Health beliefs in oral cancer: Malaysian estate Indian scenario

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Received 4 June 1999; received in revised form 15 February 2000; accepted 18 February 2000

Abstract

This is a study to describe the health beliefs related to oral cancer (OC) in a high-risk group in Malaysia, a predominantly Indian community living in an agricultural setting called an estate. The study population was a convenient sample of 112 adults, above 20 years of age, attending oral cancer screening in two estates. The subjects consisted of 106 (94.6%) Indians and six (5.4%) Malays. Using the Health Belief Model, the perceptions of susceptibility to OC, its severity, and the benefits of and barriers to preventive actions, as well as beliefs underlying OC aetiology were investigated. About half of the subjects (n = 57, 50.9%) felt susceptible to oral cancer. A majority of subjects (n = 93, 83.0%) felt that oral cancer is a severe disease. Thirty four people (30.4%) perceived OC as a preventable disease, while 56 (50%) did not, and the remaining 22 (19.6%) did not know if OC was preventable or not. The majority of subjects (84.8%) believed that modifications to the betel quid habit could be beneficial. The information solicited can be used as a starting point to design health-education activities aimed at this group in particular and the population in general. © 2001 Elsevier Science Ireland Ltd. All rights reserved.

Keywords: Health beliefs; Oral cancer; High-risk community.

1. Introduction

Malaysia is a multiracial country with three main ethnic groups, namely Malay (62.1%), Chinese (29.4%), and Indian (8%) [1]. The 1997 mid-year population estimate of Malaysia was 21 665 400. There is no national cancer registry in this country; therefore, the exact cancer burden in this country is not known. The approximate cancer incidence in Malaysia is 150 per 100 000 population. Oral cancer (OC) is one of the ten most common cancers presenting at the Institute of Radiotherapy and Oncology, Kuala Lumpur.

The Division of Stomatology, Institute for Medical Research (IMR), Malaysia is the only arm of the Ministry of Health providing histopathological diagnostic services for oral biopsies in Malaysia. From 1989 to 1997, 125–167 new cases of oral cancer per annum were reported by the Division of Stomatolo-
gy, Institute for Medical Research, Malaysia [2–10]. Of all biopsy specimens diagnosed in the Division of Stomatology, 19.8% are of oral malignancy, and 90% of malignant oral tumours are carcinomas with 59.3% being reported in Indians [11]. There thus seems to exist a unique racial differential with regards to OC incidence with the people of Indian ethnic origin accounting for about 60% of new cases of oral cancer.

The term ‘estates’ is defined in the Yearbook of Statistics, Malaysia 1994 [12] as lands or any hectarage planted with crops or on which the planting of crops is permitted. Estates are thus rubber/oil palm/coconut/cocoa plantations. In Malaysia, the estates are often the workplace as well as place of residence. Basic amenities including schools and clinics are often provided within the estate for the workers and their families. The estate communities are therefore relatively close-knit and self-contained. Uniquely also, the estate community in Malaysia is predominantly of Indian ethnic origin. The prevalence of oral habits has also been shown to be higher in the Indians [13]. Hence, the estate Indian community forms a fairly captive community with high-risk habits in relation to OC.

The risk factors for oral cancer are well documented [14–22]. Tobacco and alcohol are well-known risk factors in western countries [16], and 70% of deaths from oral cancer are associated with smoking and other forms of tobacco use [23] such as nass, bidi, and reverse smoking [15]. In developing countries, the chewing of tobacco is by far the most important cause of oral cancer, and the highest risk occurs when tobacco is incorporated in the betel quid and also used in smoking. In South Asian countries chewing of betel quid with tobacco is largely responsible for the high incidence of oral cancer [17]. More than 75% of cancers of the oral cavity and pharynx are attributable to the habits of betel quid chewing and tobacco usage [24]. Oral cancer is thus related to lifestyle, requiring lifestyle solutions. Strategies to lower the oral cancer incidence must thus include primary prevention focusing on modifying risk habits including encouraging people never to adopt any tobacco habit, encouraging people who already use tobacco to stop, and encouraging people who already use tobacco and cannot stop to at least decrease their use or to modify habits. Beliefs are a part of lifestyle and of habits; this is the rationale for our interest in beliefs related to oral cancer in this community in Malaysia.

A ‘belief’ is a mental association between an object, concept, or event to some attribute or quality [25]. The content of the belief is the subjective judgement of the probability that the object–attribute relationship is true. In the context of oral cancer beliefs in this study, therefore, ‘belief’ is the subjective assessment of whether oral cancer is preventable, and of whether a myriad of actions can result in oral cancer being prevented.

The Health Belief Model [26], which deals with the avoidance of a health threat, postulates that psychological readiness to adopt a recommended health action depends on four basic dimensions of perceived susceptibility, perceived severity, perceived benefit, and perceived barriers. In the context of this study, we have defined these dimensions, respectively, as: feelings of vulnerability to oral cancer (perceived susceptibility); feelings of the seriousness of contracting oral cancer (perceived severity); faith in the effectiveness of changes/actions that were recommended to reduce the threat of oral cancer (perceived benefit); and, negative aspects of taking on those recommended health actions (perceived barriers).

The purpose of this study is to identify the health beliefs regarding oral cancer in the Malaysian estate Indian community. The specific objectives were: to obtain insights into perceptions of susceptibility, severity, benefits, and barriers; and, to examine the beliefs in causality associated with each risk habit.

2. Methods

2.1. Study design and sampling

This investigation is part of a study on the feasibility of oral cancer screening in a high-risk community. An increasing trend for oral mucosal lesions from 25 years onwards had been reported in an oral mucosal lesions survey of adults in Malaysia [13]; therefore, sampling was by invitation to attend an oral examination and limited to adults (with or without risk habits) 20 years or more of age.

A list of all registered estates was obtained from
the National Union of Plantations. Estates larger than 500 acres were excluded, because of practical constraints; thus, a list of 291 estates of less than 500 acres remained. From this list, 15 estates were randomly selected and written to. Out of these, 11 replied agreeing to participate. The first six estates which replied were selected. At baseline, self-reported risk habit(s) were recorded and subjects were advised to preferably stop their habits, or if they are not able to, then to modify their habit(s) such as reduce the frequency of the habit(s), spitting out the quid, rinsing their mouths after a chew, and not to sleep with the quid in their mouths.

Two of the six estates with the highest prevalence of subjects with oral habits and precancer lesions were subsequently conveniently selected for follow-up. It is at this follow-up that questions on health beliefs were posed to a total of 112 subjects (94.6% Indians and 5.4% Malays).

2.2. Dependent variables

The dependent variables are risk habits, oral mucosal lesions and health beliefs. The operational definition of current ‘habit’ is ‘a repetitive action (smoking/betel quid chewing/alcohol consumption either singly or in combination) that is carried out on a regular basis (regardless of frequencies) within the past 3 months’. The ‘ex’ status was assigned if the habit had stopped for 3 months or more.

Questions on health beliefs were posed in face-to-face interviews. A total of 19 items were posed; three questions were posed to investigate the belief of causality associated with the risk habits of betel quid and/or tobacco chewing, smoking, and consumption of alcohol. The remaining 16 questions were on the four dimensions with one each for perceived susceptibility and perceived severity; 12 for perceived benefit; and two for perceived barriers. On a 5-point Likert scale, responses ranged from strongly disagree (score = 1) to strongly agree (score = 5), with high scores indicating more favourable beliefs except in the dimension of perceived barriers. A pretest was conducted in another estate prior to actual conduct of this study.

Data were collected at baseline over a 16-day period from September to October 1994 and, at follow-up, after an interval of about 15 months, over an 11-day period from late December 1995 to early January 1996.

2.3. Statistical analysis

Statistical significance was set at \( P = 0.05 \). Differences in proportions between male and female subjects, between subjects with and subjects without habits, as well as between subjects with and subjects without precancer lesions were analysed, using the \( \chi^2 \) test with Yates’ correction, for each of the 19 items of beliefs.

3. Results

The ages of the subjects ranged from 21 to 82 years. The mean age was 44.8 years and the 40–49 years age group had the biggest number of subjects. There was a preponderance of female subjects (71 females, 41 males). There were 59 (52.7%) subjects with habits and 14 (12.5%) subjects with precancerous lesions.

Results obtained for health beliefs of the 112 reviewed subjects are tabulated in Table 1. As seen in Table 1, subjects rarely expressed strong agreement or disagreement, i.e. there was a lack of response at the extreme ends of the scale except on two items. The exceptions were seen with regards to perceived severity of oral cancer and perceived barriers of giving up smoking and alcohol habits. Oral cancer was perceived to be a severe condition by the majority of subjects (62.5% agree, 20.5% strongly agree). Smoking and the habit of consumption of alcohol were perceived to be difficult to give up (smoking: 33.9% agree, 31.3% strongly agree; alcohol: 33.0% agree, 24.1% strongly agree).

Perception of susceptibility to oral cancer was felt by a moderate number (50.0%) of the subjects. Fifty percent of the subjects in this sample did not agree that oral cancer can be prevented and one-third (35.7%) did not agree that oral cancer can be cured if treated early. The belief in the benefit of various recommended preventive health behaviours, for example never adopting, stopping, or reducing the risk habits, were also poor. Responses ranged from less than one-fifth (17.0%) of subjects believing in the benefit of reducing the smoking habit, to approxi-
Table 1
Health beliefs of reviewed subjects

<table>
<thead>
<tr>
<th>Belief</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Don’t know</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n (%)</td>
<td>n (%)</td>
<td>n (%)</td>
<td>n (%)</td>
<td>n (%)</td>
</tr>
<tr>
<td>Perceived susceptibility</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It is highly possible to get oral cancer</td>
<td>– –</td>
<td>21 18.8</td>
<td>34 30.4</td>
<td>56 50.0</td>
<td>1 0.9</td>
</tr>
<tr>
<td>Perceived severity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Getting oral cancer is a serious problem</td>
<td>– –</td>
<td>7 6.3</td>
<td>12 10.7</td>
<td>70 62.5</td>
<td>23 20.5</td>
</tr>
<tr>
<td>Perceived benefit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral cancer can be prevented</td>
<td>1 0.9</td>
<td>55 49.1</td>
<td>22 19.6</td>
<td>34 30.4</td>
<td>– –</td>
</tr>
<tr>
<td>Oral cancer that is detected early can be cured</td>
<td>3 2.7</td>
<td>38 33.9</td>
<td>30 26.8</td>
<td>40 35.7</td>
<td>1 0.9</td>
</tr>
<tr>
<td>Smoking</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It will help prevent oral cancer if:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a person has never smoked</td>
<td>1 0.9</td>
<td>45 40.2</td>
<td>27 24.1</td>
<td>39 34.8</td>
<td>– –</td>
</tr>
<tr>
<td>a smoker stops smoking</td>
<td>1 0.9</td>
<td>44 39.3</td>
<td>26 23.2</td>
<td>41 36.6</td>
<td>– –</td>
</tr>
<tr>
<td>a smoker reduces smoking</td>
<td>1 0.9</td>
<td>54 48.2</td>
<td>37 33.0</td>
<td>19 17.0</td>
<td>1 0.9</td>
</tr>
<tr>
<td>Alcohol</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It will help prevent oral cancer if a person:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has never taken any alcohol</td>
<td>2 1.8</td>
<td>43 38.4</td>
<td>23 20.5</td>
<td>43 38.4</td>
<td>1 0.9</td>
</tr>
<tr>
<td>Stops taking alcohol</td>
<td>1 0.9</td>
<td>44 39.3</td>
<td>28 25.0</td>
<td>39 34.8</td>
<td>– –</td>
</tr>
<tr>
<td>Reduces the amount of alcohol</td>
<td>1 0.9</td>
<td>48 42.9</td>
<td>23 20.5</td>
<td>40 35.7</td>
<td>– –</td>
</tr>
<tr>
<td>Betel quid</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It will help prevent oral cancer if a person:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has never chewed betel quid</td>
<td>– –</td>
<td>52 46.4</td>
<td>18 16.1</td>
<td>41 36.6</td>
<td>1 0.9</td>
</tr>
<tr>
<td>Stops the chewing habit</td>
<td>– –</td>
<td>50 44.6</td>
<td>20 17.9</td>
<td>41 36.6</td>
<td>1 0.9</td>
</tr>
<tr>
<td>Reduces the chewing habit</td>
<td>1 0.9</td>
<td>61 54.5</td>
<td>22 19.6</td>
<td>28 25.0</td>
<td>– –</td>
</tr>
<tr>
<td>Changes the habit by not sleeping with the quid, spits or rinses after chewing</td>
<td>1 0.9</td>
<td>8 7.1</td>
<td>8 7.1</td>
<td>94 83.9</td>
<td>– –</td>
</tr>
<tr>
<td>Perceived barriers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It is very difficult to stop smoking</td>
<td>4 3.6</td>
<td>17 15.2</td>
<td>18 16.1</td>
<td>38 33.9</td>
<td>35 31.3</td>
</tr>
<tr>
<td>It is very difficult to stop the alcohol drinking habit</td>
<td>3 2.7</td>
<td>27 24.1</td>
<td>18 16.1</td>
<td>37 33.0</td>
<td>27 24.1</td>
</tr>
</tbody>
</table>

Table 1
The results are tabulated in Table 2. Causal association was highest for the betel quid habit (69.6% agree, 3.6% strongly agree). It was next highest for smoking (60.7% agree, 0.9% strongly agree) and was the lowest for alcohol consumption.

The χ² test with Yates’ correction showed no statistically significant differences between the male and female subjects except that more males tended to agree with the causal association between smoking and oral cancer (P = 0.03). More subjects without habits tended to believe that oral cancer is preventable (P = 0.04) and that the alcohol habit can cause
oral cancer ($P = 0.03$). There were no statistically significant differences in beliefs of subjects with lesions compared to subjects without lesions.

4. Discussion

The finding that the majority of subjects interviewed agreed that modifying the practice of betel quid chewing is of benefit to prevent oral cancer could perhaps be due to the advice given at baseline to subjects who had high-risk habits. However, this belief has practical implications of great importance; health-education programmes for oral cancer must continue to encourage subjects to modify their habits.

Many authors have deliberated on the limitations of the Health Belief Model, but there is substantial discussion of the usefulness of the Health Belief Model in the medical literature [27–30]. However, there is a paucity of literature in dental health behaviour, and agreement as to its utility is not entirely unquestioned [31,32]. Barker [31] in 1994 cast doubt on the applicability of the Health Belief Model in prevention of periodontal disease. Horowitz and Nourjah [33] described factors associated with having an oral cancer examination, while Pickwell et al. [34] uncovered the cultural meanings of rituals of the betel quid habit. These studies are related but not exactly comparable to the present investigation. Locally, no other data are available on health beliefs in oral cancer for comparison.

4.1. Limitations of the study

Health education imparted at baseline might actually have had an effect and introduce bias. This possibility could not be ruled out. It is thus certainly possible that without the baseline intervention, the belief in the severity of oral cancer would not have been so strong. However, in spite of having been the recipients of a health-education intervention, respondents remained largely unconvinced of the preventive value of changing their habits (except with regards to modifying betel quid habit).

The sample size of 112 reviewed subjects was small. Further, weighting was not done. Each of the 19 items were assumed to have equal bearing. Since no attempt was made to assess the relative importance of each of the 19 items, computation of a composite score, had it been attempted, might be erroneous.

The findings of this study describe the health beliefs in adult Malaysian estate Indians who represent an identifiable community at particularly high risk for oral cancer. However, the sampling method here limits what can be generalised to Malaysians at large.

5. Conclusion

This study provided insights into the beliefs of this community. Many subjects appropriately perceived oral cancer as a severe problem and believed in the benefit of modifying the betel quid habit. However, this community appears to have some unfavourable beliefs. The community did not seem to believe in the benefit of early detection of oral cancer. There was also skepticism with regards to many recommended preventive actions. The smoking and alcohol consumption habits were commonly deemed difficult to give up.
6. Practice implications

These are:

(i) The belief in the severity of oral cancer is strong but this could perhaps be due to the baseline intervention. Thus, severity of oral cancer perhaps need not be the main topic or be overly emphasised in future health education and health-promotion efforts during further follow-up/surveillance of this study group. However, severity of oral cancer remains a pertinent issue in new groups receiving health education for the first time.

(ii) Clearly health education must still be directed to increase beliefs that oral cancer is preventable. The message of cure when oral cancer is detected early must also be put across.

(iii) Advantage must be taken of the belief in the benefit of modifying betel quid habits; the message to not sleep with the quid in the mouth, to spit the quid out, or to rinse the mouth after chewing must figure more prominently in advice imparted.

(iv) It is a common perception that habits are difficult to give up; thus:

(a) Although habit cessation is the ideal target, it might be more practical and less daunting for reduction or modification of habit to be aimed at.

(b) Support groups or role models, coping skills, and techniques to avoid risk-to-relapse situations must be included in future health-education efforts.

(c) The dental fraternity should step up encouragement of habit-cessation efforts.

Acknowledgements

The authors wish to thank the Director, Institute for Medical Research, for permission to publish; Dr. Tee E Siong and Dr. Azriman Rosman of the Department of Human Nutrition, IMR for the invitation to join them in their work on the estate community. This study was supported at baseline by IRPA R&D Grant No. 94-68 and at follow-up, partly by University of Malaya Grant No. F254/96.

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