

Abstract

Background:

Betel quid chewing is an ancient habit with great antiquity. A decreasing trend of betel quid chewing was observed in the last few years. The prevalence of betel quid chewing in the 35 to 44-year-old age group in the National Oral Health Survey 2015/2016 was 18%, with a male prevalence of 29.8% and a female prevalence of 6.9%. However, studies conducted in Sri Lanka have revealed that the prevalence of betel quid chewing varies in population subgroups due to socio-cultural variation.

Objective:

To determine the prevalence, selected oral health consequences, patterns, underlying determinants, and dependency of betel quid chewing, and the effectiveness of an intervention to promote betel quid chewing cessation among 20 to 45-year-olds living in Kalutara district.

Methods:

This study was a quasi-experimental study based on a descriptive cross-sectional study with quantitative and qualitative components. This study was conducted in three components.

Component 1

A community based descriptive cross-sectional study was carried with 1214 sample.

The 16 – item betel quid dependency scale was translated, cross-culturally adapted and validated for the Kalutara district. The modified Delphi technique was applied for cross-cultural adaptation and modification of the betel quid dependency scale.

Component 2

A qualitative study was carried out to gain more information on patterns and determinants of betel quid chewing and information related to intervention promoting betel quid chewing cessation. Thirty in-depth interviews were conducted.

Component 3

The quasi-experimental study to assess the effectiveness of an intervention to promote cessation of betel quid chewing. The intervention was based on the descriptive cross-sectional study and the “Theory of planned behaviour model.” Hundred thirty willing to quit betel quid chewers participated in this intervention.

Results:

The weighted prevalence of betel quid chewing was 34.1% (31.9% - 36.3%). Among males, females, Sinhalese, Buddhist, married, betel quid chewing prevalence was 40.4%, 20.7%, 27.2%, 29.9% and 27.9%, respectively. The findings were statistically significant with $P < 0.0001$ except for religion. In education levels below O/L, approximately 50% were chewers and the rest were non-chewers with a statistically significant association, P value less than 0.0001. Among skilled employers (78.2%), unskilled employers (61.8%) and employers (79.9%) majority were non-chewers, and that association was statistically significant, $P < 0.0001$. In the urban (66.7%) and rural (72.8%) areas majority were non-chewers, but in the village sector majority were chewers (90.3%). The association was statistically significant, with a $P < 0.0001$.

Among chewers 14.2% (10.6% - 18.1%) were smokers and 37.2% (32.5% - 42.6%) were alcohol users. Both findings were statistically significant, both $P < 0.0001$.

Prevalence of dental caries among chewers was 22.4% (18.3% - 27%). Prevalence of dental caries among non-chewers was 58.8% (55.4% - 62.2%). Above findings were statistically significant with $P < 0.0001$. Eighty three per cent (79.3% - 87%) of chewers had dental plaque depositions while 79.3% (76.3% - 82%) of non-chewers had dental plaque deposition; however it was not statistically significant. Chewers had 78.1% (73.5% - 82.2%) dental calculi deposition, whereas dental calculi deposition among non-chewers was 66.1% (62.8% - 69.3%) this association was statistically significant $P < 0.0001$. Tooth wear was common among chewers 83.4% (79.3% - 87%) compared to non-chewers 23% (20.2% - 25%). The association was statistically significant with $P < 0.0001$.

Eleven per cent (8.2% - 14.9%) of chewers swallow betel quid, while only 23.3% (19.1% - 27.9%) wash their mouth after chewing betel quid. More than half of the sample had never visited a dental clinic. Only 17.5% had visited the dental clinic within

a particular year. However, this was not statistically significant. The majority in this sample used to visit government dental clinics; it was 67.4%.

The mean age of initiation of b betel quid chewing was 19.9(SD = 6.1) years, and the mean expenditure for chewing per day was 60.00 rupees (mode 30.00 rupees).

The mode of betel leaves consumed per quid was 123cm² with two pieces of areca-nut and 2cm² of tobacco strip.

Three patterns related to general dimensions were identified during qualitative analysis, “availability,” “satisfaction”, and “addiction.”

The majority was daily chewers 82.6% (78.4% - 86.3%); more than half of chewers used 1 -3 quid per day 54.4% (48.6% - 60%). Most of the chewers used both areca-nut and tobacco in their quid 73.5% (65.9% - 81.5%).

The main determinants of betel quid chewing were identified as to alleviate sleep 72.7% (64.7% - 76.7%) followed by the reduced tiredness 57.2% (52% - 62.3%).

Four general dimensions were identified with regard to determinants of betel quid chewing, were “lack of expected level of education”, “reasons to continue with betel quid chewing”, “direct and indirect support”, and betel quid make life easy.

Weighted prevalence of betel quid dependency was 19.5% (17.7% - 21.3%) with P value less than 0.0001. Weighted prevalence of dependency among chewers was 50% (11.8 – 88.2%) with P = 0.001.

Three general dimensions were identified related to the cessation of betel quid chewing, namely “Opportunity for habit discontinuation”, “quitting methods”, and “Medicinal Dehethwattiya”.

The mean values of all four constructs, attitudes, subjective norms, perceived behaviour control and intention in the “Theory of planned behaviour constructs,” were improved.

The intervention was effective, with 13.8% had quit in both the intervention group and control group. More than one third (34.6%) of chewers had improved their chewing status. However, none of them were statistically significant.

Multivariate analysis revealed that the odds ratio for daily expenditure on betel quid chewing more than fifty rupees was 4.959 (taken as 5) with the improvement of

chewing status. Hence, betel quid chewers who spend more than 50.00 rupees on a daily basis were five times more likely to improve their chewing status than betel quid chewers who spend up to 50.00 on a daily basis.

PHM's routine work was not affected by working as facilitators in this current intervention.

Conclusion and recommendation:

Community-based education and communication intervention that promote cessation of betel quid chewing based on associated factors of betel quid chewing and TPB model was carried out successfully for willing to quit chewers.

The intervention findings revealed that 13.8% participants in both intervention group and control group had quit their betel quid chewing habit, while in both groups 34.6% of participants had reduced frequency of chewing betel quid, reduced and/or removed areca-nut and/or tobacco (improved their chewing practice) from the quid.

A Dental Surgeon or Medical Officer should carry out the technical part to give weight to the programme. In addition, public health midwives could work as a facilitator without disturbing their routine duties.

A self-quitting planning booklet and IEC materials developed could be used for this purpose.

Keywords: Betel quid, Dependency, Cessation, Theory of planned behaviour.

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