Cessation of Betel Quid Chewing: Lessons from the ex-chewers

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ABSTRACT

Introduction: The practice of chewing of betel quid is deep-rooted age-old traditions of most Asian countries including Bhutan. Health is an integral part of happy living and healthcare providers are generally looked up to as role models for healthier living. This paper focuses on the prevalence of ex-betel quid chewers and correlates of successful cessation of betel quid chewing among healthcare professionals in Thimphu, Bhutan. **Methods:** Data for this study was collected from six healthcare centres within Thimphu, during June – July 2016, using self-administered questionnaire. 478 questionnaires were handed over to the healthcare professionals, and 391 (82%) were returned. Statistical analysis was performed using statistical package for social science version 21.0. **Results:** The prevalence of ex-betel quid chewers was 16.9%. More than half (51.5%) of the ex-chewers discontinued chewing betel quid because of fear of the ill effects of chewing it. About 29% gave up chewing betel quid because of health-related problems. Betel quid chewing was first sourced either with a friend or a parent (59.1%, 24.2% respectively). Number of family members chewing betel quid, smoking and drinking status were significantly associated with quitting of betel quid chewing. **Conclusions:** Findings suggest that family and health risk behaviours such as drinking and smoking were significant correlates of quitting betel quid chewing. Hence, effective public health awareness could be targeted to both individual and their family members to enable them to quit betel quid chewing.

Keywords: Betel quid; Healthcare providers.

INTRODUCTION

The chewing of a betel quid (BQ) or betel nut is a widespread tradition found in most South and Southeast Asian countries. Due to social acceptance, many Bhutanese from all walks of life chew BQ. However, there are no existing records indicating when the use of BQ became prevalent in Bhutan. Nonetheless, the offering of BQ is said to have become a tradition as early as 1639[1]. Bhutanese traditional BQ is comprised of betel nut, betel leaf and paste of slaked lime locally known as doma, paney, and tsuney, respectively. It is the most basic form of BQ, although tobacco products are also used in conjunction with it in many countries[2]. There is great variation in the ingredients and preparation of betel quid[3]. The tradition of BQ chewing is generally seen in various social activities including welcoming of guests[4], and as an ice-breaker at social gathering and meetings in Bhutan[1].

Betel nut is the main component of BQ and contains four main alkaloids, namely arecoline, arecaidine, guvacoline and guvacine. Arecoline in particular is believed to have systemic effects including cancer[5]. Its use in any form is not safe for health, in particular oral health[3]. Recent systematic and meta-analyses[6,7] and numerous other studies on BQ chewing convincingly indicated strong association between oral cancers and BQ chewing[7-9]. Independent of tobacco and alcohol use, BQ chewing alone had higher odds of developing oropharyngeal cancer by more than two-fold[6]. The harmful effects of BQ chewing on oral soft tissues have been published extensively in dental literature[10]. The popularity of BQ use in South Asia such as in Thailand has decreased in recent years, mainly due to this habit not fitting into modern lifestyle[3,11]. However, imperishable preparations are gaining popularity especially among the young population in Taiwan and in India[3].

A wide range of demographic characteristics such as gender, education levels and ethnicity were significantly linked with both initiation and cessation of BQ chewing[12]. The cessation of BQ chewing is likely to be higher among males, those with higher levels of education and among non-aborigines[13]. BQ chewers also tend to smoke cigarettes and drink alcohol[13]. Nevertheless, cessation of BQ chewing is also likely to be greater among individuals who quit their smoking and drinking habits[14]. According to Lee, Lu[14], individuals with drinking habits were less likely to quit BQ and those who quit drinking were more likely to quit chewing BQ. Likewise, non-drinking status with smoking has the highest BQ chewing cessation behaviour while smoking alone was not a significant factor[13]. The likelihood of giving up BQ chewing is also dependent on the amount of BQ use. For instance, people who chew less quid (<5 quids per day) are more likely to stop or promote stopping of BQ chewing[12,15]. Similarly, chewers may quit use of BQ if the person personally experiences some health problems as a result of abusing it[16]. Successful cessation of BQ chewing is high among those who reported higher health locus of control[17]. Quitting of chewing BQ is also dependent on the duration of its use. The longer the history of chewing BQ, the less likely it is to give up chewing it[14].

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Factors related to the commencement of BQ chewing have been reported in many researches. However, there are limited studies on factors associated with the cessation of BQ chewing[18].

Cancer is one of the major non-communicable diseases on the rise in developing countries[19]. In Bhutan, the use of BQ is extensive especially among adult populations, and BQ chewing certainly may have played an important role in the rise of cancer. As most of the BQ chewers are unaware of the harmful effects of its consumption[20], understanding how to decrease the use of BQ is an important public health concern.

This article aims to expand the understanding of correlates to successful cessation or non-initiation of BQ chewing. Lessons learned from ex-chewers and non-chewers will assist in framing interventions to help BQ chewers quit.

METHODS

This cross-sectional survey was conducted among healthcare professionals working in six healthcare centres within the capital city of Thimphu. The entire strength of healthcare professionals working in varying capacities within the healthcare centres of Thimphu in the year 2009 was considered. The healthcare centres included Jigme Dorji Wangchuck National Referral Hospital (JDWNRH), three satellite clinics, and the National Institute of Traditional Medicine (NITM). Hence, no probability sampling was applied for this study.

478 self-administered questionnaires were handed out and 391 (82%) questionnaires were returned. The thoroughness of the survey instrument, particularly the clarity of the language used and the accuracy and completeness of the content were ensured under the expertise of the principal supervisor and associate supervisor as well as scientific committee members of Research Ethics Board of Health (REBH). The final instrument was pre-tested among 45 Bhutanese students studying within the universities of Bangkok, Thailand. They shared similar characteristics to that of the study population under consideration. The reliability of the questionnaire was tested and the Cronbach alpha coefficient for perceptions on chewing of BQ was found to be 0.71. Both descriptive and inferential statistics were applied to analyse the data. This study was conducted with the approval of ethical review committee, Faculty of Public Health, Mahidol University, Thailand (Proof Number: MUPH 2010-117), and the Research Ethics Board of Health, Ministry of Health, Thimphu, Bhutan (REBH/Approval/10/8500).

RESULTS

Demographic characteristics of the 391 participants are presented in Table 1. The sample consisted of 190 (48.6%) males and 201 (51.4%) females, with nearly half (47.3%) ranging between the ages of 20 and 29 years. Most were serving as medical technicians and nurses (39.9% and 35.6%, respectively).

As shown in Table 2, 26.6%, 16.9%, and 56.5% were current chewers, ex-chewers, and non-chewers of BQ respectively.

Table 1. Demographic characteristics of participating healthcare professionals (*n*=391)

Demographic characteristics	Number	Percent
[1]Age (Mean±SD: 32.2±7.9)		
20-29 years	183	47.28
30-39 years	140	36.18
≥ 40 years	64	16.54
Gender		
Male	190	48.59
Female	201	51.41
[2]Marital status		
Married	291	74.62
Not married	99	25.38
Level of education		
Certificate	195	49.87
Diploma	116	29.67
≥ Bachelor's degree	80	20.46
Working as		
Technician	156	39.90
Nurse	139	35.55
Others	96	24.55
Religion		
Buddhist	331	84.65
Non-Buddhist	60	15.35
[3]Region of origin		
East	171	46.34
Central	102	27.64
West	96	26.02

Note:[1]387 valid cases; [2]390 valid cases; [3]369 valid cases

Among the ex- chewers, 78.8% were over 25 years old, 51.5% were male and 74.2% of them were married. 39.4% of the ex-chewers were working as medical technicians and 37.9% as nurses.

Table 3 shows the various social characteristics of ex-chewers of BQ. Chi-square test was performed to determine the relationship between these various social characteristics and cessation of BQ chewing. Presence of fewer family members chewing BQ (p-value<0.01) and healthy risk behaviours such as smoking and drinking status were found to be significant correlates of cessation of BQ chewing (p-value <0.05).

As evident in Table 4, the traditional form of BQ (comprising areca nut, betel leaf, and lime) was the most commonly used (58%) type of BQ product at the onset. Friends (59%) and parents (24%) were the first sources for BQ chewing. 44% of the ex-chewers had quit chewing BQ when they were under the age of 25 years.

As shown in Table 5, fear of the ill effects of chewing BQ (52%) was the chief reason for the cessation of BQ chewing.

In fact, about 29% of the ex-chewers quit chewing BQ due to health-related problems. With regard to non-chewers, not liking to chew it (77%) was their main reason for not initiating BQ chewing. In addition, being in a health profession and needing to be a role model to the public (42.1%) and finding the smell from BQ chewing offensive (30%) were other reasons cited for not using it. Other attention-grabbing reasons for quitting or not initiating the chewing of BQ included fiancé disliking it, the inability to tolerate unhygienic issues and the desire to contribute to the aesthesis of the environment.

Table 2. Prevalence of BQ chewing status and general characteristics of the ex-BQ chewers

Demographic characteristics	Number	Percent
Age (Mean±SD: 32.5±8.4)		
<25 years	14	21.21
26-30 years	19	28.79
31-35 years	16	24.24
≥36 years	17	25.76
Gender		
Male	34	51.52
Female	32	48.48
Marital status		
Single	17	25.76
Married	49	74.24
Qualification		
Certificate	32	48.48
Diploma	23	34.85
≥ Bachelor's degree	11	16.67
Working as		
Technician	26	39.39
Nurse	25	37.88
Others	15	22.73
Monthly income (in Bhutanese currency)		
< Nu. 10,000	15	22.73
Nu. 10,000-15,000	36	54.55
> Nu. 15,000	15	22.72
Religion		
Buddhist	57	86.36
Non-Buddhist	9	13.64
[1]Region of origin		
East	29	47.54
Central	18	29.51
West	14	22.95
[2]Total number of family members		
≤5	31	47.69
≥6	34	52.31

Note: [1]61 valid cases; [2]65 valid cases; *Nu*=Ngultrum; *SD*=Standard deviation

Table 3. Characteristics of social behaviour among ex-chewers (*n*=66)

Characteristics	Number	Percent	p-value
Number of underlying diseases			0.060
None	55	83.33	
At least one disease	11	16.67	
Have family chewing BQ			0.002**
Yes	44	66.67	
No	22	33.33	
Number of family members chewing BQ			0.005**
None	23	34.85	
< 5 members	30	45.45	
≥ 5 members	13	19.70	
Status of smoking			0.031*
Current smoker	3	4.55	
Ex-smoker	18	27.27	
Non-smoker	45	68.18	
Status of drinking			0.037*
Non-drinker	35	53.03	
Ex-drinker	18	27.27	
Occasional-drinker	13	19.70	

*Note: *p-value<0.05; **p-value<0.01; BQ=betel quid*

Table 4. Behavioural patterns of ex-BQ chewers (*n*=66)

Behavioural patterns	Number	Percent
[1]Age at starting BQ chewing		
<15 years	10	15.38
15-19 years	19	29.23
20-24 years	22	33.85
25+ years	14	21.54
Type of BQ product chewed initially		
Traditional doma-paney and tsuney	38	57.58
Only doma	11	16.67
Supari	8	12.12
Doma with tsuney	6	9.09
Other products containing BQ	3	4.54
First source of BQ		
Friends	39	59.09
Parents	16	24.24
Self-purchased	8	12.12
Siblings	2	3.03
Spouse	1	1.52
Place of chewing BQ initially		
Home	18	27.27
Public area	18	27.27
Friend's home	13	19.70
At school	10	15.15
At work station	2	3.03
Religious site	1	1.52
Others	4	6.06
Person with whom BQ was chewed for the first time (multiple responses)		
Friends	48	72.73
Alone	11	16.67
Parents	10	15.15
Siblings	6	9.09
Others	2	3.03
Pattern of chewing BQ		
Chew and spit the remnants out only	28	42.42
Chew and swallow the remnants in only	20	30.30
Chew and both spit and swallow the remnants	18	27.27
[2]Age at which BQ chewing was quit		
<25 years	25	43.86
25-29 years	14	24.56
30+ years	18	31.58

Note: 165 valid cases; 257 valid cases; SD=Standard deviation;

Table 5. Reasons for cessation and non-initiation of BQ chewing among the participating healthcare professionals

Reasons for quitting chewing of BQ (multiple responses)	Number	Percent
Afraid of the ill effects of BQ chewing	34	51.52
Health problems	19	28.79
Parents disliking it	9	13.64
Advised by medical personnel	8	12.12
Health education from multimedia	4	6.06
Friends disliking it	3	4.55
High expenses incurred due to BQ use	2	3.03
Other reasons	7	10.61
Fiancé doesn't like it	1	1.52
Just like that	1	1.52
No reason	1	1.52
Not interested in chewing	1	1.52
Staining of teeth	1	1.52
Cannot tolerate & hygiene issue	1	1.52
Neither quenches thirst nor satisfies hunger	1	1.52
Reasons for not chewing among non-chewers		
I just don't like it	169	76.47
I am a health worker and need to be role model to the public	93	42.08
Offensive BQ smell	66	29.86
Afraid of the ill effects of BQ chewing	46	20.81
It's just a wastage of time and money	27	12.22
I want to contribute in the aesthesis of the environment	24	10.86
Family members don't like it	11	4.98
Friends don't like it	2	0.90
It is not readily available	1	0.45
Other reasons	6	2.72
Gets headache, drowsy and vomiting	1	0.45
It dirties the teeth	1	0.45
It has a bitter taste	1	0.45
Oral diseases	1	0.45
Religious belief and risk to health	1	0.45
Staining of teeth which is horrible	1	0.45

Note: BQ=betel quid

DISCUSSION

Prevalence rate of cessation of BQ chewing among healthcare professionals in Thimphu was approximately 17%. Research into factors leading to cessation of BQ chewing is very limited. This paper focuses on BQ chewing habits and explores possible correlates that influence cessation of BQ chewing.

In other studies, factors such as ex-smoking and ex-drinking status, higher levels os education, less amount (<5 quid/day) of quid consumption and being aware about the harmful effects of BQ chewing were more likely to be correlated with successful cessation of BQ chewing[13-15]. Similarly, our study also revealed that being an ex-smoker/ex-drinker or a non-smoker/non-drinker had a higher percentage of cessation of BQ chewing.

Furthermore, about 42% of the non-chewers in this study believed that a health professional needs to be a role model to the public, and this was one of the main reasons for not chewing BQ. This is an indication that healthcare professionals play a significant role in the promotion of health for the public.

Successful cessation of BQ chewing reported higher health locus of control[17]. For instance, as reported by Lee, Lu[14], fear of the ill effects of chewing BQ and recommendations from healthcare professionals were the main reasons for not initiating or quitting BQ chewing. Likewise, personal experience with health problems led them to quitting BQ chewing[16]. Furthermore, other interesting reasons cited for cessation of BQ chewing in this study such as the staining of teeth and inability to tolerate unhygienic issues and the desire to contribute to the beauty of the environment deserves further exploration.

Chewing of BQ in any form is harmful to health[5]. As found in a previous study on BQ in Bhutan, our study also reported 30% of chewers swallowing the remnants of BQ. This would add to the noxious effects of BQ chewing such as lesions of the gums and mouth, leading to mouth and throat cancer[2]. This in turn would add to the health burden of our country, where healthcare services are provided free of costs. Therefore, rigorous public health interventions such as health education on the ill effects of BQ are merited.

CONCLUSIONS

The aim of this study was to determine the prevalence of cessation of BQ chewing and their correlates among healthcare professionals. Fewer numbers of family members chewing BQ, ex-smoking and ex-drinking statuses were significantly linked with cessation of BQ chewing. Health-related problems, fearing the ill effects of BQ chewing and the need to be role models being healthcare professionals were the main reasons cited for cessation or non-initiation of BQ chewing. This field deserves further explorative research with a larger sample size to gain insights into the experience of BQ chewing and the benefits of cessation of BQ chewing. This would enable effective and better health education to the general public for healthier living.

This study has several limitations. Within the limited resources, it was not feasible to recruit a representative random sample of the healthcare professionals in the whole country so the findings certainly lack generalizability. Small sample size may have also compromised capturing the power to detect significant relationship between the outcome variable and the explanatory variables. Selection bias may have occurred, since only those healthcare professionals who were available at the time of data collection were included. Healthcare professionals who could not participate may have had important information to share that has not been captured in this study.

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AUTHORS CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under:

ND: Concept, design, literature search, data collection and analysis, manuscript writing and review.

Author agree to be accountable for all respects of the work in ensuring that questions related to the accuracy and integrity of any part of the work are appropriately investigated and resolved.

CONFLICT OF INTEREST

None

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