 2005).

Apart from the Province of Taiwan, betel chewing is also found on the Chinese mainland commonly in the Hunan and Hainan Island Province (Zhang and Reichart, 2007). The areca nut chewing is carried out in the following way: the betel fruit is cut in orange-like slices and peeled. On a betel leaf from piper betel, slaked lime is smeared. The areca nut and the betel leaf is then placed in the mouth and chewed. The Chinese do not chew tobacco together with the areca nut, in contrast to other countries (Pindborg, Kui-Hua, Chin-Ren and Fa-Xing, 1984). In Xiangtan, Hunan province, the betel quid chewed usually does not contain areca ‘nut but consists of the husk (Zhang, Li, Liao and Reichart., 2008).

In the Pacific island of Palau, areca nut is chewed in the green unripe state, one half at a time with slaked lime (made from fire-burned coral) and tobacco, wrapped in a piece of betel leaf. The ingredients for a single chew (including tobacco from half a cigarette) are sold in many shops. A prevalence study conducted in 1995 on 1110 residents of two states, found that 72% of males and 80% of females chewed areca nut (betel quid), 80% of whom incorporated tobacco in their quid (Gupta, 2004).

In Cambodia, most users add tobacco to their quid, while others use it to rub the gums/clean the teeth after chewing betel quid. Most users are elderly women. In a community based study, over a third of women over the age of 15 years chewed betel quid. Most of the women chewers were above the age of 39 and men over the age of 50. Smoking was the most prevalent tobacco habit in men, but was uncommon in women. The betel quid is usually chewed first and then a large wad of finely cut tobacco is used to clean the teeth. It is then kept in the mouth for a period of time (Gupta, 2004).

2.1.2 Compositions in Betel Quid

Betel quid is prepared in many different ways especially so in India. The most common way is to use half a large leaf, one medium or two small-sized betel leaves, smear them with slaked lime and a small amount of a catechin-containing substance

(catechu, gambir, or kath, but not in the southern region), along with pieces of areca nut.

Only ripe areca nut is used, usually after curing (generally by roasting or boiling in water). Betel quid can be prepared plain (or astringent) or sweet. Sometimes cardamom and often tobacco are added to the plain variety. In the sweet variety, cardamom, cloves, coconut, sugar crystals, camphor, amber, nutmeg, mace and even coloring agents are commonly added. In north eastern parts of India, fermented areca nut called 'Tamol' is frequently used. Habitual users generally include tobacco, which can be raw and unprocessed or processed with a mixture of spices and often sweetened with unrefined sugar or artificial sweeteners and flavored (Gupta, 2004).

Globally there are wide variations in the ingredients and preparation of betel quid. Areca nut is obtained from areca catechu (Gupta, 2002). There are several forms of areca nut (green unripe; baked roasted or boiled; fermented; or processed with sweeteners and flavors), betel (leaf or inflorescence) and ingredients consisting of spices, condiments, tobacco and lime (Gupta, 2004).

Globally, areca nut is most commonly accompanied by the leaf of Piper betel. This has led to areca nut being labeled erroneously as betel nut in the English literature. Apart from the leaf, other parts of the betel vine, such as stem, inflorescence (flower; pods) or catkins are also consumed with the areca nut. Consumption of the inflorescence is common in Melanesia and in parts of Taiwan (Gupta, 2002). Lime (calcium hydroxide) which is often used in combination with areca nut is obtained in coastal areas by heating the covering of shellfish (sea shells) or harvested from corals. In central areas of a country it is quarried from limestone. In Asian markets lime is sold as a paste mixed with water which is white or pink. Catachu is an extract of the Acacia tree A. catechu or A. suma. Catachu is often smeared on the betel leaf that is used to wrap the areca nut flakes (Gupta, 2002).

2.1.3 Betel Chewing Habits

Betel quid chewing has been claimed to produce a sense of well-being, sweeten the breath, dispel nausea, remove intestinal helminthes, strengthen gum, satisfy hunger, promote digestion, reduce depression, etc. Women claim that betel quid chewing in the first trimester of pregnancy can give relief from pregnancy-

related nausea. Information is scarce, however, regarding effects of BN use on pregnancy outcomes and nutritional status.

2.2 Influencing Factors on Betel Nut Chewing

There are many influencing factors that motivate people to chew betel nuts. It is very important to find out those factors in order to give people knowledge and reduce the betel chewing habits.

2.2.1 Demographic Factor

According to Lu et al (1993), the prevalence was much higher in boys than in girls, increased with age and decreased with increasing achievement level. Also, students with at least one family member who chewed areca nut had a higher prevalence than those with none. Of the chewers, 40.5% were smokers and 21.5% were drinkers. The chewing of this substance is widely prevalent in all areas of the city due to its low cost and easy accessibility. Betel nuts are consumed in the form of betel quid (commonly known as paan in Pakistan), gutka with or without tobacco and as an ingredient in small sachets of supari. These are available at various shops in different regions of the city. Furthermore, the impact caused by the promotion of betel nuts by celebrities is immense, leading to its increased usage. Chewable products containing betel nuts which are industrially produced are also gaining popularity, particularly among the younger population, due to the colorful, appealing sachets with attractive brand names like Shahi (Royal).

2.2.2 Peer

By analyzing betel nut chewing behavior, it was found that most students started chewing betel nuts because of curiosity, and most obtained betel nuts from their friends and classmates. Betel nut chewing behavior is definitely related to peer pressure. Common factors influencing betel nut chewing were curiosity and peer pressure, and betel nut mostly obtained from friends and classmates at the beginning (Wang, Tsai, Huang and Hong, 2003).

According to Mahant et.al (2015), peer habits were found to be determinants for high prevalence of betel nut chewing habits among adolescent boys and girls in an industrial town of Assam, Indi. Similarly, close friend indulging in substance intake

or forcing them have an increasing influence on the adolescent boys and girls like any other substance use.

2.2.3 Family Factor

Parental smoking has been shown to be an important factor in developing the smoking habit of adolescents. In this national survey, if a father was a smoker or a betel quid user, the likelihood of children chewing betel quid increased by more than twofold. This finding reaffirmed the importance of adult smoking behavior in influencing the betel quid use by children, and gave further credence to the important implications of smoking cessation in reducing betel quid use.

Betel quid is immensely popular across Asia and the Pacific (and among immigrant communities worldwide) for several reasons. Some chew areca nut for its psycho stimulating effects and other purported benefits, such as a sense of relaxation, enhanced alertness and ability to concentrate, improved digestion, and sense of euphoria. Different ethnic groups believe that betel quid chewing is a “miracle cure” for diseases able to relieve pain, reduce fever, strengthen teeth, and prevent indigestion, with added aphrodisiac properties. In some parts of Southeast Asia and India, chewing betel quid has religious connotations. Across all socioeconomic strata of Indian society, betel quid is believed to be a harmless “mouth freshener”. Moreover, some populations consider the distinctive red stains on teeth culturally fashionable and a sign of beauty.

2.2.4 Culture

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2.2.5 Media Advertisement

According to (Bansode, 2002), tobacco products, including those containing areca nut (gutka, mawa, and pan, i.e. betel quid), among non-teaching university personnel in Mumbai included peer pressure, the media (TV, advertisements, films, sports). He found that advertisements were the second most important source among the influencing factors. Furthermore, Shah, Qureshi, and Azam, (2008) found that media or electronic advertisements and too much marketing of betel nut in small eye catching and low cost sachets has greatly enhanced the sales of these products.

Advertisements of various smokeless tobacco products are very common in all forms of media including the print media, television, and the roadside hoardings and banners. Advertising and promotion effectively target the young people with images of consumers as trendy, sporty and successful. Characters in the movies or television serials often demonstrate chewing betel nut as a routine of daily life. They sometimes even show cigarette lighting ways using different tricks. These scenes often attract the impressionable mind of the adolescent to use similar tricks or adopt similar behavior. For a child or an adolescent growing in a stressful home, television show and movies are a means of finding out what a normal life is about. He or she is likely to begin smoking or chewing betel nuts after watching such visuals. (Qureshi, Dawani and Shaikh, 2013).

Due to very positive advertising strategies and aggressive campaigns, some BN products have become very popular among all population groups, even among children in many south Asian counties and in migrant communities living in the United Kingdom. Pan masala, Gutkha, and Zarda are such type of products. Pan masala is basically an industrial betel nut product containing cardamom, lime, and a number of flavoring materials. Gutkha is a type of pan masala, which also contains flavored chewing tobacco. Both products are often sweetened to enhance the taste. Zarda is a type of flavored chewing tobacco, which is popular in many countries in South Asia. (Kader, 2013)

2.2.6 Street Betel Vendor

Street vendors also have effect on people to start chewing betel nuts. Ease of buying without age limit strongly motivates young people who are curious to start mis-behaviors. Many developing countries have those shops at every street corner.

Some shops are near the schools and universities thus many students test the betel nuts and smoking after or during the school hours.

2.3 Risk Factor Associated with Betel Chewing

There are a lot of risk factors associated when people chew betel nuts. Most people do not have awareness of those risks. Government and WHO are trying to get the awareness of people for those risks so that people will avoid betel chewing.

2.3.1 Health Impacts of Betel Nut

Betel nut consumption affects the body by stimulating the nervous system and dilating blood vessels. The physical effects from chewing betel nut include increased heart rate and sweating. Betel nut consumption also aids digestion and the absorption of food by increasing the muscular activity in the intestines. In developing countries, there is evidence that some people chew betel nut to suppress their appetite. Low-income betel nut chewers may satiate their appetites through betel nut to avoid buying food. The “attraction” of chewing betel nut is that it produces a psycho-stimulating and euphoria-inducing effect for the consumer. The majority of chewers experience those effects within five minutes and the experience lasts for approximately two to three hours (Chu, 1993).

Guha (2006) argues that betel leaf has been used to treat various ailments, such as halitosis, boils and abscesses, constipation, headaches, itches, mastitis, conjunctivitis, ringworm and rheumatism. Reported health impacts differ between cultures. Reid (1985) reports that betel nut consumption has allegedly prevented burping after meals, diarrhoea, dysentery and scurvy. In some societies, it is reported to aid menstruation. It can increase the capacity for physical exercise and mental sharpness, lessen fatigability and provide a sense of well-being (Deng et al, 2001; Guha, 2006; Hirsch, 1990; Williams et al, 2002). It is also reported to be an aphrodisiac (Williams et.al, 2002).

Betel nut has long been used in Chinese medicine, primarily to rid parasites, such as roundworms and tapeworms, in the intestinal tract (Reid, 1985; Zhang and Reichart, 2007). However, because of its addictive nature, chronic daily use often occurs as users attempt to avoid withdrawal symptoms (Gupta and Warnakulasuriya, 2002).

In contrast to the reported positive health impacts, betel nut consumption has been proven to cause oral cancer and cancer of the oesophagus. Other research has shown that betel nut consumption leads to asthma (Taylor et al, 1992) and cancer of the pharynx (Lee et al, 2005). There is evidence that it provides a low level of toxicity in chewers (Deng et al, 2001) and can have adverse effects on new born of chronic betel nut users (López-Vilchezet al, 2006; Sennet al, 2009). Tests done on betel quid chewers show that they tend to have higher blood pressure than non-users and suffer from hypertension (Heck et al, 2012). The spitting of betel nut juice indiscriminately in public places helps transmit and spread respiratory infections (Williams et al, 2002).

Regular chewers of betel leaf and areca nut have a greatly increased risk of developing a range of serious diseases, including oral and esophageal cancer. In India, for example, approximately 30 percent of oral cancers are attributed to the use of smokeless tobacco and areca nut, and an additional 50 percent of oral cancers to the combined use of tobacco/areca nut, and smoking.

According to the National Institutes of Health's Medline Plus, long-term chewing of areca nut alone has been linked to oral submucosal fibrosis, which is a precancerous lesion that stiffens the soft pink tissue that lines the inside of the mouth and can eventually result in the loss of jaw movement — an incurable condition. Other health effects of areca nut use include pre-cancerous oral lesions and squamous cell carcinoma, with a higher risk of cancers of the lip, mouth, tongue, pharynx, liver, esophagus, stomach, prostate, cervix, and lung. Use of areca nut can affect blood sugar levels, which in turn can increase the risk of developing type 2 diabetes; the acute effects of betel chewing include asthma exacerbation, hypertension, tachycardia, and chronic kidney disease. Areca nut chewing has also been associated with increased risk of cardiovascular disease and adverse reproductive health outcomes, such as the increased risk of having a low birth-weight infant.

A recent report of the National Cancer Registry Programme (ICMR) showed an increasing incidence of cancer of the buccal mucosa ('mouth cancer') for six to ten years up to 2009 or 2010 in five of the nine population-based cancer registries (NCDIR-NCRP, 2013), reiterated by a similar trend in a single registry (Gupta, Clauder-Münster, Klaus, Järvelin, Aiyar, Benes and Steinmetz,2014). The cancer registries located in Bhopal, Mumbai, Delhi, Dibrugarh and Ahmedabad rural and urban, in the states or territory of Madhya Pradesh, Maharashtra, Delhi Union

Territory, Assam and Gujarat, respectively have high prevalence of high areca nut use (IIPS & MOHFW, 2010). In addition to the increased incidence, patients of oral cancer are younger than 35 years of age since themid-1990s as compared to the mid-1980s (Gupta, 1999).

If these risks were not enough, prolonged chewing of betel quid can have harmful effects on dental hard tissues, which include teeth, their supporting periodontium, and the temporomandibular joint (TMJ), as well as dental soft tissues, which make up the mucosa that lines the oral cavity. As a result, habitual betel quid use can cause excessive tooth abrasion and fractured teeth, permanently red or black stained teeth, periodontal disease (including gum irritation and tooth decay), and, as mentioned above, a host of pre-cancerous oral lesions.29 Unsurprisingly, when betel quid is used with tobacco, either chewed or smoked, health risks are only compounded.

Finally, prolonged use of betel nuts can be addictive. Recent research has found that the nut's active ingredient, arecoline, acts on the same receptor proteins in the brain as nicotine. As with nicotine cessation, withdrawal symptoms include mood swings, anxiety, irritability, reduced concentration, sleep disturbance and craving.

2.3.2 The Socioeconomic Impacts of Betel Nut

The consumption of betel nut can have profound socio-cultural and economic impacts on an economy. Users start relatively early in life in the Federated States of Micronesia, 12 years was the mean age of initiation and those school-aged children had already reported symptoms of poor oral health (Oakley, Demaine and Warnakulasuriya, 2005). Betel nut usage is also highly associated with the chewing of tobacco (World Health Organization, 2012). This can compound the negative health effects of betel nut consumption. In developing countries, costs associated with betel-nut related illnesses have the potential to drain public funds.

Income spent on betel nut among populations in developing countries can divert funds away from basic necessities. These basic necessities, such as electricity and water, may already be too expensive for some households or in limited supply due to poor infrastructure. Thus, household expenditure on betel nut can contribute to an even poorer standard of living. The World Bank (2014) notes that Solomon Islands currently have one of the lowest rates of electricity access in the world and some of the highest electricity prices (greater than $0.80 per kWh). In Honiara, which

accounts for about 90 percent of the country's electricity generation and consumption, only 64 percent of the households are grid connected. In terms of access to water, in 2011, the World Bank reported that only 79.2 percent of the Solomon Island population had access to improved sources of water (World Bank, 2014b). J. Maebuta and Maebuta (2009) found that households in Solomon Island squatter settlements spend an average of 8.4 percent of their annual income on betel nut. In this same study,96.6 percent did not have electricity and 92.3 percent had no water supply to their home, often because those services were too expensive. School fees were perceived to be too high, and, as a result, squatter households could not afford to send their children to school (J. Maebuta and Maebuta, 2009).

In Papua New Guinea, Gibson (2000) found that the average share of total expenditure spent on betel nut was 3.66 percent for rural households and 2.09 percent for urban households. Gibson notes that, along with fish, banana, and sweet potato, betel nut is one of the most important locally produced items in the diets of people from Papua New Guineans. The chewing of betel nut also has cultural implications. The mild psychic and euphoric effect can aid the reconciliation process of negotiation among disagreeing tribes. Betel nut consumption is closely linked with speechmaking, authority and politics in Papua New Guinea (Hirsch,1990). At times, it has been used for healing, gifts and cementing relationships, and as a welcome offering (Chen, Johnson and Tukutau, 1999). It has symbolic significance in many cultures and is consumed when paying homage, recognizing courtships, betrothals and marriages and at funerals and an cestral remembrances. Increasing urbanization may be contributing to the increased demand for betel nut, as betel nut cannot be grown in sufficient quantity in urban areas. (Guha, 2006).

In Bangladesh (Heck et al, 2012) and in Taiwan Province of China (Ko et al, 1992), researchers found a negative relationship between betel nut consumption and education level and employment. With regard to Indonesia, Reid (1985) says that males have switched to tobacco smoking while females have not embraced tobacco smoking to the same extent. Rural communities consume more betel nut than urban communities.

2.4 Polices Concerning about Betel Quid

The health, social and economic burdens of tobacco use – in all of its forms – are devastating. The use of tobacco with areca nut, commonly referred to as betel nut,

has played a significant role in the increased incidence of adverse health effects among its users in many countries. (WHO IARC, 2004).

`A Technical Report developed by the WHO Regional Office for the Western Pacific (2010), offers guidance for government representatives, nongovernmental organizations (NGOs), community organizations and health professionals in addressing betel nut and tobacco use. The report highlights a set of effective measures to prevent and control betel nut and tobacco use, include-ng:

- Policies and legislation
- Education and advocacy
- Strategies to promote behavior change
- Clinical services
- Surveillance and research
- Partnerships and alliances

The prevention and control of tobacco-chewing with betel nut poses some unique challenges since the production and sale of betel nut are not regulated in most countries. Production of betel nut is encouraged in some countries as a commodity for both local consumption and for export and has become a significant source of income in some Pacific island countries. Therefore, addressing supply-side issues for betel nut control will require multi-sectoral collaboration among ministries of health and other sectors of government and community stakeholders.

This highlights the need for clear messages for both policy-makers and the public regarding the dangers of betel nut and tobacco use. Meeting these challenges requires recognition of the magnitude of the problem in each country and a mobilization of different sectors to take action. Participants at the August 2010 meeting on betel nut and tobacco use have recommended the following set of Key Messages to communicate the dangers of betel nut and tobacco use and to stimulate action for effective measures to address this serious public health issue.

2.4.1 Legal Climate of Betel Nut Sales

The World Health Organization (WHO) has publicly stated that betel quid products pose a substantial health threat to the populations that consume them. The WHO specifically focused on the Western Pacific region, another geographic area where betel nut chewing is part of the social fabric of society. Betel quid products both with and without tobacco have been associated with increased incidence of oral

cancer. In fact, betel nut is classified by the International Agency for Research on Cancer (IARC, 2004) as a Group 1 carcinogen. The WHO concluded that a major effort needs to be undertaken to provide decision-makers with evidence of serious harm caused by betel nut chewing.

The WHO further added that public health measures, including policies and legislation, can save lives and prevent unnecessary suffering from oral cancer and other diseases (IARC Monograph 2004).

(i) India

In India, the government has required sellers to include a warning label on commercial areca-nut and tobacco products. However, there are no regulations about the size of the letters. Additional regulations, restrictions, and bans vary from state to state within India. For instance, gutkhahas been banned by Tamil Nadu, Adhra Pradesh and Goa state governments. Several other states are at various stages of considering and passing similar laws, and are fighting against industry figures. The Central Committee on Food Safety has recommended that gutkha be banned nationwide, although such a ban has not of yet been passed nationwide (IARC, 2004).

In 2002, the Commissioner for Food and Drug Administration and Food (Health) Authority of Maharashtra State banned the manufacture, sale and storage of gutkha and pan masala or any similar product containing or not containing tobacco (Sharma, 2000). The ban, as well as a subsequent one, was struck down by the Supreme Court, but more recent bans have been upheld and proven to be largely effective (Deshpande 2012, Wal2015).

(ii) North America

In Canada, areca nuts are listed on the schedule of herbs that are unacceptable as a non-medicinal ingredient in oral use products (Health Canada, 1995). In the United States, however, the Food and Drug Administration maintains an import alert within the USA, although the primary concern cited is the potential adulteration of the product and addition of unsafe food additives, rather than health concerns (Croucher& Islam, 2002). In 1976, the US Government banned interstate traffic of areca nut (Burton-Bradley, 1978). Additional localized restrictions exist in the US. For instance, possession of areca nut in the California public school system is grounds for suspension (Croucher& Islam, 2002).

(iii) European Union and United Kingdom

There are no specific laws or regulations regarding the sale or consumption of areca products, even when mixed with smokeless tobacco (Council of the European Communities, 2001). In the UK, no law regulates the import or sale of products containing areca nut. As a result, numerous areca preparations and betel quid variations, both with and without tobacco, are commercially available (Bedi, 1996; Vora, Yeoman and Hayter, 2000). Areca derivatives are particularly easy to acquire in the UK, partly due to its lax laws. In fact, the UK's Department of Trade and Industry classifies such products as sweets (Hogan, 2000). Additionally, the packaging often fails to properly include labels or list ingredients. Minors and children have little difficulty acquiring betel quid in the UK (Shetty& Johnson, 1999; Warnakulasuriya, Trivedy and Peters, 2002, National Centre for Transcultural Oral Health, 2001). By and large, packages do not include detailed health warnings beyond the statutory display regarding tobacco use. Among 20 commercially processed areca-nut products on sale in the UK, only three carried a health warning related to oral cancer, and none addressed potential addiction (Trivedy, 2001).

In additions, certain Southeast Asian countries have instituted outright bans or other restrictions on the consumption of betel quid. In Papua New Guinea in the late 1970s, the Public Services banned the chewing of betel quid in government offices (Burton-Bradley, 1978). In Singapore, spitting in public places is an offense punishable by a fine, thus discouraging individuals from chewing (and spitting) betel quid (Cheong, 1984). Betel quid, as well as its betel and areca components, are banned in the United Arab Emirates (United Arab Emirates).

2.5 Reviews on Previous Studies

This study mainly referred to the study "Betel Quid Chewing in Dagon East Township. Yangon" by (Zaw, Ohmar, and Hlaing, 2014). It aims to describe knowledge about and practice of betel quid chewing and compare prevalence of oral pre-cancerous lesions between betel quid chewer and non-chewers in Dagon (East) township. The study used a cross-sectional design and was conducted in Dagon (East) township, Yangon Region. The study population was persons aged 18 years and above of sexes but excluded institutionalized people (armed forces, hospitalized patients and monks), very ill persons and mentally ill persons. A pretested structured

questionnaire was used and the trained interviewers collected from the 542 respondents.

In their study, half of this population were currently chewing betel quids and this prevalence of betel chewing is quite high given the globally. Practice of current betel chewing was more prevalent in men (72%) than in women (39%). Extent of current betel quid chewing was highest (57%) in 24-44 years age group of the respondents as a whole but highest (46%) in 45-64 years age group among the women. Betel quid chewers mostly started betel chewing practice around 25 years of age, chewed 8 betel quids per day for 10 years or more. Most betel quid chewers spitted out betel quid juice Betel quid chewers usually discarded used betel quid onto the ground or building corner or whatever place available at the time. They chewed betel quids mainly because they want to ease sour sensation in the mouth' and they were addicted to betel chewing. In their study, multiple logistic regressions indicated that older age, betel chewing, especially with tobacco and consumption of alcohol were associated with risk of oral pre-cancer. The authors concluded that in conclusion, betel quid chewing was found to be a common habit in both men and women of the study population.

Based on the findings, the researchers suggested that an anti-betel quid chewing programme is warranted for current chewers. Education about betel quid chewing should be emphasized in the public prevention education. Regular screening for betel quid chewing may help prevent avoidable oral cancers in the future. As the habit is rooted in Myanmar tradition and culture, anthropological studies are indicated for designing appropriate educational campaigns. By mainly referred the above research, this study was thoroughly done.

CHAPTER 3
OVERVIEW OF CURRENT BETEL SITUATION OF MYANMAR

3.1 Brief History of Betel Chewing Tradition

Chewing the mixture of areca nut, and betel leaf is tradition, custom or ritual which dates back thousands of years from India to the Pacific. It constitutes an important and popular cultural activity in Myanmar, Cambodia, the Solomon Islands, Thailand, the Philippines, Laos and Vietnam.

Kun-ya is the word for paan in Myanmar. It is apparent that the habit already existed in Myanmar before the Bagan period (1044-1287). In 1147 Queen Saw inscribed a stone tablet dedicated to the Kunmi Pagoda, decreeing that paddy she donated be used as payment for betel nuts for monks in a monastery. 4 Until the 1960s, both men and women loved it and every household used to have a special lacquer ware box for paan, called kun-it, which would be offered to any visitor together cheroots to smoke and green tea to drink. The leaves are kept inside the bottom of the box, which looks like a small tin, silver in well-to-do homes, of various other ingredients such as betel nuts, slaked lime, cutch, anise seed and a nut cutter. The sweet form (acho) popular with the young, but grownups tend to prefer it with cardamom, cloves and tobacco. Konbaung period poet Lu(human) U Min wrote a poem that is concerned with the chewing betel, "Tada-U for the betel leaves, Ngamyagyi for the tobacco, Taungoo for the nuts, Sagaing for the slaked lime, Pyay for the cutch are chewed and spat out". It shows that Tada-U produces the betel leaves, Ngamyagyi produces the tobacco, Taungoo produces the areca nuts, Sagaing produces the slaked lime and Pyay produces the cutch. These products are found in these famous places in Myanmar.

Besides, in Lawka Ni Ti, Kuwaija Nat looks after the middle of the betel leaf, Ogre looks after the end of the betel leaf and devil looks after the top of the betel leaf. So, when we are chewing the betel, it is cut to the top and ends of the betel leaf will be increased glorification. According to that point, chewing a quid of betel culture has existed since the period of Bagan up to the present. In the countryside of Myanmar

houses had a betel box ready for visitors. Myanmar tradition of a quid of betel, cheroot and tea-leaf salad are served to the visitors that three items show welcome and loving kindness to visitors.

Our national museum proudly displays the paraphernalia connected with betel culture of Konbaung dynasty. Young maidens traditionally carry ornamental betel boxes on a stand called 'kundaung' and golden flower (Pandaung) in a Shinbyu (novitiation)procession. Besides, Betel leaf, areca nut and limestone have medical properties. According to Myanmar pharmacopoeia betel leaf oil can be used as de-worming agent. For treatment of many eye and digestive tract aliments fresh juice of betel leaf is used. It is a good germicide, it helps digestion. Areca nut (generally but mistakenly called betel nut) has astringent taste and qualities. It can stop bleeding. Adolescent girls are usually advised not to chew betel nut or betel quid while they have period. Lime can cure lumps and cysts. Cutch is good for gums, over sweating and fresh wounds.

In October 2009, 30 scientists from 10 countries met at the International Agency for Research of Cancer (IARC), a World Health Organization sponsored group, to reassess the Carciogenicity of various agents including areca nut, a common additive in Paan. They reported there is sufficient evidence that paan chewing, even without tobacco, leads to tumors in the oral cavity, pharynx and oesophagus.Since 1990s, betel chewing has been actively discouraged by successive governments from the State Law and Order Restoration Council (SLORC) onward, on the grounds of health and tidiness. Effective 29th July 2007, betel chewing, along with smoking, has been banned from the Shwedagon Pagoda, the country's most important religious site. In 2010, the Ministry of Education's Department of Basic Education and Myanmar's Anti-Narcotics Task Force collaborated to prohibit betel shops from operating within 50 meters (160 ft) of any school.

3.2 Production and Sales of Betel Nuts

While the land area used for betel nuts (areca nuts) remained about the same (12,000 acres) from 2000 to 2005, the land used for betel-vine leaves had been almost doubled from 9000 to 19,000 acres. Many small-scale betel-vine leaf growers termed this growth as the "Green Gold era." Since the tobacco is competitive with other cash crops, it is highly subsidized by cigarette companies, and its cultivation and processing are assisted by soft loans from private companies. There was a steady

increase in imports of tobacco products in the 1990s coinciding with increases in local production of all tobacco products reaching nearly 7000 metric tons of import by 2006.

There is a considerable import of SLT products through legal and illegal means, reflecting increases in overall consumption. Unethical trade practices have come up like mixing the original imported products with local tobacco, and repacking them under local brand names, and sold at significantly cheaper prices. One such product popular in Myanmar is "162 or Sardar.0" Most of the imported SLT product containers have a prominent health warning. For example, original tobacco containers from India had mandatory warning messages and pictures. Re-packaged local containers do not contain any comparable health warning, indication of ingredients or age-restrictions. Efforts should be prioritized for law enforcement as well as an amendment of the existing national law to include the control of SLT products, including repackaging and illicit trade.

(i) Marketing and Sales

Myanmar Tobacco Control Law has stipulated the total ban on advertisement, sale and distribution and sponsorship of cigarettes and other tobacco products. Despite this, the total numbers of SLT consumers have steadily increased, as a result of the uncontrolled proliferation of small and big road-side kiosks and stalls in every tea-shop selling cigarettes and betel quids. These kiosks and stalls have the posters and sale promotions for cigarettes and other tobacco products. Unlike other ASEAN nations, these SLT products are displayed and sold openly, acting as a point of sale advertisements strongly linked and controlled by the SLT wholesalers. Comprehensive bans on displaying, advertising and promoting the sale of cigarettes in all media have been implemented during the last several years. With the recent change in censorship policy, many scenes showing tobacco smoking and SLT consumption by movie stars in Myanmar films and videos (TV/VCD/DVD) have come back. Some reruns of old videos/films of foreign sources have censorship applied for smoking (blurring out cigarettes), yet the ban is not consistent. Banning the consumption of SLT products in the public media has not yet been implemented. Youths today perceive that sharing KunYar or cigarette is a friendly gesture of comradeship, as well as a break time activity.

The SLT products are sold in Myanmar in loose form or in plastic pouches, without mentioning either the "origin of the product," "the disclosure of contents" or the "health warning," due to lack of stringent regulation. At some super markets, ready-made betel quid preparations containing tobacco products, wrapped in plastic pouches in metal containers, are available as refrigerated items, except for a label indicating that the sale to under 18 years is prohibited. To ensure that points of sale of tobacco products do not have any promotional elements, the legislative framework needs to be strengthened to introduce proper package labeling, total ban on any display, and visibility of warnings on tobacco products at points of sale.

In 2007, chewing kun-ya, along with smoking, at the Shwedagon Pagoda was banned in order to help maintain the country's most important religious site. Betel chewing has always been forbidden by decree in government buildings and public spaces like schools and hospitals. Selling near them is also prohibited. In 2010, further laws were passed banning betel nut shops from selling within 50 meters of schools. Campaigns are currently in places that are aimed at removing betel nut stands from public places.

Government has issued circulations prohibiting sale and use of SLT in government compounds in 2011and 2016. Prohibited spitting chewed tobacco in public places, but still have low public compliance and weak enforcement. National Tobacco Control Program of MOHS has conducted educational campaigns on hazards of chewing betel quid with areca nut and tobacco (through posters, pamphlets, newspapers, television). Basic health staffs are trained for short advice for tobacco cessation and encouraged to implement at primary care level, but not covered nationwide yet.

(ii) Availability and Price

The SLT products are widely available at affordable price. Strategically placed kiosks are present at every public location including schools, theaters, offices, markets, hospitals, clinics, university campuses, bus stops, restaurants, etc., The increase in youth consumption of SLT could also be contributed to by the fact that vendors do not discriminate consumers by age. Children as young as 8-year-old are seen buying and consuming betel quid, hawking products, preparing them in stalls, and selling pre-packaged KunYar at major traffic junctions.

KunYar using local tobacco is sold for 100 Kyats for four pieces (or 0.025 USD per piece). If popular Indian tobacco products are used, the price of the quid becomes double. Each consumer of SLT can ask their vendors for a particular amount and type of tobacco for preparation of their own pieces. The price of KunYwet (Betel leaf) fluctuates between 5000 and 7000 Kyats per viss (roughly 1.7 k), varying with seasonal yield. Each viss of Kun yields on average 500 individual leaves, depending on the size and condition of the leaves, estimating the baseline cost of each piece of KunYar to be around 10-12 Kyats. If lime, betel nuts, tobacco, and other ingredients are added, the overall vendor cost of a basic piece of KunYar is estimated at around 15-20 Kyats. The average KunYar roadside vendor will use 2-3 visses worth of KunYwet daily while larger stores will sell up to 10-30 visses per day.

Average daily gross income from selling betel quids will range from Kyats 10,000/- to Kyats 50,000/-. The price of KunYar for 4 pieces (i.e. Kyats 100/-) remains affordable to low-income wagers, since average minimum daily wage for a manual laborer is around 2000/-Kyats. Some SLT users chew up to 100 pieces of KunYar per day spending large portions of their daily income. The average consumer of SLT, chewing 20 pieces of betel quids per day, would have been able to purchase five eggs or one kilo of rice.

3.3 Current Tobacco Control Measures

Betel chewing has officially been prohibited at offices, hospitals, schools, and public areas in Myanmar since May 2016, but the policy has done little to influence people’s behavior. In compliance with the 2006 Tobacco Control Law, some establishments that people used to frequent or attend (e.g. sport stadiums, hospitals, restaurants, and schools) have begun implementing "smoke-free" location rules, especially those located in townships that have begun complying with smoke-free initiatives. While smoking has the added danger of second-hand smoke, it is possible that due to the common misconception that SLT is less harmful, there is less emphasis on the control of SLT products in many places. In 2010, further laws were passed banning betel nut shops from selling within 50 meters of schools.

Under the existing law, advertising tobacco products, distributing cigars, cigarettes or other tobacco products free of charge, sponsoring sports and other exhibitions, or publicizing tobacco by any means is subject to a fine ranging from K20,000 to K50,000 for the first offence, rising to a maximum of K200,000 or two

years in prison for subsequent offences. Penalties also apply to anyone who tries to obstruct or assault officials trying to prevent smoking in a no-smoking zone.

The lack of urgency is misplaced because the proportion of SLT users is still significantly higher than that of smokers. Several establishments to which the general public including pregnant women and young children have access to have markedly begun posting "KunTa-twe MaHtweYa" (spitting of saliva from chewing Kun is prohibited) stickers, together with the "no-smoking" signs. Such places include hospitals and health centers, public gardens, guest houses, hotels, restaurants, bus stations, railway stations, religious places as well as schools. The main purpose of these signs is meant for esthetic reasons. The paradigm needs to shift from prohibiting spitting and disposing of SLT products to a total ban on consuming SLT in all public establishments - a shift from hygiene measures to the health measures. A sign such as "Kun Ma Sa Ya" or "The consumption of KunYar is totally prohibited" would be more appropriate for promoting tobacco control. Recently, collaborative efforts of the People's Health Foundation and the Ministries of Health and Education have started community-based actions to implement demand reduction measures by launching "100% Tobacco-Free areas" in selected townships.

(i) Tobacco Taxation

The average price per cigarette pack is US$ 1.18 in low-income countries, double in the Asia-Pacific, and triple in the developed world. Taxation on tobacco products in many low-income countries is an average of 50% of the retail price. In some middle- and high-income countries, tobacco taxation is used as part of comprehensive strategies to reduce tobacco use and the tax on tobacco accounts for two-third or more of the retail price.

At present, taxation on tobacco and tobacco products is included under items for taxation of commodities of commercial values as shown in Annexure of the Commercial Tax Law in Myanmar. Under the Union Taxation Law of 2014, a taxation structure for tobacco products local or imported remained as 100% commercial tax on cigarettes, 50% on raw tobacco, cheroots, cigars, and other tobacco products. While there is no taxation on locally produced areca nuts, there is a commercial tax of 5% for imported ones.

Despite the implementation in Myanmar of taxation on tobacco and tobacco products, it remains the lowest cost for tobacco products and has had little impact on

the sale and consumption of SLT products in Myanmar. Because the majority of tobacco users in Myanmar utilize SLT products, the policy should focus on increasing taxation in all respects of tobacco products, with specific reference to SLT products.

The sale of SLT products in Myanmar is very profitable for both the legal and illegal SLT product companies and the street vendors alike. SLT product importers in Myanmar, especially those who import legally and illegally from neighbors have well-established trade routes. Companies importing popular SLT products such as Bayinma (Queen), Signal, and 92, have maintained an extremely loyal customer base, and these products are spreading ubiquitously throughout Myanmar. Every street vendor of KunYar will almost always have 3-5 boxes of 2-3 famous brands in stock. In addition to the profitability of the industries producing SLT products, local vendors of SLT products continue to enjoy high income. A typical SLT vendor requires very little initial financial capital, and in return, enjoys sustainable and high profit margins. Commercial tax and profit tax are levied on all these vendors ranging from 0% to 50%, normally depending on the total sales value (cost of production plus overhead expenses). The trade of SLT products is a major industry that needs further study on production, sale, taxation, trade, social and economic aspects, and their regulation. If unchecked, the availability of these products will continue to grow and to be a major burden on healthcare in Myanmar.

While countries all around the world, both developed and developing, adopted taxation for tobacco products for general revenue, several nations introduced a different form of tax- an earmarked or dedicated taxation. This dedicated tax not only aids in reducing consumption of a particular product, but also the proceeds could be used to further reduce the demand. In most countries, it is exclusively referred to as taxes levied on tobacco, alcohol, and gambling. The revenue thus collected is usually spent on social welfare, social insurance, health, and other development activities. Such a system of taxation in Myanmar would be of great benefit.

Existing national tobacco legislation of 2006 covers mainly demand reduction, and thus, it needs to be updated with supply reduction, and thus, to become a comprehensive legislation, that would be in line with the WHO Framework Convention on Tobacco Control, and also in harmony with legislation of other ASEAN countries. Legislation could be strengthened with additional measures targeting availability and accessibility of tobacco products, especially SLT, illicit trade, legal provision for support to tobacco growers with economically viable

alternative activities, etc. It would also need to strengthen the regulation with respect to the limitation on contents and product disclosure, as well as health warning labels and advertising for all tobacco products.

Myanmar had signed the Protocol to eliminate illicit trade in tobacco products a year ago. This Protocol aims at eliminating all forms of illicit trade in tobacco products, and provides tools for preventing and counteracting illicit trade through a package of national measures and international cooperation. Myanmar has already implemented a suite of measures to secure the supply chain of tobacco products, like licensing for the manufacture, import and export of tobacco products and manufacturing equipment. It still needs to establish a national or regional tracking and tracing system for all tobacco products that are manufactured in or imported into its territory for the purpose of investigating illicit trade. In order to implement effectively the ASEAN Free Trade Agreement by 2015, countries involved need to sign this Protocol, as well as its related instruments, to eliminate illicit trade in tobacco products as soon as possible.

Appropriate price and tax control measures have to be implemented in order to raise the prices of tobacco products especially SLT since it is the most effective way to reduce consumption among youths and poor people. Price and tax measures should aim at increasing prices harmoniously for all tobacco products, both local and imported, in order to prevent substitution/smuggling. Effective enforcement and amendment of the law are needed, and a ministerial order which includes specific SLT products is highly recommended.

According to the existing volume and the low prices for tobacco and tobacco products, the tobacco industries in Myanmar may claim that their price structure is modest. In reality, the price for tobacco and tobacco products in Myanmar is one of the lowest among ASEAN and there is room to raise the price without affecting affordability to the poor who use those products most, and also benefiting millions of people using the tax revenue effectively. Myanmar health policy makers have to explore the potential feasibility of establishing innovative financing for health promotion by introducing hypothecated taxation of tobacco and its products, necessary for effective implementation of tobacco control measures and other health promotion activities.

Myanmar could implement similar measures for banning tobacco and nicotine from food products similar to the regulations of Food Safety and Standards Authority

of India adopted in 2011. In the interest of public health, a comprehensive ban on all chewing tobacco products should be enforced. The initiative and participation of national institutions, including those responsible for health policy, health systems research and strategic studies, essential for initiating the periodic collection of national evidence-based information on tobacco use-related knowledge, attitudes, and practices. Programs need to focus on shifting the community's perception of SLT, such as to change focus from hygiene to the health, and other misconceptions about SLT. Community-wide efforts on implementing No-Tobacco or Tobacco-free are required. Appropriate price and tax measures have to be implemented in order to raise the prices of tobacco products since this is the most effective way to reduce consumption. Ultimately, the legislation is possible, but not without the support and involvement of the people.

Regular monitoring and reporting mechanism for banning TAPS (including SLT) was established in 2014, but sustainable effort and taking appropriate actions are still challenging issues. Notifications released by MoHS with approval of cabinet in February 2016 on PHW also included provision for SLT products (75 % PHW). Efforts for raising tax on tobacco products also considered for SLT (current tax rate – 60 %). Illicit tobacco products including SLT are seized at border areas by multi sectoral control teams.

(ii) Municipal Law for Betel Spitting

There is a municipal law enacted in 2013 stating that “dumping rubbish, spitting betel saliva, general spitting and depositing chewing gum in public areas carry penalties of one year in prison or fines ranging from K10,000 to K500,000”. Now, many drivers are using plastic bags or bottles to spit the betel fluid. But some others are still breaking the law by spitting the betel quid on the roads or platforms.

3.4 Campaigns for Public Health Awareness

The government and non-government institutions spent a total of K250 million in its all-out campaign against betel nut chewing and tobacco use which started airing on television and radio stations. Government sends K 250 million for the production and presentation for the campaigns. The expenses for the campaign were shared by the government and some foreign institutions. To remedy that, the Ministry of Health and Sports and the People’s Health Foundation partnered with the global health

organization Vital Strategies, which specializes in strategic communication campaigns.

The Ministry of Health and Sports is collaborating with the People's Health Foundation in spearheading the campaign which with dramatic testimonials of four men, who contracted oral cancer because of their betel quid chewing habit. The campaign will run for six weeks in national television and radio with an aim to reduce death toll from betel chewing. In the coming years there are plans to expand the awareness campaign through articles in newspapers and campaigns in schools. The TV channels chosen for the campaign were: MRTV, MRTV-4, Myawaddy Documentary, and DVB TV. The radio stations where the campaign aired are City FM and Mandalay FM radio, as well as in Mingalar Cinemas in Yangon and Mandalay will also be showing programmes that will educate the public about the effects of chewing betel quids.

At the heart of the campaign are two 30-second public messages for television, a radio message and posters featuring real oral cancer patients. These patients had chewed betel quid for many years and now have seen their lives destroyed by tobacco-related cancer. All the patients consented to being part of the campaign. Today, Vital Strategies, in close cooperation with the People's Health Foundation, launched Myanmar's first mass media campaign addressing an age-old habit – chewing betel quid. Working with the Ministry of Health and Sports, the campaign is centered on a radio message and two 30-second TV ads that show in graphic detail the lives of real betel chewers who developed oral cancers from their habit. The message calls on Myanmar's citizens to stop chewing betel quid. The campaign will run nationwide on national radio and television for six weeks, but the government plans to make betel quid a major focus of its National Health Plan between 2017 and 2021.

The campaign is centered on two 30-second Public Service Announcements (PSAs) for television, a radio message, and posters featuring real oral cancer patients. These patients had chewed betel quid for many years, and now have seen their lives destroyed by tobacco-related cancer. All the patients consented to being part of the campaign. The PSAs end with a call to action, saying: "Avoid betel chewing, so you don't regret your life choices." The TV messages, posters and the radio message were tested rigorously in focus groups to ensure they deliver hard-hitting and culturally-appropriate messaging, in order to achieve a real impact in changing habits and attitudes towards betel chewing. Over 90 percent of the focus group found the

campaign to be ‘effective’, ‘relevant to me’, ‘taught me something new’, ‘believable’, and ‘makes me more likely to try to quit’. This is the first national health campaign in Myanmar to clearly show real-world victims of oral cancer, following in the footsteps of similar successful campaigns in India, Thailand, and Taiwan.

Charged with the task of trying to control quid chewers, the department procured the betel spit bags, which are worth K12 each. First, they tried placing plastic boxes filled with sand at junctions and bus-stops. Their latest scheme is the distribution of more than 100,000 red plastic bags, into which betel users are encouraged to deposit the contents of their mouth. The bags can then be thoughtfully disposed of. But street cleaning staff report that not a single bag has been found. But the spitter has to be caught in the act, or evidence to bring a prosecution is lacking.

Fining betel sellers has limited effect because they make enough money to cover fines. In additions, prohibition is not the main drive here. Rather, Myanmar is trying to convince users to quit. One betel addict reckons it will work. Campaigns are currently in places that are aimed at removing betel nut stands from public places. As a result this once high society tradition might soon find itself in the history books.

CHAPTER 4
SURVEY ANALYSIS AND FINDINGS

This chapter consists of five sections. Profile of the respondents in Thingangyun Township is presented by frequency and percentage as the first part. Secondly, it covers the influencing factors on betel chewing, and third section includes chewing betel nut Practice. The fourth section presents the awareness to the risks of betel chewing and the last section reveals the attitudes of the respondents towards betel chewing habits.

4.1 Survey Profile

Thingangyun Township is located in the eastern part of Yangon and has 11.4 km^2 (4.44 sq mi). The township comprises 38 wards, and shares borders with South Okkalapa township in the north, North Dagon township in the east, Yankin township and Tamwe township in the west, and Thaketa township in the south. The township has 40 primary schools, four middle schools and five high schools.

The township is home to Thingangyun Education College and University of Dental Medicine, Yangon. In Thingangyun Township, there are more females than males with 89 males per 100 females. The population density of Thingangyun Township is 18,383 persons per square kilo meter. There are 4.6 persons living in each household in Thingangyun Township. This is slightly higher than the Union average. According to 2014 Census, Thingangyun Township has 209,486 populations. Among them, there are 98,698 (47.1%) males and 110,788 (52.9%) females. The township has 100% urban population and the population density is 18,382.5 persons square kilo meter.

The median age of the township is 30.3 years. There are 43,320 numbers of private households in this township. This is slightly higher than the Union average. The proportion of productive working population between 15 to 64 years of age in Thingangyun Township is 73.0 percent. Fewer proportions of children and elderly

reduce the dependency of those age groups on the working age population. The birth rate has been noticeably declining in Thingangyun Township since the last 15 years.

School attendance in Thingangyun Township drops after age 12 for both males and females. Compared to the Union, the school attendance of males and females in Thingangyun Township is higher than that of the Union after age 12 onwards. The literacy rate of those aged 15 and over in Thingangyun Township is 96.9 percent. It is higher than the literacy rate of Yangon Region (96.6%) and the Union (89.5%). Female literacy rate is 95.8 percent and for the males it is 98.3 per cent. The literacy rate for youth aged 15-24 is 98.2 percent with 97.9 percent for females and 98.4 percent for males. Some 4.2 percent of the population aged 25 and over have never been to school. There are 2.5 percent of males aged 25 and over who have never attended school as against 5.5 percent for females. Among those aged 25 and over, 11.5 percent has completed primary school (grade 5) and only 25.3 percent has completed university/college education.

Labour force participation rate for the population aged 15-64 in Thingangyun Township is 56.1 percent. The labour force participation rate of females is 40.2 percent and is much lower than that of their male counterparts which is 74.5 percent. In Thingangyun Township, labour force participation rate for the population aged 10-14 is 5.2 percent. The unemployment rate for those aged 15-64 in Thingangyun Township is 4.8 percent. InThingangyun Township, 31.7 percent of the employed persons aged 15-64 are services and sales workers and is the highest proportion, followed by 19.4 percent in craft and related trades workers.

In Thingangyun Township, the proportion of employed persons working in the industry of “Wholesale and retail trade; repair of motor vehicles and motorcycles” is the highest with 21.7 percent. The second highest industry is “Accommodation and food service activities” at 12.9 per cent. There are 21.6 percent of males and 21.7 percent of females working in “Wholesale and retail trade; repair of motor vehicles and motorcycles” industry. In Yangon Region, there are 15.8 percent of employed population working in “Wholesale and retail trade; repair of motor vehicles and motorcycles” industry and 9.3 percent in “Accommodation and food service activities” industry.

4.2 Survey Design

Survey design involves the planning of the whole survey project and the outlining the steps to take when conducting the survey. These steps start from the formulation of the survey goals and end at the interpretation of the survey results.

The survey design specifically involves:

1. Creating, brainstorming and verifying the survey goals
2. Identifying the sample from the target population
3. Choosing a survey method
4. Creating a questionnaire or survey
5. Conducting a pilot survey
6. Revising the questionnaire
7. Executing the full survey
8. Analyzing and interpreting the data gathered
9. Communicating the results

Testing the questionnaire is a good practice because it will facilitate correction of any errors in the questions or even in the layout. In this study, pilot survey was done by distributing to 30 betel chewers. The results of the pilot survey are crucial in knowing whether the questionnaire is already complete and appropriate, or there are questions that need to be edited, revised or deleted. This step may also include revising the questionnaire layout to a better-looking one to increase the response rate.

To address the research questions, a mixture of qualitative and quantitative methods were used in order to get more insights. Primary and secondary data are used in this research. To get the primary data, 150 betel chewers are chosen as the sample respondents. Descriptive research method is used after interpreting the survey data. Frequency, percentage, and mean score are used to present the survey results. Chi-square is run to test the correlations of dependent variable and independent variable such as education and intention to quit, or awareness of betel chewing risk and intention to quit.

4.3 Survey Results

Survey results are presented by fetching data into SPSS in order to analyze the data. The results are presented by frequency and percentage for demographic data of the respondents. For 5pointslikert scale questions, mean scores are calculated. Finally, chi-square is calculated to analyze the correlation.

4.3.1 Profile of the Respondents

This study analyzes the profile of the respondents, demographic characteristics, such as gender, age, education level, occupation, organization, monthly salary, and monthly spending for chewing betel. These data are very important for government and healthcare officers in order to reduce chewing betel nut practices. A total of 150 respondents were surveyed for this study.

Table (4.1) Profile of the Respondents

Sr.	Characteristics	Respondents	Percentage
1.	**Gender**		
	Male	142	94.7
	Female	8	5.3
	Total	**150**	**100**
2.	**Age**		
	15 – 18 years	8	5.3
	19 – 25 years	32	21.3
	26 – 30 years	18	12.0
	31 – 35 years	16	10.7
	36-40 years	44	29.3
	Above 40	32	21.3
	Total	**150**	**100**
3	**Education**		
	Illiterate	14	9.3
	High School	82	54.7
	Undergraduate	24	16.0
	Post Graduate	30	20.0
	Total	**150**	**100**
4	**Occupation**		
	General	89	59.33
	Professional	11	7.30
	Company Staff	21	14.00
	Government Staff	6	4.00
	Business Owners	1	0.70
	Dependent	22	13.30
	Total	**150**	**100**
5	**Monthly Salary**		
	Less than 100,000 MMK	18	12.0
	100,001 – 200,000 MMK	2	1.3

Table (4.1) Profile of the Respondents (Continue)

	200,001 – 300,000 MMK	75	50.0
	300,001 – 500,000 MMK	47	31.3
	More than 500,000 MMK	8	5.3
	Total	**150**	**100**
6	**Monthly Spending**		
	Less than 100 MMK	18	12.0
	100-500 MMK	2	1.3
	501 – 1,000 MMK	12	8.0
	1,001 – 2,000 MMK	47	31.3
	2,001-3,000 MMK	4	2.7
	3,001 - 5,000 MMK	4	2.7
	Above 5,000 MMK	63	42.0
	Total	**150**	**100**
7	**Family Opinion**		
	Accept	133	88.7
	Do not like	17	11.3
	Total	**150**	**100**

Source: Survey Data, 2018

According to Table (4.1), it was found that the majority of the betel chewers are males and they represent the 95 percent of the total respondents while there are only 8 females who chew betel nuts. Most of the betel chewers are females because they represent the 62 percent of total respondents, while males representing the remaining 38% percent. Thus, majority of betel chewers in this township are males.

Most of the betel chewers in this township are from 26 to40 years old and they represent the largest group by 29.3% of the respondents. There are 21.3% of respondents who were aged from 19 to 25 years, and people who are above 40 years old. People age from 15 to 18 years old represent the smallest group in the respondents by 5.35% of the total respondents.

Among 150 respondents, 54.7% of the respondents are high school degree and they contribute the largest portion, followed by 20% of correspondents hold post graduate, and followed by 16% of undergraduate people while only 9.3% of respondents are illiterate. Most betel chewers finished high school and they work for their life.

The survey data shows that most respondents in this study general workers representing 59.33% of the total respondents, and followed by company staff (14%). Among 150 respondents, dependent take 13.3% of the total respondents. Government staff and business owners only represent 4% and 0.7% respectively. It is found that most of the betel chewers in this township are general workers.

Regarding monthly income, 50 percent of the respondents get the salary from 200,001MMK to 300,000 MMK and they represent the largest portion among the respondents, followed by 31.3% of the respondents who earn from 300,001 to 500,000 MMK. There are 5.3% of respondents who get more than 500,000 MMK while only 1.3% of the respondents earning from 100,001 to 200,000MMK. It is found that most of the respondents could afford for the betel nuts since betel packet price is very cheap.

It is found that 42% of respondents spend more than 5,000 MMK per month for betel packets, followed by people who spend 1,001 to 2,000 MMK. These groups dominate among the respondents. There are 1.3% of respondents who usually spend from 501 to 1,000MMK per month. The findings reveal that most of the respondents are heavy betel chewers since they spend at least 5,000 MMK per month.

It is found that most of the families accept betel chewing habit and those represent 88.7% of the total respondents. On the other hand, only 11.3% of the respondents do not like it. Thus, it is found that most of the family members do not think that chewing betel is a bad habit. Betel chewing is a custom practice and deeply associated with Myanmar culture since ancient times.

4.3.2 Factor Influencing on Betel Chewing Behavior

This study identifies the influencing factors on betel chewers to start chewing habit. It covers the friend and peers, parental influence, ease of buying and reason of chewing. These findings are useful for officials while considering strategy to reduce or eliminate betel chewing practice. To get the more details, 5-pointed likert scale is used in the structured questionnaire.

(i) Influence of Friends and Peers

Friends or peers could influence on people to start or continue betel chewing practice. This study is done by surveying 150 betel chewers in Thingangyun Township. The findings are presented in Table (4.2).

Table (4.2) Influence of Friends and Peers

No.	Peers	Mean Score
1.	Friends and peers persuade me to test the betel nuts	3.10
2.	Many friends are chewing betel nuts	3.25
3.	Chewing betel nuts is more sociable	3.00
4.	Betel chewer have more friends	2.87
	Overall Mean	**3.05**

Source: Survey Data (2018)

According to the Table (4.2), most respondents admit that they have many friends who chew betel nuts. It is found that friends and peers moderately persuaded many respondents to test the betel nuts for the first time. In additions, the betel chewers think that chewing betel nuts is more friendly and sociable at the environment. According to the overall mean score, peers or friends moderately affect on the betel chewers since most of the respondents are general workers and they used to share their betel packets while working.

(ii) Influence of Parents

The roles of the parents are very important in establishing or testing betel nuts among children or underage. This study finds out the influence of parents on betel chewers and the findings are presented in Table (4.3).

Table (4.3) Influence of Parents

No.	Parents	Mean Score
1.	I used to see parents and relatives chewing betel nuts	3.13
2.	Parents chew betel nuts at home	2.75
3.	I used to chew my parent's or relatives betel nuts.	2.41
4.	Parents and relatives do not ban chewing betel nuts	3.15
	Overall Mean	**2.85**

Source: Survey Data (2018)

Based on the survey result, respondents stated that their parents do not ban betel chewing habits. They usually see their parents and relatives chew betel packages. On the other hand, respondents do not take their parents or relatives betel

packages and their parents do not chew betel packages while they are at home. According to the overall mean score, parents do not have much effect on the respondents to start or continue chewing habit.

(iii) Ease of Buying

Ease of buying could be another influencing factor on betel chewers. The study finds out whether betel chewers could buy or search the betel nuts easily. The findings are presented in Table (4.4).

Table (4.4) Ease of Buying

No.	Ease of Buying	Mean Score
1.	I could easily buy betel nuts.	4.51
2.	Betel shops are everywhere.	4.13
3.	Betel nuts are very affordable for everyone.	4.31
4.	I could get betel nuts whenever I want to chew.	4.71
	Overall Mean	**4.41**

Source: Survey Data (2018)

It is found that most of the chewers get betel nuts whenever they need or want betel packages. In additions, there are many betel shops at every street thus betel chewers could easily buy the betel nuts. Since betel packages are cheap, respondents could buy those packages whenever they want to chew. According to overall mean score, betel chewers could get the betel packages easily since the betel shops can be found at every street.

(iv) Reason of Chewing by the Respondents

The reasons of the betel chewing can be different among respondents. This study is done by surveying 150 betel chewers in Thingangyun Township. The findings are presented in Table (4.5).

Table (4.5) Reason of Chewing by the Respondents

Reason of Chewing	No. of Respondents	Percentage
Additive effect	38	25.3
Release of tension	21	14.0
Refresh breath	91	60.7
Total	**150**	**100.0**

Source: Survey Data, 2018

Among 150 respondents, majority of the respondents chew betel nuts because of refresh breath and this represents 60.7 % of the respondents, followed by 25.3% of respondents chew because of additive effects, and while only 14% of respondents intend to release of tension. Most of the respondents used to chew betel packets for refresh breath after they smoke or drink alcohol.

4.3.3 Chewing Betel Nut Practice

Chewing betel nut practice can vary among the betel chewers. This study finds out the betel chewing behaviors such as chewing time, chewing custom, number of betel packets per day, years of chewing betel nuts, and chewing at the restricted area and the duration of keeping betel packets in mouth.

(i) Usual Chewing Time

Usual betel chewing time can be varied among the respondents. The study finds out the reasons when people usually chew betel packets. The findings are presented in Table (4.6).

Table (4.6) Usual Chewing Time

Usual Chewing Time	No. of Respondents	Percentage
Hungry	45	30.0
Sleepy	19	12.7
Working	7	4.7
After smoking	64	42.7
After drinking alcohol	15	10.0
Total	**150**	**100.0**

Source: Survey Data, 2018

Among 150 respondents, it is found that most of the respondents chew after smoking majority of the respondents chew betel nuts and this represents 42.7 % of the respondents, followed by 30% of people chew betel packages when they are hungry since most of the respondents are general workers. In additions, some people chew when they are sleepy and only 4.7% of the respondents do while they are working. Most of the respondents chew betel packets after smoking because they want to lesson smoking smell.

(ii) Chewing Frequency

Chewing frequency can affect the health problems. This study finds out frequency or custom of the betel chewing among the respondents. The findings are presented in Table (4.7).

Table (4.7) Chewing Frequency

Chewing Frequency	No. of Respondents	Percentage
Everyday	81	54.0
One to six times per week	10	6.7
Once in two weeks	57	38.0
Once in three weeks	2	1.3
Total	**150**	**100.0**

Source: Survey Data, 2018

Among 150 respondents, most people chew betel packets every day and this represent the 54.0 % of the total respondents, followed by 30.0% of people who chew once in two weeks. Only 1.3% of the respondents rarely chew the betel nuts since they take it once in three weeks. Based on the findings, it is found that most of the respondents in this township are chewing betel packets every day since most of the people are general workers and they used to chew at work.

(iii) Number of Betel Packets Per Day by the Respondents

Table (4.8) shows the number of betel packets that respondents chew per day. Based on this information, it can be estimated how to control the betel chewing practice. The following table is made based on the survey data.

Table (4.8) Number of Betel Packets Per Day by the Respondents

Betel Packets Per Day	No. of Respondents	Percentage
1-3	3	2.0
4-6	37	24.7
7-9	25	16.7
10-12	47	31.3
More than 12	38	25.3
Total	**150**	**100.0**

Source: Survey Data, 2018

Among 150 respondents, 31.3 percent of the total respondents chew 10 to 12 betel packets every day, followed by 25.3% betel chewers who eat more than 12 packets per day. In additions, 24.7% of people take 4 to 6 betel packets while only 2% of people take 1-2 betel packets per day. It is found that most of the betel chewers consume many betel packets per day. Because the price of betel packet is very cheap and people could easily buy the packets.

(iv) Years of Chewing Betel Nuts by the Respondents

Table (4.9) shows how long respondents have been chewing by number of respondents and their relevant percent. The findings are based on the survey data of 150 betel chewers in Thingangyun Township

Table (4.9) Years of Chewing Betel Nuts by the Respondents

Years of Betel Chewing	No. of Respondents	Percentage
Less than 1 year	21	14.0
1-2 years	24	16.0
3-5 years	21	14.0
6-10 years	42	28.0
More than 10 years	42	28.0
Total	**150**	**100.0**

Source: Survey Data, 2018

Result shows that the majority group representing 28% of respondents has been chewing from 6 to 10 years, followed by 16% of respondents started chewing

from 1 to 2 years while 14% of people have chewed from 3 to 5 years. It is found that most of the betel chewers in this township have been chewing for many years.

(v) Chewing at Restricted Area

This study finds out whether respondents used to chew at the restricted places by collecting structured questionnaire. The findings are shown in Table (4.10) by frequency and percentage.

Table (4.10) Chewing at Restricted Area

Chewing at Restricted Area	No. of Respondents	Percentage
Yes	44	29.3
No	106	70.7
Total	**150**	**100.0**

Source: Survey Data, 2018

As shown in Table (4.13), the largest group, 707% of respondents, follows the rules and does not chew betel packets at the restricted places. The other 29.3% of respondents are unaware of these restricted places. It is found that most of the respondents do not break the rules since most restricted areas are government buildings and people are afraid of breaking the rules.

(vi) Keeping Betel Nuts in Mouth

Table (4.11) shows the duration of keeping betel packet in the mouth. The longer the time, the greater risks for the betel chews. The findings are presented in Table (4.14) by frequency and percentage.

Table (4.11) Keeping Betel Nuts in Mouth

Keeping Betel Nuts in Mouth	No. of Respondents	Percentage
1 to 2 minutes	12	8.0
3-4minutes	35	23.3
5-7minutes	72	48.0
More than 7 minutes	31	20.7
Total	**150**	**100.0**

Source: Survey Data, 2018

Table (4.11) shows that most respondents keep betel packets 5 to 7 minutes in the mouth and this group represents 48% of total respondents, followed by 23.3% of

people who keep 3 to 4 minutes. In additions, 20.7% of the betel chewers keep more than 7 minutes while the minority of the people keeps only 1 to 2 minutes. Most people keep the betel nuts in the mouth like snacks.

(vii) Swallow or Spit Practice

This study explores the betel chewer's habits about swallow or spit finally. The findings are shown in Table (4.12) by frequency and percentage.

Table (4.12) Swallow or Spit Practice

Swallow or Spit Practice	No. of Respondents	Percentage
Swallow	3	2.0
Spit	132	88.0
Sometimes swallow or spit	15	10.0
Total	**150**	**100.0**

Source: Survey Data, 2018

As shown in Table (4.12), the largest group, 707% of respondents, follows the rules and does not chew betel packets at the restricted places. The other 29.3% of respondents are unaware of these restricted places. It is found that most of the respondents do not have any certain preference because they do not have enough knowledge about how to do it finally.

4.3.4 Awareness of Betel Chewing Risks

This study finds out the awareness levels of the betel chewing risks among the respondents. By learning the awareness levels, the officials can adjust their strategies to reduce the chewing practice. 5-point likert scale is used for these questions and the findings are presented by mean values.

Table (4.13) Awareness of Betel Chewing Risks

No.	Awareness of Betel Chewing Risks	Mean Score
1.	Chewing betel nuts has so many side-effects	4.21
2.	Chewing betel nuts can cause mouth cancer	4.25
3.	Chewing betel nuts can cause throat cancer	4.18
4.	The longer a person chews, the higher the risk of mouth or throat cancer.	4.24
5.	I watch movies of people suffering because of betel nut	4.31
6.	There are many articles concerning the risks of betel nuts	3.39
7.	chewing betel nuts could affect kidneys	3.55
8.	chewing betel could stain red on teeth	4.13
9.	Experiencing anti-chewing betel events in the environment	3.81
	Overall Mean	**4.01**

Source: Survey Data (2018)

Based on the survey result, most respondents watch movies or short video clips about people suffering health problems because of betel chewing. Respondents know that chewing betel nuts can cause many side effects such as mouth cancer, and throat cancer. Respondents acknowledge that chewing betel nuts can cause red stain on teeth thus it can damage their outlook. Many people state that they saw many articles relating to the risks of chewing betel nuts. In additions, respondents accept that chewing betel packets can damage kidneys. They experience the anti-chewing betel events in their township or environment. According to the overall mean score, most of the respondents in this township have the awareness of betel nuts risks for their health.

4.3.5 Attitude towards Chewing Betel Nuts by Respondents

This study finds out how betel chewers perceive chewing betel nuts and their intention towards chewing betel packets. It focuses whether they will continue chewing or not based on their knowledge of betel risks. The findings are presented in Table (4.14).

Table (4.14) Attitude towards Chewing Betel Nuts by Respondents

No.	Attitude of Betel Chewing Risks	Yes		No	
		Qty	%	Qty	%
1	Chewing betel nuts is a good practice	14	9.3	136	90.7
2	I will recommend new people to taste betel nuts	34	22.7	116	77.3
3	Somebody tried you to quit from chewing betel	98	65.3	51	34.0
4	I will try somebody else to quit from chewing betel nuts	78	52.0	71	47.3
5	I tried to quit the betel nuts in the past	6	4.0	133	88.7
6	I had health problems because of betel nuts	30	20.0	120	80.0
7	I will try to quit from chewing betel nuts	115	76.7	35	23.3
	Total	**150**	**100**	**150**	**100**

Source: Survey Data (2018)

According to the survey result, 90.7% of the respondents do not accept chewing betel nuts is a good practice although they chew betel nuts regularly. They will not offer betel nuts and do not recommend new people to test the betel packets. Most respondents experienced somebody suggest to quit from chewing betel nuts but they continue chewing. It is found that most of the respondents suggest people to quit from chewing it. Majority of the respondents tried to quit from chewing but they could not quit. Among 150 chewers, 20% of the respondents have some health problems such as sore throat, tooth damage etc. But, 76.7% of the respondents have intention to quit from chewing betel packets.

CHAPTER 5
CONCLUSION

This chapter presents the findings and discussions from analysis, suggestions and recommendations and need for further research. The findings are based on the survey data about the chewing practices, awareness of chewing betel nuts risks and attitude towards the betel packets.

5.1 Findings

Regarding demographics of the respondents, it is found that more than 90% of the betel chewers are males and majority of the betel chewers are from 36 to 40 years old while the others are from 15 to 18 years old. Besides, most respondents hold high school degree and minority of the group represents illiterate people. Most betel chewers in Thingangyun Township are general workers and only 1 person does own business. Most betel chewers in this township earn 200,001 to 300,000 MMK while minority of the respondents gets 100,001 to 200,000 MMK. The majority of respondents indicate that they spend for betel nut chewing more than 5,000MMK per month while minority spends between 100 and 500 MMK. It shows betel packets are cheap and most respondents can afford them. The study finds that most of the families of the betel chewers accept the chewing habits and only small number of families do not like betel chewing habit. It shows that chewing betel packets is not strange in the environment or in the eyes of viewers. Officials need to focus above demographic findings while making strategies to reduce betel chewing.

Regarding influencing factors, friends have moderate influence on betel chewers to start or continue betel chewing practice since many friends are chewing betel nuts and they offer to chew betel nuts for the first time. Thus, many respondents feel chewing betel nuts is fairly sociable. On the other hand, parents do not have influence on betel chewers to start or continue chewing since most of the parents and relatives do not chew at home and in front of the children. But it is found that parents do not restrict the chewing behavior of their children. The most influencing factor is

the ease of buying and there are a lot of betel shops at the streets. This leads to persuade many new betel chewers for testing the betel nuts for the first time or continue chewing. In additions, most respondents chew betel packets because of fresh breath, followed by additive effects and followed by release of tension.

Regarding betel chewing practice, most respondents usually chew after smoking and many other chew when they are hungry since most of the respondents are general workers and they believe that chewing betel nuts can reduce hunger. On the other hand, the remaining people chew when they are sleepy, after drinking alcohol and while working. Most of the respondents chew betel nuts every day and they usually consume 10 to 12 betel packets per day while the least number of groups takes only 1 to 3 packages every day. They have been chewing betel packets at least 6 years while minorities have chewed less than 1 year. On the other hand, most of the respondents do not chew at the restricted areas and they follow the rules. In additions, most of the respondents keep betel packets in their mouth 5 to 7 minutes and they finally spit it out. According to the findings, most of betel chewers have been chewing for a long time and they take many packets a day and spit it out finally. This could lead to dirty at the environment and officials need to make new rules and enforce the law.

Regarding the awareness of betel risks, most respondents understand the risks of betel nuts although they consume. They know betel packets have so many side effects such as mouth and throat cancer. Most respondents sometimes suffer sore throat, toothache etc. Majority of the respondents tried to quit betel chewing but they could not since there are a lot of betel shops at the streets and they could not control their mind. Respondents express that they sometimes watched some anti-chewing movies and read articles and saw some anti-chewing events in the environment. Therefore, they have some knowledge about chewing betel risks but they do know have enough fear about risk of chewing betel packets.

According to the Chi-Square test, if the betel chewers have the higher the levels of knowledge concerning with betel chewing risks, the higher the intention to quit chewing. Thus, it can be concluded there is a relationship between knowledge of betel chewing risks with the intention to quit the betel chewing among the respondents. Furthermore, a chi-square test was performed at 5% level of significance to test the null hypothesis of no association between education levels and intention to quit betel chewing since there is no strong significance.

5.2 Recommendations

Regarding demographics, officials should issue the law clearly not to sale the underage people and enforce the laws strictly. Most respondents hold high school degree which shows they do not finish their education and some are illiterate. Thus, officials need to improve education levels of the residents in Thingangyun Township. In additions, officials should target the general workers when they plan the anti-betel chewing campaigns. Moreover, betel price is very cheap for most respondents even they do not get much salary. Officials should impose higher tax on betel and tobacco products that could harm the health of the citizens. Government should issue the law every government staff not to chew so that officials could act as the role models for the citizen. Then, the custom practice of the betel chewing habit among citizens should be changed by restricting betel chewing at the public places. Furthermore, officials should educate families the risks of chewing betel packets in terms of economical, social and health problems that could affect the whole family since most families do not warn or restrict their family member's betel chewing habits.

Regarding influencing factors, officials should urgently ban betel shops near the schools, government buildings, bus stops and center of the city. Ease of buying is the major influencing factor for the betel chewers. Moreover, at every bus stop or junction of the city, officials should place anti-betel vinyl posters and play anti-betel movies of the people who are suffering mouth or throat cancer repeatedly. In additions, government should distribute or educate about substitute products for the betel nuts since most people chew for fresh breath.

In additions, government should increase smoking policy since most people chew after they are smoking. If the smoking rate reduces, the betel chewing rate will also be decreased. Since some people chew betel packages to alleviate hunger, officials should convince the potential risks of betel chewing for the long term. Government should also develop cheap food shops at many townships for those people. Health of ministry should create anti-betel chewing movie by focusing the risks associated with the number of years of chewing practice, duration of keeping in the mouth and the number of betel packets per day. This will greatly attract the awareness levels of the betel chewers. Besides, the Municipal law should be enforced about betel spit by fining much money or voluntary work at the public areas. To support the people who want to quit betel chewing, government and ministry of health should arrange branches to assist those people at government hospitals or public

health care centers. By following the above suggestions and recommendation, the chewing practice of the people in Thingangyun Township will be reduced significantly. Community wide efforts are needed for implementing anti-betel nut programs to limit the age of consumers and places of sale of betel nut. Cultural beliefs and practices need to be overcome to prevent problem with oral health and oral cancer.

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Structured Questionnaire

PART A: Demographics

1. Gender

☐ Male ☐ Female

2. Age

☐ Less than 15 years ☐ 15 – 18 years

☐ 19 – 25 years ☐ 26 – 30 years

☐ 31 – 35 years ☐ 36 – 40 years

☐ Above 40 years

3. What is your educational Qualification?

☐ Illiterate ☐ High School

☐ Undergraduate ☐ Post graduate

☐ Master ☐Other

.....

4. What is your Occupation?

☐ General ☐ Professional

☐ Company Staff ☐ Government Staff

☐ Business Owner ☐ Dependent

☐Other .....

5. What is your average monthly income?

☐ Less than 100,000 Kyats ☐ 100,001 –200,000 Kyats

☐ 200,001 –300,000 Kyats ☐ 300,001 –500,000 Kyats

☐ More than 500,000 Kyats

6. How much do you spend for betel products every month?

☐ Less than 100 Kyats ☐ 100 –500 Kyats

☐ 501 –1000 Kyats ☐ 1001 –2000 Kyats

☐ 2001 –3000 Kyats ☐ 3001 –5000 Kyats

☐ More than 5000 Kyats

7. How did you know about betel nut?

☐ Family members ☐ Friends

☐ Street shops ☐ Neighbours

☐ Partners ☐ Tradition

☐ Other

.....

8. Does your family accept your chewing habit?

☐ Yes ☐ No

Section B: Factors Influencing on Betel Chewing Behavior

This section is seeking your opinion regarding the factors that influence the smoking behavior. Respondent are asked to indicate the extent to which they agreed or disagreed with each statement using 5 Likert scale response frame work. Please **tick** one answer indicates the extent to which you agree or disagree with each of the following statements.

[1 = strongly disagree; 2 = disagree; 3 = neutral; 4 = agree and 5 = strongly agree]

Level of Friends Influence:	**Degree**				
	5	**4**	**3**	**2**	**1**
1. Friends persuade me to test the betel nuts					
2. Many friends are chewing betel nuts					
3. Chewing betel nuts is more sociable					
4. Betel chewer have more friends					
Level of Parental/ Relatives Influence:	**5**	**4**	**3**	**2**	**1**
5. I used to see parents and relatives chewing betel nuts					
6. Parents chew betel nuts at home					
7. I used to chew my parent's or relatives betel nuts.					
8. Parents and relatives do not ban chewing betel nuts					
Ease of Buying and Affordability:	**5**	**4**	**3**	**2**	**1**
9. I could easily buy betel nuts.					
10. Betel shops are everywhere.					
11. Betel nuts are very affordable for everyone.					
12. I could get betel nuts whenever I want to chew.					

Section C: Chewing Betel Net Practices

1. Why do you chew betel nuts?

☐ Additive Effect ☐ Release of tension

☐ Refresh Breath ☐ Boredom

☐ No Reason ☐ To be Alert

☐ Curiosity ☐ Other.....

2. When do you usually chew betel nuts?

☐ Hungry ☐ Sleepy

☐ Working ☐ After smoking

☐ After drinking alcohol ☐Other.....

3. How often do you eat betel nut?

☐ Every day ☐ One to six times per week

☐ Once in two weeks ☐ Once in three weeks

☐ Once in four weeks

4. How many packets of betel nut do you eat a day?

☐ 1-3 ☐ 4-6

☐ 7-9 ☐ 10-12

☐ More than 12

5. How long have you been eating betel nuts?

☐ Less than 1 year ☐ 1 – 2 years

☐ 3 to 5 years ☐ 6 to 10 years

☐ More than 10 years

6. Have you ever chew betel nuts at a forbidden area?

☐ Yes ☐ No

7. How long have you been keeping betel nuts while chewing?

☐ Less than 1 minute ☐ 1 to 2 minutes

☐ 2 to 4 minutes ☐ 5 to 7 minutes

☐ More than 7 minutes

8. Do you eventually swallow it or spit it out?

☐ Swallow ☐ Spit ☐ Sometimes swallow or spit

Section D: Awareness of Chewing Betel Nut Risks

This section is seeking your opinion regarding the factors that influence the smoking behavior. Respondent are asked to indicate the extent to which they agreed or disagreed with each statement using 5 Likert scale response frame work. Please **tick** one answer indicates the extent to which you agree or disagree with each of the following statements.

[1 = strongly disagree; 2 = disagree; 3 = neutral; 4 = agree and 5 = strongly agree]

Awareness of Betel Chewing Risks	**5**	**4**	**3**	**2**	**1**
1. chewing betel nuts has so many side-effects					
2. chewing betel nuts can cause mouth cancer.					
3. chewing betel nuts can cause throat cancer					
4. The longer a person chews, the higher the risk of mouth or throat cancer.					
5. I watch movies of people suffering because of betel nut					
6. There are many articles concerning the risks of betel nuts					
7. chewing betel nuts could affect kidneys					
8. chewing betel could stain red on your teeth					
9. I found the anti-chewing betel events in the environment					

Section E: Attitude towards Chewing Betel Nuts by Respondents

1. Do you think chewing betel nuts is a good practice?

   ☐ Yes ☐ No

2. Do you recommend new people to taste betel nuts?

   ☐ Yes ☐ No

3. Does somebody try you to quit from chewing betel nuts?

   ☐ Yes ☐ No

4. If you have a chance, will you try somebody else to quit from chewing betel nuts?

   ☐ Yes ☐ No

5. Had you tried to quit the betel nuts?

   ☐ Yes ☐ No

6. Did you have any health problems because of betel nuts?

   ☐ Yes ☐ No

7. If you have a chance, will you try to quit from chewing betel nuts?

   ☐ Yes ☐ No

   Regression Result

Regression Result

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
AwareOfBetel9* Will You Quit	150	100.0%	0	0.0%	150	100.0%

AwareOfBetel9 * Will You Quit Crosstabulation

			Will You Quit		
			Yes	No	Total
Aware Of Betel 9	Poor	Count	1	0	1
		% of Total	0.7%	0.0%	0.7%
	Normal	Count	0	20	20
		% of Total	0.0%	13.3%	13.3%
	Strong	Count	0	60	60
		% of Total	0.0%	40.0%	40.0%
	Very Strong	Count	69	0	69
		% of Total	46.0%	0.0%	46.0%
Total		Count	70	80	150
		% of Total	46.7%	53.3%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	150.000[a]	3	.000
Likelihood Ratio	207.277	3	.000
Linear-by-Linear Association	103.559	1	.000
N of Valid Cases	150		

a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is .47.

Crosstabs (Education Level and Intention to Quit)

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Academic * Will You Quit	150	100.0%	0	0.0%	150	100.0%

Academic * Will You Quit Crosstabulation

			Will You Quit		Total
			Yes	No	
Academic	Illiterate	Count	9	5	14
		% of Total	6.0%	3.3%	9.3%
	High School	Count	34	48	82
		% of Total	22.7%	32.0%	54.7%
	Undergraduate	Count	11	13	24
		% of Total	7.3%	8.7%	16.0%
	Post Graduate	Count	16	14	30
		% of Total	10.7%	9.3%	20.0%
Total		Count	70	80	150
		% of Total	46.7%	53.3%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.181[a]	3	.365
Likelihood Ratio	3.194	3	.363
Linear-by-Linear Association	.057	1	.812
N of Valid Cases	150		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.53.