

# Training on the Ceasing Intention of Betelnut Addiction

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**Abstract**—According to the governmental data, the cases of oral cancers doubled in the past 10 years. This had brought heavy burden to the patients' family, the society, and the country. The literature generally evidenced the betel nut contained particular chemicals that can cause oral cancers. Research in Taiwan had also proofed that 90 percent of oral cancer patients had experience of betel nut chewing. It is thus important to educate the betel-nut hobbyists to cease such a hazardous behavior. A program was then organized to establish several training classes across different areas specific to help ceasing this particular habit. Purpose of this research was to explore the attitude and intention toward ceasing betel-nut chewing before and after attending the training classes. 50 samples were taken from a ceasing class with average age at 45 years old with high school education (54%). 74% of the respondents were male in service or agricultural industries. Experiences in betel-nut chewing were 5-20 years with a dose of 1-20 pieces per day. The data had shown that 60% of the respondents had cigarette smoking habit, and 30% of the respondents were concurrently alcoholic dependent. Research results indicated that the attitude, intentions, and the knowledge on oral cancers were found significant different before and after attendance. This provided evidence for the effectiveness of the training class. However, we do not perform follow-up after the class. Noteworthy is the test result also shown that participants who were drivers as occupation, or habitual smokers or alcoholic dependents would be less willing to quit the betel-nut chewing. The test results indicated as well that the educational levels and the type of occupation may have significant impacts on an individual's decisions in taking betel-nut or substance abuse.

**Keywords**—Oral cancer, betel-nut ceasing class, attitude, intention

## I. INTRODUCTION

IN recent years, issues on betel nut chewing has been widely discussed and studied in Taiwan from which evidence was generally provided that the betel nut chewing behavior a risky factor to human health.

The betel nut is the world's fourth substance abuse, ranking next only to smoking, alcohol consumption, and coffee [1]. Originated from the Southeast Asia, the betel nut chewing habits prevailed through immigration to other regions such as India, Taiwan, southern China, South Pacific Islands, and even to the UK, Europe, North America and northwestern Australia [1]. It was estimated 600 million or 10 percent of the world's population is taking the betel nut as part of their daily habit. Despite that the literature generally proofed that a strong relationship between oral cancer and betel nut chewing [2],

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there are some 2.5 million people or nearly 9 percent of the population habitually took betel nut [3]. As a result, the oral cancer became the 7th of the top ten death causes (in the fourth position for male gender) in Taiwan in the year of 2010 (DOH, 2011). The average age of the male victim died for the oral cancer is 55 years of old. Betel nut chewing is concededly a serious and immediate threat to the nationals' health that deserves close and intensive concern. The government has devoted numerous efforts in advising the national the hazards of this habit in the past decades, provided free oral cancer screening, and the prevalence still high or even worse expanded to the wider age range. The latest effort the government implemented specific for changing this unhealthy behavior is to organize as many as possible community-based betel ceasing education program. The program brings together the public health experts, physicians, nurses, and nutritionists to deliver updated knowledge on the risky effects and the successful ceasing skills that had been experienced recently. Purpose of this program attempts to alleviate the sufferers' dependency on betel but chewing. This study reports a recent program conducted in one region of the eastern part of Taiwan, in which the prevalence rate is the highest and are most threaten to the residents' health.

### A. Health Education in Shaping a Healthy Behavior

Research on health behavior is directed to analyze a wide range of health-related behaviors, including (a) preventive and protective health behaviors; (b) disease behavior, (c) the role of illness behavior. There three main streams in the research of this kind, including (a) the health behavior as "antecedent" to explore the illness or physical discomfort; (b) health behavior as part of education, to use different methods in changing unhealthy behavior; (c) the health behavior as the outcomes of the interactions of personal and social factors. Plenty of factors that affect health behavior had been identified in the past studies, such as factors from individual, family, social, organizational and cultural aspects. Consistent to the health educational point of view, this research argues that an unhealthy behavior, such as betel nut chewing, is an ignorant or irrational behavior, and could be amended through an effective education [4]. Past researches had found that health education as an intervention is effective in altering the unhealthy behavior of betel nut fans [3] [5] [6]. The current study believes that an effective health education containing biological, social, psychological knowledge could be used to promote the healthy attitudes and to strengthen the intentions of building health-maintenance habits [7] [8] [9]. This would be particularly true in the remote area in which residents were less educated and poorer in appreciating the importance of health. Betel nut chewing as substance abuse is harmful to the health, and brings poor image

to the fans in almost all modern public contexts. Despite that, fans of betel nut still have problem in ceasing such a habit. Why do people chew betel nut? Possible explanation for it might be 1. Physiological factors: betel quid chewing can warm the chewers' body, make them sweating with mental excitement. This could be strengthened with smoking. (2) Psychological factors: betel nut were used as companion of leisure time in the primitive societies, some fans copied the behavior as their older generations as a signal of adult and mature. (3) Social factors: in accordance with the traditional culture, betel nut chewing was viewed as a ritual part of the culture in the events of funeral, wedding, and other holy assemblies. As a matter of fact, betel nut is harmful to a person's health through multiple channels and mechanisms. First, a betel nut contains arecoline, arecaidine, and polyphenols that had been proofed to potentially cause carcinogenic. In addition, a large number of betel nut feeding may inhibit brain activity and make slow moving [10]. Second, lime and red-gray dressing: betel nut is used to serve with varied dressing of which contains chemical elements that will lead to abnormal proliferation of epidermal cells with the mutation, and then evolved into oral cancer [11]. Third, both mustard flowers and mustard vine contain cancer-causing chemicals, including safrole, hydroxyl good flavor powder, eugenol, eugenol and methyl isoeugenol, etc., of which safrole has been identified as carcinogenic compounds. Fourth, fibers contained in the betel nuts cause tooth loss, oral mucosal friction, and ulcers [8]. Study generally indicated that betel nut chewing is a high risk factor for oral cancer through the progress of mouth sores, tooth discoloration, wear and shaking and other symptoms [11] [12].

## II. MATERIALS AND METHODS

### A. Samples

Samples were taken from a training class of betel nut ceasing program. A total of 50 participants aged 18 or more were included in this study.

### B. Measuring Instruments

The instrument used in the study is a set of questionnaire with two structured questionnaires for participants to fill before and after the education program respectively. The participants complete the first questionnaire prior to the program begins, and to complete the second questionnaire right after the completion of entire class. In the beginning of both questionnaires, there are some paragraphs describing the chemical elements of betel nut and the associated risks to the human health. The first questionnaire contains three parts. Frist section enquires the respondents' attitudes toward betel nut chewing. The second section explores the respondents' knowledge on oral cancer. The third section collects personal information regarding general demographic factors and experiences of betel nut chewing, smoking, and alcoholic consumption. The second questionnaire adds an additional section to enquire the respondents' intention of ceasing betel nut chewing behavior.

TABLE I  
BASIC INFORMATION ON THE STUDY

Variable	Group	Number	percent
Gender	Male	37	74%
	Female	13	26%
Profession	Services	20	40%
	Agriculture	12	24%
	Fishing	13	21.3%
Age	18 years old above	50	100%
Education	Junior high school	17	34%
	Senior high school	28	56%
	College or university	5	10%
Start age	Junior high school	12	20%
	Senior high school	35	70%
	College or university	3	6%
Years, Betel nut chewing	1 to 5 year	5	10%
	6 to 10 years	19	38%
	11 years	26	52%
Daily consumption	1~10 pieces	18	36%
	11~20 pieces	20	40%
	20 or more	12	24%
Smoking	No	22	44%
	Yes	28	56%
Drinking	No	35	70%
	Yes	15	30%
Self-reported causes	Could not eat	10	20%
	Friends are eating	12	24%
	Refreshing	23	46%
	Too delicious	2	4%
	Other	3	6%

Grounded on the 3A3R health education model, of which refers to a procedure that is performed by a physician to utilize authority in advising the patients while in the clinic in three minutes of time.

The training class contains eight times of lecturing and instructions. The first five classes were intensive and completed within one month, the remaining three times were performed by individual health promotion professionals once every month. Each class took forty minutes to complete. The respondents answer the second questionnaire right on the completion of the entire session of education program.

## III. RESULTS

74% of the participants are male with average age at 45 years old and are mostly high-school educated (56%). Most of the respondents worked as a service professional and followed by the employees of primary industries. There are around 52% of the participants have 11 to 20 years of experience of betel nut chewing. Risky behaviors appear to come together that detrimental to the respondents health by which 56% and 30% of the respondents have a habit of smoking and alcohol consumption respectively. Refresh is the major self-reported reason for not getting rid of betel chewing addiction at 46% of the respondents. Reasons to drive a betel nut chewing in descending order are getting warm in chilly season, refreshing, making friends, and job required. Average scores of the knowledge on oral cancer are 6 and 8 points in an 11 points scale. This has shown the knowledge level remains insufficient, and that require further intervention with more effective health promotion. Intention to quit the betel nut chewing after the health education program appear to be low to moderate levels with average score at 6 points in a 15 points scale.

TABLE II  
HEALTH BEHAVIOR CHANGE

Behaviors		Pre-test		Post-test		Δ
		N	%	N	%	
Health education	Ceasing program	50	100%	45	90%	-10%
Daily consumption	1~10 pieces	18	36%	35	70%	+40%
	11~20 pieces	20	40%	10	20%	-20%
	20 or more	12	24%	0	0%	-24%
Betelnut chewing	Y	6	12%	30	60%	+48%
	N	44	88%	12	24%	-64%
Self-reported causes	Hardly resist	10	20%	6	12%	-8%
	Friends	12	24%	6	12%	+12%
	Refreshing	23	46%	14	28%	+18%
	Tasty	2	4%	3	6%	+2%
	Other	3	6%	3	6%	±0%
Smoking	Y	39	78%	20	40%	-38%
	N	11	22%	30	60%	+38%
Alcoholic consumption	Y	31	62%	18	36%	-26%
	N	19	38%	41	82%	+44%

Table II shows the changes in health behavior, health education and advocacy through the ring Penang to participate in class size from 50 to 45 decreased by 10% of people chewing betel nut 1-10 pieces per day increased from 36-70% increased by 40%, 11 -20 satellites increased from 40-20% reduced by 20%, 20 more than the 24-0% a 24% reduction, if successful from the betel nut chewing, 0-8% increase of 8%, betel nut chewing causes Could not eat, Friends are eating, Too delicious has decreased about 8-18% of cases, smoking situation from the 78-40% reduction of 38% alcohol case by the 62-36% reduction by 26%

#### IV. DISCUSSIONS

##### A. Attitude toward Betel Nut Chewing De-associates with Health Perception

Despite of the negative image to the person and hazardous impacts on the health, fans of betel nut prone to interpret this behavior with their own ideology, a typical excuse-seeking behavior. Result of this study is consistent with previous study [12].

##### B. A More Effective Educational Instrument May Be Needed To Prevent Oral Cancer

Although the knowledge on oral cancer has been improved through the education program, the magnitude of the improvement is not satisfactory. This means there are more rooms for further improvement. The government and the public health agencies should explore more in identifying the factors associated with this behavior and to develop a set of better educational material for this particular group.

##### C. The Training Program Has Limited Effects on Ceasing Intention

The result shows that the education intention has some but not satisfactory improvement. The content, tutoring approach, media, as well as procedure of the training program may need to have a further examination and revision. Taken the threats of oral cancer to the human health, special efforts in enhancing the effectiveness of such program is apparently worthy for resource allocation.

#### V. CONCLUSIONS

Factors behind betel nut chewing behavior are many, mostly are physiologically getting warm in chilly season and refreshing. There are some communities had developed certain kinds of social behavior in connecting people with this particular material, for example, in the wedding party. As long as the behavior becomes a norm in a culture, it will be even a harder mission for public health. The test results had shown that a training education program had not achieved satisfactory outcomes as expected. The improvement made by the training program emerged, yet the magnitude is moderate. Since the goal for guarding the nationals' health is confirmed, quantity and quality of efforts in identifying the causes associated with this abuse, and accordingly promoting the nationals' self-health consciousness are worthy to invest. Scholars in this discipline may direct their research in explore deeper in finding the factors that can moderate the fans' intention in ceasing this hazardous behavior.

The current research had shown that gender and occupation could be an important determinant in shaping the fan's attitude and behavior, it would be worthy for the society and the community to develop gender or occupation specific educational material for a more effective outcome. Social supports from the individual's family and other social ties may play a significant role in changing their behavior. The government may develop proper programs, with the cooperation from the community, to foster a supportive environment that a healthy norm can be gradually established and shared by the community members. Oral cancer is threatened, and the betel nut abuse is the major cause of this disease. Although the educational program as intervention is helpful in directing behavior, the magnitude of the improvement is not satisfactory. Additional efforts in enhancing the effectiveness of the programs are badly needed.

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