Prioritizing research and policy interventions to prevent oral cancers – Targeting the Betel Quid & Areca Nut Users

Epidemiology of areca nut use - the rising burden in the South East Asia and Taiwan

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Betel-quid & Areca-nut (BQ/AN) chewing is popular in this region!

It is chewed or placed in mouth for many reasons, including its psycho-stimulating effect, as well as a social and cultural practice.
- BQ/AN with & without tobacco are considered as carcinogenicity by IARC Monographs.
- The 4th most universally consumed substance after tobacco, alcohol and caffeine.
- At least 10% of the world's population (600 million persons) globally.

**BQ/AN generally consists of:**

- areca nut (from the *Areca catechu* tree),
- betel leaf (from the *Piper betle* L. vine) and
- slaked lime (calcium hydroxide)
- local ingredients.
- In many communities, tobacco is often added.
Areca nut (from the *Areca catechu* tree)

unripe/ripe, whole/sliced/chopped, raw/roasted/sun dried, boiled/soaked & fermented.


Slaked lime (calcium hydroxide)

sea shells, corals, limestone.

Betel leaf (from the *Piper betle* L. vine)


IARC mono #85
Other ingredients

- inflorescence (also called flower or pods), stem or catkins.
- inflorescence is common in Melanesia and in parts of Taiwan, and it is often added to the quid for its aromatic flavor.

- Tobacco
- Catechu, spices, sweeteners and essences.
Industrial packaged products

Pan masala (IARC mono #85)  Gutka (IARC mono #85)

Hunan, China
with tobacco

Gutka (IARC mono #85)

without tobacco

Pan masala (IARC mono #85)

Disease Burden and Health Effects

- Oral cancer
- OPMD (oral potentially malignant disorders)
  - Leukoplakia
  - OSF
  - Erythroplakia
  - Oral lichenoid lesions
- Periodontal diseases
- Cardiovascular
- Nervous
- Gastrointestinal
- Metabolic
- Respiratory
- Reproductive
- Other cancers

- Half of oral cancers could be prevented if people stopped their chewing habits
- Population attributable fraction:
  - PAF% = 53.7% in Taiwan;
  - PAF% = 49.5% in India subcontinent

Mehrtash et al., Lancet oncology 2017
IARC mono #85

Guha et al. IJC 2014
Lip and oral cavity cancer (C00-C08): Estimated 300,373 new cases and 145,353 deaths. Among them, 126,722 (42.2%) cases and 77,469 (53.3%) death from South-Central and -East Asia.

GLOBOCAN 2012 & Taiwan Cancer Registry 2012
Betel quid & areca nut chewing prevalence and characteristics

psycho-stimulating effect
social and cultural practice

BQ & AN users, so call high-risk groups

Taiwan:
Indigenous communities (~56%)
Certain occupations (~41%) [e-pod poster]

India:
rural adults (20%~51%)
urban adults (5%~38%), higher in men than in women

IARC mono #85
Lee et al. IJC 2011
Yap et al. BMC public health 2008
## Taiwan’s actions on BQ/AN control

<table>
<thead>
<tr>
<th>Partnership across government agencies</th>
<th>Council of Agriculture (subsidize areca tree by other crops)</th>
<th>Environmental Protection Administration (spitting free and fine)</th>
<th>Ministry of National Defense (BQ free &amp; cessation classes in all military personals)</th>
<th>Ministry of Education (health education)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organized oral cancer screening program</td>
<td>high-risk group (BQ chewers or smokers w/ 30+ years old or 18+ for indigenous)</td>
<td>dentists, ENTs and trained physicians in health centers &amp; outreach to communities</td>
<td>each year screening approximately 100 million</td>
<td>cost-effectiveness evaluation</td>
</tr>
<tr>
<td>Public awareness campaigns</td>
<td>warning signs on BQ packages</td>
<td>documentary on oral cancer patients</td>
<td>health education materials for schools, communities and high-risk groups</td>
<td>BQ and smoking cessation service in hospitals, communities &amp; work places</td>
</tr>
<tr>
<td>BQ free supporting environment in high-risk communities</td>
<td>Working with organizations to promote BQ free</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Chuang et al., Cancer 2017: 26% mortality reduction. BQ cessation: Lee CH et al., JAMA Psychiatry 2018; Lee CY et al., Plos One 2018; Lin et al., Subst Use Misuse 2017; Lo et al., Plos One 2016; Tsai et al., J R Army Med Corps 2018; Yang et al., J Clin Nurs 2017; Yen et al. Subst Use Misuse 2017
Courtesy of Health Promotion Administration, Ministry of Health and Welfare, Taiwan

Betel Quid Chewing Rate: Refers to those who have chewed within the past 6 months

Source: Behavioral Risk Factor Surveillance System (BRFSS) Survey and Adult Smoking Behavior Survey (ASBS)
BQ prevalence start to decline

Age standardized incidences decrease slowly

Crude incidences increase due to aging population

Crude mortalities

Age standardized mortalities

CRIS online system (https://cris.hpa.gov.tw)
Conclusion: BQ/AN control actions

It is all about **high-risk groups**!

How to **identify** & to **understand**!

Plans thereafter:
- Oral cancer awareness
- Intervention of cessation
- Oral cancer screening

**Challenge! Require research!**
- Real world evidences
- Qualitative studies
- Intervention studies ...

**High-risk individuals usually do not or less frequently attend health services!**
Netuveli et al., J Med Screen 2006

**Effectiveness is important!**
Thank You for Your Attention!

Comments or Questions?

Contact email: yihsy@kmu.edu.tw
Areca nut and Associated Oral Lesions

Rimal Jyotsna, MDS, FAIMER Fellow
Professor and Head, Oral Medicine and Radiology, B.P. Koirala Institute of Health Sciences
Areca nut

- Fruit drupe of Areca palm
- Tropical fruit from Asian & Pacific areas
- The fourth psychoactive substance
- Types: White, Red, Husks, combined with other carcinogenic products
- Symbolized as pleasure-giving, stimulant, psychotic substance, betelmania, Meige’s syndrome
Areca nut: Content and types

Content:
• Tannins
• Polyphenols
• Alkaloids (Arecaidine, Arecoline, guvacoline, Guvaccine etc)

Types: (based on type of curing)
• Unripe/ripe
• Whole/sliced
• Raw/roasted/sun dried
• Boiled/soaked in water
• Fermented (under mud)
Oral Mucosal Lesions associated with Areca nut

Mucosal changes without malignant potential

• Keratosis, staining, gingival, periodontal diseases

Mucosal changes with malignant potential

• Oral Submucous Fibrosis
• Betel-quid lichenoid lesion
  • quid retained sites
ORAL SUBMUCOUS FIBROSIS

Chronic, insidious, progressive disease that is associated with significant functional morbidity and an increased risk for malignancy
Clinical Presentations of OSF

- Burning sensation to spicy food
- Progressive inability to open the mouth
- Vesicles, particularly on the palate
- Dryness of the mouth
- Nasal tonality to the voice
- Blanching of mucosa followed by fibrosis
- Mottled, marble like appearance of mucosa
- Dysphagia to solid food
- Impaired mouth movements (eg, eating, whistling, blowing,)
Clinical Presentations of OSF

Stiff and small tongue
Blanched and leathery floor of the mouth
Fibrotic and depigmented gingiva
Rubbery soft palate with decreased mobility
Blanched and atrophic tonsils
Shrunken budlike uvula
Sinking of the cheeks, not commensurate with age or nutritional status
Change of gustatory sensation
Hearing loss due to stenosis of the Eustachian tubes
Leukoplakia is found in more than 25% of individuals with OSF
Diagnosis

History, clinical features

Chair side tests:

Non-invasive Clinical Diagnostic Tools

• Chemo-luminiscence: Toluidine blue, Acetic Acid
• Vizilite
• Identifi
• Microlux

• Diagnostic Accuracy (Sensitivity, Specificity And Accuracy)
Diagnosis

Laboratory testing:
• Decreased serum iron level
• Serum copper levels directly proportional to clinical stage
• Reduced level of zinc in serum

Histopathology

Molecular Markers
• c-Myc and HIF-1α – screening markers
• VEGFRII and CD105 - prognostic markers
Concerns

Resuming Normal Eating, Chewing, Speech
Restoring The Normal Mouth Opening
Reducing Pain And Burning Sensation
Improving Tissue Blood Flow
Preventing Disease Progression
Preventing Malignant Transformation
Improving The Quality Of Life
Way Forward

Collaborative/multidisciplinary research

Consortium for making strategies to improve public policy and treatment outcome

Mark OSF day /Anti OSF/ betel quid day for public awareness and advocacy
Thank you

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Prioritizing research and policy interventions to curb Areca nut induced cancers in South East Asia

Targeted Interventions for betel quid and areca nut users

Professor Dr. Rosnah Binti Zain
Associate Professor Dr. Shilpa Gunjal
MAHSA University, MALAYSIA

Track 3: Motivating prevention and healthy behaviors

Disclosure of interest: None declared
**Intervention:** any activity undertaken with the objective of improving human health by preventing disease, by curing or reducing the severity or duration of an existing disease, or by restoring function lost through disease or injury.

**Targeted interventions:** aimed at offering prevention and care services to high risk populations (Smokers, betel quid chewers).

- Preventive intervention
- Therapeutic intervention

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Targeted betel quid chewing intervention - the global perspective

Literature Search:

Successful intervention from few countries:

- Preventive Intervention for schoolchildren (behavioral / educational)
- Preventive and therapeutic intervention
- Reports from: India, Taiwan, Papua New Guinea, Pakistan and Malaysia

Many on-going trials of well structured intervention studies:

- Guam – the Benit intervention programme and Pakistan

Gaps in betel-quid chewing intervention research in other Asian countries:

- Eg, Indonesia, Cambodia, Vietnam, Laos, Myanmar…. 
Successful Interventions -
- School children & Adolescents
- Adults
### Successful Preventive Interventions - School children & Adolescents

<table>
<thead>
<tr>
<th>Authors/Country</th>
<th>Methodology</th>
<th>Preventive Intervention</th>
<th>Results</th>
</tr>
</thead>
</table>
| Wang SC et al (Taiwan)   | • Quasi-experimental design  
• 189 adolescent students divided into Control group (97) Experimental (92) | • 14 week classes  
• Post test at the end of 14 weeks  
• Post-post test at the end of 24 weeks | • Attitude and practice of betel nut chewing improved significantly (p<0.01) among pre-test, post-test & post-post test after intervention in experimental group. |
| Chen G et al (Papua New Guinea) | • To investigate the effectiveness of educative program on school children.  
• 95 primary & 55 secondary school children. | • Experts from Taiwan educated children (30 minute lecture on oral cancer) | • Knowledge score changed significantly in secondary school children (p<0.01) after post-test when compared to primary school children. |
### Authors/Country
Abdul Haleem et al (Karachi, Pakistan)

### Aim
To determine the effectiveness of the repeated and reinforced OHE (RR-OHE) compared to one-time OHE intervention and to assess its role in school-based OHE imparted by dentist, teachers and peers.

### Preventive Intervention
Cluster randomized controlled trial following a parallel design. It involved three groups of adolescents, each group receiving OHE either by dentist (dentist-led, DL), teachers (teacher-led, TL) or peer leaders (peer-led, PL).

### Results
- The adolescents’ oral health knowledge (OHK) in the DL and PL groups increased significantly by a single OHE session compared to their baseline knowledge ($p < 0.05$) and the increase was sustained over 6 months.
- The OHK, OHB and OHS indices increased significantly 6 months after RR-OHE than the initial scores ($p < 0.001$) irrespective of OHE strategy.

### Conclusions:
The repetition and reinforcement play a key role in school-based OHE irrespective of educators. The trained teachers and peers can play a complementary role in RR-OHE.
## Successful Preventive Interventions – Adult Betel-quid chewers

<table>
<thead>
<tr>
<th>Authors/Country</th>
<th>Methodology</th>
<th>Preventive Intervention</th>
<th>Results</th>
</tr>
</thead>
</table>
| Thaddeus M et al, 2016-Phd Thesis, University Malaya (Prospective community trial on a High risk Indigenous community in Limbang, Sarawak) | • Quasi-experimental design  
• 205 adult betel-quid chewers divided into: Control group (115) Experimental (90)  
• Control group - Conventional oral cancer education program, poster, talks | • Structured oral cancer education, strategies-Health Belief model  
• Gathered in groups of 3-5  
• Education delivered in a theme-based, structured and interactive manner  
• Summary and reinforcement | • 1 month follow-up: none (0%) of the chewers among controls reported quitting, compared to 6 (17.6%) chewers among intervention group reported quitting; p>0.005  
• 3 months follow-up: none (0%) of the chewers among control group reported quitting, compared to 8 (23.5%) chewers among intervention group reported quitting, p<0.005 |
## Successful Preventive Interventions – Adult Betel-quid chewers

<table>
<thead>
<tr>
<th>Authors</th>
<th>Study design</th>
<th>Intervention</th>
<th>Results</th>
</tr>
</thead>
</table>
| Shin L et al. Health Med, 8(12)1303-1310 (TAIWAN) | Evaluation of effectiveness of the 3A3R Educational Intervention Program for Betel Nut Addicts | • Employed 3A3R (Ask, Advise, Assess, Relevance, Risk, Rewards) methodology to visiting patients as a way to educate them on the risks of betel nut use. “Modification of 5A5R used for Tobacco cessation counseling” | • Displayed an increase in awareness of risks, perceived susceptibility, and perceived severity.  
• > 32% patients moved one stage forward in quitting betel nut use in one week.  
• Betel nut use also fell by an average of 7.77 nuts.  
• The 3A3R intervention program is effective for improving patients’ awareness; perceived susceptibility to oral disease; perceived severity of oral cancer; helping patients for the quitting process and reducing the betel nut intake. |
ONGOING CLINICAL INTERVENTION TRIALS
<table>
<thead>
<tr>
<th>Title</th>
<th>Sponsor / Collaborators</th>
<th>Aim</th>
<th>Methodology</th>
</tr>
</thead>
</table>
| Testing the Effectiveness of a Betel Nut Cessation Program (BENIT)   | Sponsor: University of Guam Collaborators: • National Cancer Institute (NCI) • University of Hawaii Cancer Research Center | • To test the efficacy of an intensive group-based betel nut cessation program.  
• To quantitatively determine the efficacy of the group-based betel nut cessation intervention trial using bio-verification. | • Randomized clinical trial  
324 Betel Nut Chewers  
Guam (n=162)  
Intervention (n=81)  
Control (n=81)  
Intervention Booklet (Quitting Betel Nut)  
Intensive Betel Nut Cessation Program  
Control Booklet (Quitting Betel Nut)  
Saipan (n=162) |
| Behaviour Changing Intervention for Smokeless Tobacco and Betel Quid Use in Adolescents | Dow University of Health Sciences. (Karachi, Pakistan)                                     | • To evaluate each component of Behavior Changing Intervention and its efficacy by using fidelity index and self-perceived efficacy by participants of intervention cluster. | Study Type: Interventional  
Estimated Enrollment: 2200  
Allocation: Randomized  
 Intervention Model: Parallel Assignment  
Primary Purpose: Prevention |

https://clinicaltrials.gov/ct2/show/NCT02942745

https://clinicaltrials.gov/ct2/show/NCT03488095
BARRIERS/CHALLENGES
Barriers/Challenges of interventions for betel quid and areca nut in LMICs

Betel quid chewing as cultural heritage

- Myth among Burmese refugee that Betel-quid chewers do not go to hospital as compared to smokers, Benign nature of betel-quid chewing, lack of knowledge on negative effect of betel quid’
- Low cost of betel quid chewing compared to smoking (Burmese refugees, selected Malaysian Betel quid chewers
- Mixed knowledge about betel quid being a good or bad habits

Lack of resources or tools to conduct intervention

- Videos

Low literacy

- Herzog et al – Areca Nut dependence Scale.
THANK YOU FOR YOUR LISTENING

DO YOU HAVE ANY QUESTIONS?

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Burden of Areca Nut/ Betel Quid Use in India

October 1-4, 2018
WCC–Kuala Lumpur, Malaysia

Prakash C Gupta

Healis Sekhsaria Institute for Public Health, Navi Mumbai
Forms of Areca Nut Use

• Betel quid (usually with tobacco)

• Manufactured areca nut products (usually with tobacco but also without tobacco)

• Areca nut by itself, manufactured products or not

• Areca nut by itself, as produce
Information on Areca Nut Use

• Information on betel quid or areca nut use has generally been subsumed under the category of smokeless tobacco use including in the first GATS in India

• The inference on areca nut use is often drawn looking at the type of product consumed
# Association of Areca-nut use with other related variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Options</th>
<th>GATS 1 - India</th>
<th>GATS 1 Bangladesh</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Areca-nut with</td>
<td>Areca-nut without</td>
</tr>
<tr>
<td></td>
<td></td>
<td>tobacco N(%)</td>
<td>tobacco N(%)</td>
</tr>
<tr>
<td>Use of SLT after waking up</td>
<td>Within 5 minutes</td>
<td>881 (13.3)</td>
<td>79 (13.5)</td>
</tr>
<tr>
<td></td>
<td>6 to 30 minutes</td>
<td>2277 (34.4)</td>
<td>201 (34.4)</td>
</tr>
<tr>
<td></td>
<td>31 to 60 minutes</td>
<td>1326 (20.0)</td>
<td>132 (22.6)</td>
</tr>
<tr>
<td></td>
<td>More than 60 minutes</td>
<td>2135 (32.3)</td>
<td>172 (29.5)</td>
</tr>
<tr>
<td>Age of initiation SLT</td>
<td>&lt;=10</td>
<td>472 (7.3)</td>
<td>42 (8.0)</td>
</tr>
<tr>
<td></td>
<td>11 to 15</td>
<td>1001 (15.5)</td>
<td>107 (20.4)</td>
</tr>
<tr>
<td></td>
<td>16 to 20</td>
<td>2269 (35.2)</td>
<td>193 (36.8)</td>
</tr>
<tr>
<td></td>
<td>21 to 25</td>
<td>1259 (19.5)</td>
<td>98 (18.7)</td>
</tr>
<tr>
<td></td>
<td>&gt;25</td>
<td>1443 (22.4)</td>
<td>85 (16.2)</td>
</tr>
</tbody>
</table>
Information on Areca Nut Use

• GATS II however, provided some information on betel quid or areca nut use without tobacco.
• The prevalence of betel quid without tobacco was 8.7%; areca nut, 8%; and, pan masala without tobacco 4.8%.

<table>
<thead>
<tr>
<th></th>
<th>Tobacco user (%)</th>
<th>Non user (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pan masala without tobacco</td>
<td>6.8%</td>
<td>3.9%</td>
<td>4.8%</td>
</tr>
<tr>
<td>Betel quid without tobacco</td>
<td>10.2%</td>
<td>8.0%</td>
<td>8.7%</td>
</tr>
<tr>
<td>Areca nut by itself in any form</td>
<td>8.6%</td>
<td>7.8%</td>
<td>8.0%</td>
</tr>
<tr>
<td>Any one of the above</td>
<td>19.8%</td>
<td>15.4%</td>
<td>16.7%</td>
</tr>
</tbody>
</table>
Mouth cancer incidence rates using cohort approach among men in the city of Ahmedabad.
Population-based Interventions

- Reducing or stopping tobacco use results in regression of potentially malignant lesions (PML) (*Mehta et al. Bull WHO* 1982)
- Stopping tobacco use reduces the risk of PML to nearly zero (*Gupta et al. Oral Diseases* 1995)
- RCTs demonstrated effectiveness of behavioral intervention in stopping tobacco use among school teachers in Bihar (*Sorensen et al. AJPH* 2013) and industrial workers in Mumbai (*Sorensen et al. Tobacco Control* 2017)
Policy-based Interventions

• Gutka, the industrially manufactured product containing areca nut, tobacco and flavorings, has already been banned in India. The ban is state-wise. It started in 2012 from Madhya Pradesh and within a couple of years all states in India notified the ban one after the other.

• Some states have also banned areca nut products even if they do not contain tobacco (often called pan masala).

• There is a move to ban flavored and scented areca nut also.

• Bans have not been easy to enforce.
Conclusions

• Use of areca nut and its products without tobacco is now quite high, perhaps due to tobacco control measures.
• Areca nut products have already caused an epidemic of oral cancer in India.
• Whether used with tobacco or without, areca nut causes serious health problems.
• Behavioral intervention is effective.

Thank You 

for

Your Attention
PRIORITIZING RESEARCH AND POLICY INTERVENTIONS TO PREVENT ORAL CANCERS – TARGETING THE BETEL QUID & ARECA NUT USERS

Policy Response to Areca Nut – Challenges and Opportunities in Wake of the WHO FCTC

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Track 1 - Motivating prevention and healthy behaviours
CHALLENGES
High Prevalence = High Burden

- More than 600 million people use areca nut globally.
- It has been classified as group-1 carcinogen.
- Majority of the users are in the Asia-Pacific region.
- Approximately 600 million people use areca nut as a masticatory drug.
- It is the fourth-most-used stimulant after caffeine, alcohol and tobacco.
- Aggressive marketing and advertisement of areca nut based products and their sale with attractive and appealing taste, scents, additives, flavourings besides attractive packaging have further increased its use globally, especially among young and vulnerable.
Multiple varieties

• There’s this problem of plenty with all kinds of substance abuse in the region
• Areca nut too is used in various form
• It is used along with tobacco and non tobacco additives besides several types of flavours
• Areca nut use in India:
  • Betel quid with tobacco 5.8%, gutka, areca nut tobacco lime mixture or mawa 6.8%, pan masala with tobacco 2.8%
  • Betel quid without tobacco is 8.7%, areca nut 8% and pan masala without tobacco 4.8%.
• The rising global burden of cancer, which is estimated to rise from 14 million in 2012 to almost 20 million in 2025
• Areca nut a big contributor to oral cancers and several other types of cancers
POLICY
INTERVENTIONS
Ban on spitting in high resource Parties

- **United Kingdom:**
  - To maintain clean pavements, the London Borough of Brent, in 2010, classified spitting paan/khilli paan juice as criminal damage attracting a fixed-penalty.

- **Australia:**
  - The Sydney suburb of Fairfield implemented a regulation against spitting in 2006. Violation attracted fines ranging from AUD110 to AUD1100.

- **Singapore:**
  - Spitting is prohibited in coffee shops and markets, public roads, sideways and any other place that’s open to the public. Any violation of the law attracts a fine of up to SGD1,000.
Ban on spitting in developing countries

- Nepal is the only country which has banned use of any kind of tobacco products in public places (2011)
- In Bhutan, a 2012 regulation prohibits smearing lime and spitting doma in public area
- Hangzhou, a province in China, spitting and littering in public places was banned in 2016
- In Myanmar, there is a ban on spitting red betel juice in the streets and public places
- In Papua New Guinea (PNG), since 2013, chewing betel nuts and spitting betel nut juices has been banned from the streets
- Sri Lanka implemented ban on sale of SLT and chewing of areca nut
Ban on spitting in India

- Indian Railways ban spitting on its premises since 2012.
- Metro Rail Corporations across India have also prohibited spitting in metro.
- Several states have implemented ban on spitting both for cleanliness and to reduce SLT use.
- Most recently the Uttar Pradesh Government has banned spitting in public buildings.
Ban on spitting under local (municipal) laws

- The Karnataka municipal law prevents spitting in public and violation attracts fine of INR 100 the first time and INR 200 subsequently.

- The Bombay Police Act, Section 116, prohibits smoking and spitting in government premises in Maharashtra.

- The Greater Hyderabad municipal law prescribes action against violators under its sanitation bye-laws with fine of INR 500 upwards.

- The Bihar municipal law makes spitting an offence with a penalty of INR 200.
Areca nut under Food Safety and Standards Regulations in India

• The Food Safety and Standards Authority of India permits sale of areca nut products only when every package of areca nut (supari) and its advertisement carries the following warning in conspicuous and bold print:

  “Chewing of supari is injurious to health”.

• Similarly sale of pan masala is allowed only when every package of Pan Masala and its advertisement carries the following warning:

  “Chewing of Pan Masala is injurious to health”.

OPPORTUNITIES
Regulating Areca nut the FCTC way!

1. Considering the health burden, there is an urgent need to step up regulation of areca nut products and their use and countries may consider using FCTC like provisions to curb areca nut use.

- **Article 6-Price and tax measures:** Areca nut products should be taxed at a higher rates and any tax benefits or exemptions should not be extended. Such products should be sold in large tin packs and their price should be set on the principle that they are not accessible and affordable for youth.

- **Article 8-Ban on public use:** in line with the several jurisdictions, use and spitting of areca nut in public places should be banned.

- **Article 13- Prohibit advertisements:** A ban on areca nut and areca nut based products like ‘pan masala’ and ‘scented and flavoured areca nut products’ direct or indirect advertisements could be the first step to curb its use. This will also help in curbing SLT use.
Regulating Areca nut the FCTC way!

- **Article 14 – Cessation from areca nut use:** Health professional’s capacity should be built in advancing areca nut cessation and it should be integrated under other health and development programs.

- **Article 12 – Education, training, communication and awareness:** There is need to train stakeholders and public in general about the adverse health impacts of areca nut use.

3. Further, countries should consider implementing a comprehensive National Areca Nut Control Program to save millions of people from its ill effects.
Q & A!

THANK YOU

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