# Vietnamese Oral Health Beliefs and Practices: Impact on the Utilization of Western Preventive Oral Health Care

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**Abstract**

**Purpose:** Infrequent use of the Western health care by the Vietnamese may be explained by deeply-rooted traditional oral health beliefs and practices unique to the Asian culture. This study investigated Vietnamese oral health beliefs and practices and their relationship to the utilization of Western preventive oral health care services among Vietnamese-Americans.

**Methods:** An exploratory, cross-sectional survey design with a convenience sample of 140 par-ticipants (n = 140) was used for this study. Participants were recruited on site of a Vietnamese-owned business, with questionnaires consisting of 28 questions that were distributed in hard copy by the principal investigator (PI) on multiple occasions and at various times of the day.

**Results:** Spearman Rank Correlations tests showed participants who agreed with the statement, "Regular dental visits will help prevent dental problems," were more likely to utilize medical health services ($p < 0.05$) and visit a dentist if their "gums were bleeding" ($p < 0.05$). However, only 22.86% of the participants would visit a dentist if experiencing a toothache. Despite results showing a strong association between the use of medical health care services and the belief that dental visits can prevent future dental health problems, participants did not believe in seeking Western oral health care for all dental health issues. No statistical significance was found between age, gender, pri-mary language, years spent in the United States, education level, religion and the Vietnamese survey participants' individual oral beliefs and practices.

**Conclusion:** The results suggest that Vietnamese Americans holding the belief that dental visits help prevent oral health problems, were more likely to utilize Western health care services. The study also supports existing literature that Vietnamese oral health beliefs and practices impact the use of Western health care services.

**Keywords:** culture, oral health beliefs, Traditional Chinese Medicine Vietnamese Medicine, Western Medicine

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## Introduction

In the Vietnamese culture, health is seen as a state of physical and spiritual harmony, with the body requiring balance to remain in good health.[1] To achieve health and balance, two essences, such as "hot" and "cold", must harmonize with one another; while illness on the other hand, is considered to be an imbalance between two essences.[1-3] Vietnamese medicine evolved from traditional Chinese medicine (TCM),[1-3] and is based on a modified version of the Chinese philosophy of yin and yang, referred to as âm and dương.[2] It is through an imbalance in âm and dương that the traditional form of Vietnamese medicine emerged and is used to explain and address health issues.[2] The Vietnamese use a health care system comprised of either "Southern medicine" (thuoc nam) or "Northern medicine" (thuoc bac) In order to treat an imbalance.[2,3] Vietnamese people more commonly employ Chinese herbal medicine and folk medicine from the Southern medicine system, using local herbs for treatment.[2,3] Northern medicine relies on medicines from Hong Kong and Taiwan and is used by fewer individuals.[2,4,5]

The Vietnamese belief system of health and illness, also guides their approach in addressing and identifying oral health problems and influences treatment choices, i.e., the use of traditional Vietnamese practices to treat oral health problems rather than Western oral health care services.[1,3,6-8] Procedures such as preventive oral examinations and diagnostic x-rays, commonly used in Western oral health care, are not sought out by the Vietnamese.

Traditional Vietnamese health practices are either used concurrently or prior to seeking Western health care services. Additionally, the Vietnamese will typically seek Western health care only when experiencing severe pain.[1-3,7-9]

The infrequent use of Western preventive oral health care services by the Vietnamese, resulting from deeply ingrained oral health beliefs and traditional Vietnamese health practices, was the predominant theme in the literature.[1,2,9-12] It is a common belief within the Asian cultures that an "internal fire" exists in the human body resulting from stress, lack of sleep, or an unhealthy diet that includes an excess of "hot foods" (fried and spicy foods) and a lack of "cold foods" (fruits and vegetables).[13] Vietnamese cultural beliefs also attribute this "internal fire" with causing oral health problems.[13] Remedies and methods used in the Asian culture to resolve and prevent oral health issues include the avoidance of fried or spicy food, the consumption of herbal teas, and rinsing the mouth with cold boiled water. Salt water rinsing is also commonly used and believed to prevent dental caries and stress management is believed to be an effective measure in preventing gingival disease.[13]

Kwan and Holmes conducted a qualitative study investigating the oral health beliefs of the Chinese population residing in West Yorkshire, United Kingdom, and reported that participants believed bleeding "gums" were considered to be a normal condition or due to an "imbalance of the body."[14] These participants also believed the process of tooth loss would be painful, but not preventable since oral health diseases are considered to be inevitable in old age.[14] In fact, these participants did not believe that dental diseases of any kind were preventable. The adolescent group in this study held the belief that it was "natural for people to lose all their teeth as they get old" and that dental disease, primarily dental caries, was an inevitable "part of life."[14] However, in contrast to the adult and elderly group, the adolescent group preferred oral health treatment from a Western health care provider and did not believe traditional Asian health practices could help remedy oral health problems.[14] Kwan and Holmes' findings regarding oral health beliefs in this Chinese population were similar to those reported in Vietnamese populations discussed in the literature. [5,6,15-17]

In a study regarding traditional oral health care practices of Vietnamese-speaking parents (n=24) of children in Sydney, Australia, it was reported that while still in Vietnam, participants brushed their teeth with palm fruit husks or with their fingers and used salt to clean their teeth.[9] These same Vietnamese parents who used traditional oral health care practices did not seek preventive oral health screenings, diagnostic testing, or treatments and would wait until symptoms progressed before seeking oral health care services.[2,8,10,11] This use of

Table I: General & Demographic Characteristics of Study Population (n = 140)

| | |
|---|---|
| Mean age, yrs (SD) | 39.01 (12.38) |
| missing, n (%) | 5 (3.57%) |
| **Primary Language** | |
| English, n (%) | 7 (5%) |
| Vietnamese, n (%) | 115 (82.14%) |
| English & Vietnamese, n (%) | 15 (10.71%) |
| missing, n (%) | 3 (2.14%) |
| **Birth Place** | |
| Cần Thơ, n (%) | 6 (4.29%) |
| Hồ Chí Minh City, n (%) | 45 (32.14%) |
| Đà Nẵng, n (%) | 10 (7.14%) |
| Hải Phòng, n (%) | 1 (0.71%) |
| Hà Nội, n (%) | 2 (1.43%) |
| Other, n (%) | 62 (44.29%) |
| missing, n (%) | 14 (10%) |
| Years spent in the USA, yrs (SD) | 13.01 (10.69) |
| missing, n (%) | 9 (6.43%) |
| **Marital Status** | |
| Married, n (%) | 41 (29.29%) |
| Single, n (%) | 94 (67.14%) |
| missing, n (%) | 5 (3.57%) |
| **Highest Education Level** | |
| High School, n (%) | 8 (5.71%) |
| 2-4 years of college, n (%) | 73 (52.14%) |
| Graduate School, n (%) | 47 (33.57%) |
| Not Applicable, n (%) | 5 (3.57%) |
| missing, n (%) | 7 (5%) |
| **Country Where Education Received** | |
| Vietnam, n (%) | 81 (57.86%) |
| United States, n (%) | 36 (25.71%) |
| Vietnam & United States, n (%) | 14 (10%) |
| Vietname, United States, & Other, n (%) | 1 (0.71%) |
| missing, n (%) | 8 (5.71%) |
| **Religion** | |
| Buddhist, n (%) | 79 (56.43%) |
| Catholic, n (%) | 23 (16.43%) |
| Christian, n (%) | 14 (10%) |
| Other, n (%) | 9 (6.43%) |
| missing, n (%) | 15 (10.71%) |

traditional oral health care practices and approach to oral health care services by parents was also passed onto their children.[9]

The oral health beliefs and practices identified in Vietnamese and Chinese cultures, are parallel to the choices made by Asians when considering general health care options and utilization patterns for general health services.[2] In a study designed to assess the patterns of health care service use by Chinese immigrants (n=75), 45.3% of the participants used Western health care services or traditional clinics in the United States (US).[11] Thirty-two percent of the study participants stated that they travelled home to China or Taiwan for health care needs, 21.3% used US clinics as a primary source for health care needs, while 45.3% used both Western and traditional Asian clinics within the US.[11] Self-treatment and home remedies were practiced by 94.6% of the immigrants with 20% never using health care services at all.[11] The Chinese immigrants who indicated that they did not seek Western health services for care, also believed Western medicine could not cure their illnesses; most of the participants relied on self-care or traditional alternative health resources to treat their health problems.[11] The purpose of this study was to explore Vietnamese oral health beliefs and practices and their impact on the use of Western preventive oral health care services.[2,3,6]

## Methods and Materials

This quantitative, cross-sectional survey explored the oral health beliefs and utilization of preventive oral health care patterns of Vietnamese-Americans. This study was approved by the Massachusetts College of Pharmacy and Public Health (MCPHS)University Institutional Review Board. The survey setting was a Vietnamese-owned business in Dorchester, Massachusetts, frequented by the Vietnamese community. The convenience sample consisted of Vietnamese-Americans (n=140). Participants were recruited on site at the Vietnamese-owned business, with questionnaires distributed in hard copy by the principal investigator (PI) on multiple occasions and at various times of the day.

## Survey Instrument

The survey instrument used was a modified version of the survey used in a similar study by Jenkins, et al.[2] The survey was developed in English, then translated into Vietnamese, with a total of 28 questions with three sections: demographics (8 items), oral health beliefs (9 items), and use of traditional practices and Western oral health care services (11 items). The survey questions required three types of responses: binary "yes" or "no" responses, 4-point Likert scale questions, and narrative responses to open-ended questions. An item content validity index (I-CVI) was determined along with a scale content validity index (S-CVI) to determine the

Table II: Responses to "Oral Health Belief" Questions (n = 140)

| | Strongly Disagree | Disagree | Agree | Strongly Agree | Missing |
|---|---|---|---|---|---|
| Questions relating to Western medicine | | | | | |
| "Regular dental visits will help prevent dental problems." | 10 (7.14%) | 4 (2.86%) | 73 (52.14%) | 50 (35.71%) | 3 (2.14%) |
| "It is important to keep your natural teeth." | 11 (7.86%) | 0 (0%) | 56 (40%) | 70 (50%) | 3 (2.14%) |
| "Bleeding gums is a serious matter." | 7 (5%) | 6 (4.29%) | 77 (55%) | 46 (32.86%) | 4 (2.86%) |
| "Losing teeth a serious matter." | 4 (2.86%) | 10 (7.14%) | 72 (51.43%) | 51 (36.43%) | 3 (2.14%) |
| Questions relating to Eastern medicine | | | | | |
| "It is natural for people to lose all of their teeth as they get older." | 10 (7.14%) | 19 (13.57%) | 85 (60.71%) | 23 (16.43%) | 3 (2.14%) |
| "Eating too much "hot" foods contribute to oral health problems." | 8 (5.71%) | 21 (15%) | 92 (65.71%) | 17 (12.14%) | 2 (1.43%) |
| "Eating certain food will help maintain good oral health." | 8 (5.71%) | 24 (17.14%) | 99 (70.71%) | 6 (4.29% | 3 (2.14%) |
| "Bleeding gums is normal." | 22 (15.71%) | 88 (62.86%) | 21 (15%) | 4 (2.86%) | 5 (3.57%) |

Table III: Responses to "Oral Health Utilization" Questions (n = 140)

| | Yes | No | Missing | |
|---|---|---|---|---|
| **Questions relating to Western medicine** | | | | |
| Use medical health care services | 127 (90.71%) | 10 (7.14%) | 3 (2.14%) | |
| Would visit a dentist if gums were bleeding | 124 (88.57%) | 14 (10%) | 2 (1.43%) | |
| Would you visit a dentist if you had a toothache | 32 (22.86%) | 105 (75%) | 3 (2.14%) | |
| **Questions relating to Eastern medicine** | | | | |
| Have traveled to Vietnam for dental treatment | 70 (50%) | 65 (46.43%) | 5 (3.57%) | |
| Use home remedies or self-treatment for oral health problems | 14 (10%) | 124 (88.59%) | 2 (1.43%) | |
| Use Chinese herbs (Thuoc bac) | 101 (72.14%) | 36 (25.71%) | 3 (2.14%) | |
| Parents or grandparents used folk remedies or home remedies on you | 45 (32.14%) | 92 (65.71%) | 3 (2.14%) | |
| Use folk medicine for your children | 63 (45%) | 75 (53.57%) | 2 (1.43%) | |
| **Questions relating to Western medicine** | | | | |
| | **Never** | **> two yrs ago** | **≤ two yrs ago** | **Missing** |
| Timing of last physicial | 4 (2.86%) | 31 (22.14%) | 102 (72.86%) | 3 (2.14%) |
| Timing of last dental visit | 5 (3.57%) | 36 (25.71%) | 95 (67.86%) | 4 (2.86%) |
| Timing of last dental cleaning | 23 (16.43%) | 39 (27.86%) | 75 (53.57%) | 3 (2.14%) |

proportion of items with high I-CVI ratings for the individual items on the survey.[18] A panel of seven experts was chosen based on experience interacting with the Dorchester, Massachusetts Vietnamese community, to review the survey instruments. The panel of experts was comprised of a physician and pharmacist from the Vietnamese community, two acculturated Vietnamese business owners centered in the community, and an employee of a Vietnamese medicine and herbal supplement business with expertise regarding traditional Eastern practices. The panel reviewed and scored the survey instruments. Each expert employed a 4-point scale to calculate a value on the individual content (I-CVI) as well as the overall content (S-CVI). The content validity was deemed excellent if the I-CVI was .78 or higher for three or more experts and the S-CVI was .90 or higher. For the study questionnaire, four or more experts agreed with each item giving an overall I-CVI of .97. The S-CVI for the questionnaire was .93 indicating overall excellent content validity.[18] A pilot test was conducted to assess the validity of the survey instrument and to increase data reliability.[20] Vietnamese participants (n=10) from the same pool used for the full study, participated in a pilot study and were asked to provide feedback on the survey instrument with regards to clarity, word choice, ease of survey completion, and appropriate length of the survey instrument. Pilot test results were not included in the results of the final survey.

## Data Analysis

Descriptive statistics for demographic variables, oral health belief questions and oral health utilization questions were calculated using frequency percentiles. Non-parametric Spearmen Rank Correlation tests were performed to assess statistical correlations between oral health belief and oral health utilization responses.[19] Based on the results of correlations tests, select univariate and multivariate logistic

Table IV: Correlation trend tests between Oral Health belief and Oral Health utilization variables

| Spearmen's Rank Correlation Coeffecient (ρ) | | | | | | |
|---|---|---|---|---|---|---|
| | **"Use medical health care services"** 1:yes 0:no | **Timing of last physicial** 1:Never, 2:> two yrs ago 3:≤ two yrs ago | **Timing of last dental visit** 1:Never, 2:> two yrs ago 3:≤ two yrs ago | **Timing of last dental cleaning** 1:Never, 2:> two yrs ago 3:≤ two yrs ago | **Use Chinese herbs** 1:yes 0:no | **Would visit a dentist if gums were bleeding** 1:yes 0:no |
| "It is natural for people to lose all of their teeth as they get older. (1:strongly disagree, 2:disagree, 3:agree, 4:strongly agree)" | 0.06 | 0.04 | 0.02 | 0.01 | 0.05 | -0.08 |
| "Losing teeth a serious matter. (1:strongly disagree, 2:disagree, 3:agree, 4:strongly agree)" | 0.03 | 0.22** | 0.22** | 0.05 | -0.04 | -0.06 |
| "Regular dental visits will help prevent dental problems. (1:strongly disagree, 2:disagree, 3:agree, 4:strongly agree)" | 0.18* | 0.18* | 0.16 | 0.17 | 0.08 | 0.21* |

* $p < 0.05$ for trend ** $p < 0.01$ for trend

and multinomial logistic regression analyses were performed.[21] An alpha threshold of 0.05 was set for all statistical testing. Due to the exploratory nature of the study, adjustment for multiple comparisons was not performed.[21] All statistical analyses were performed in STATA® statistics/data analysis software version 11.2.

## Results

Two hundred people were asked to participate in the study survey, and a response rate of 69.5% was achieved, resulting in a total of 140 participants. Of the 140 participants, 97.85% chose to complete the survey in Vietnamese. The general and demographic characteristics of the study population can be found in Table I. The mean participant age was 39 years and the primary language spoken was Vietnamese (82.14%). The mean number of years participants had lived in the US was 13.01 years and almost half of the participants (45.71%) were born in Vietnam. The highest level of education for most of the participants was 2-4 years of college (52.14%) and the majority had received their education in Vietnam (57.86%). Most participants reported being Buddhist (56.43%).

Table II shows the response counts and frequencies for oral health belief questions. Seventy-seven percent agreed or strongly agreed with the statement "It is natural for people to lose all of their teeth as they get older," while 90% agreed or strongly agreed that "It is important to keep your natural teeth." Nearly 88% reported "Losing teeth is a serious matter." Only 26% preferred Eastern medicine over Western medicine. Nearly 78% of participants agree or strongly agreed "Eating too much 'hot' foods contribute to oral health problems" and 75% believed "Eating certain foods will help maintain good oral health." Most participants (87.86%) identified bleeding gums as an issue and not normal. The same percentage (87.85%) of participants agreed or strongly agreed that "Regular dental visits will help prevent dental problems."

Responses to questions related to oral health utilization are shown in Table III. Over 90% of respondents reported use of medical health care services and

Table V: Selected Results of Logistic Regression and Multinomial Logistic Regression

| | | **Use medical health care services** (Odds Ratio) | **Timing of last physicial** (Odds Ratio) | | **Timing of last dental visit** (Odds Ratio) | | **Use Chinese herbs** (Odds Ratio) | **Would visit a dentist if gums were bleeding** (Odds Ratio) |
|---|---|---|---|---|---|---|---|---|
| | | | > 2 yrs ago | ≤ 2 yrs ago | > 2 yrs ago | ≤ 2 yrs ago | | |
| "Regular dental visits will help prevent dental problems." (1:strongly disagree, 2:disagree, 3:agree, 4:strongly agree) | *Univariate Analysis* | 2.39** | 0.96 | 1.48 | — | — | — | 1.95* |
| | *Multivariate Analysis* | 3.15** | 0.96 | 1.35 | — | — | — | 2.08* |
| "It is important to keep your natural teeth." (1:strongly disagree, 2:disagree, 3:agree, 4:strongly agree) | *Univariate Analysis* | — | 1.23 | 2.27 | 0.59 | 1.23 | 0.65 | — |
| | *Multivariate Analysis* | — | 1.42 | 3.1* | 0.66 | 1.52 | 0.7 | — |

* $p < 0.05$ ** $p < 0.01$
*Multivariate Analysis I: adjusted for age and gender*

88.57% would visit a dentist for bleeding gums, but only 22.86% would visit a dentist for a toothache. About half of participants have traveled to Vietnam for dental treatment however, 10% reported using home remedies for oral health problems Seventy-two percent reported using Chinese herbs and 45% use folk medicine for their children. Sixty-eight percent indicated having had a physical examination and 73% had visited a dental practice in the last two years.

Selected results of Spearman Rank Correlation tests between oral health beliefs and utilization questions are shown in. The results demonstrate that participants agreeing with the statement, "Regular dental visits will help prevent dental problems" were more likely to utilize medical health care services ($p<0.05$) and have had a physical within the last two years ($p<0.05$). These participants were also more likely to visit a dentist if their gums were bleeding ($p<0.05$). Participants who agreed with the statements "Losing teeth is a serious matter" were more likely to have had a physical and a dental visit in the last two years ($p<0.01$).

Guided by the results of the correlation tests shown in Table IV, Table V shows results from select univariate and multivariate logistic and multinomial logistic regression models assessing the association between oral health beliefs and the utilization of oral health care services. Univariate analysis associating the belief that "regular dental visits will help prevent dental problems" with utilization of health care services showed a strong direct association (Odds Ratio (OR) 2.39, $p<0.01$). Adjusting the point estimate by age and gender using a multivariate model produced an increased OR of 3.15 ($p<0.01$). Additionally, belief that "regular dental visits will help prevent dental problems" was directly associated with utilization of dental services for bleeding gums in both univariate analysis (OR=1.95, $p<0.05$) and after adjusting for age and gender (OR=2.08, $p<0.05$). These results suggest a strong association between participant belief that dental visits prevent dental problems, and participant utilization of health care services. In addition, survey participants who strongly believed "it is important to keep your natural teeth" were also more likely to have had a physical examination within the last 2 years after adjustment for age and gender (OR=3.1, $p<0.01$). Additional multivariate models controlling for age, gender, primary language, years spent in the US, education level, and religion were performed, however no statistically significant associations were identified.

## Disucssion

Findings regarding the oral health belief questions supporting traditional Vietnamese health beliefs as seen in the literature, may impact utilization of

health care services by this population.[6,7,9,13,14] While only 26% of respondents preferred Eastern medicine over Western medicine, 78% of participants in this study agreed or strongly agreed "eating too much "hot" food contributes to oral health problems." Health beliefs about "hot" and "cold" foods are a central tenet of Eastern medicine and the responses to this survey suggest it continues to be a widely-held belief of Vietnamese-Americans. As previously mentioned, Vietnamese culture classify "hot foods" as fried and spicy foods and "cold foods" as fruits and vegetables.[13] This differs from the Western culture's classification of hot and cold foods as defined by the temperature of the food.

More than half of the participants indicated that they would not use folk medicine for their children. However, 72% of these adults reported using Chinese herbs for medicinal purposes which is higher than expected considering that only 26% reported a preference for Eastern medicine. These findings suggest Vietnamese Americans may actually use a combination of Eastern and Western medicine practices and this becomes an important practice for clinicians to understand in making recommendations for treatment.

Oral health beliefs and practices significantly impact utilization of health care service.[1,2,7-10] This study found that participants acculturated into Western culture and Western health beliefs and practices were more likely to utilize Western health care services. Those who do not acculturate into the Western culture and retain their Vietnamese cultural beliefs may be less likely to utilize Western health care services. The small percentage of participants with a preference for Eastern medicine over Western medicine, demonstrates the impact of acculturation among Vietnamese living in the United States.[2,3] Results of this study support and build on the existing literature, i.e. a correlation exists between health beliefs and practices of the respective Asian culture and their use of Western services.[1-3,7-10] A recommendation for future study would be the inclusion of open-ended questions as a means to increase understanding of the Vietnamese American's oral health beliefs. This may lead to identifying improved ways to offer Western medicine to this population in combination with the approaches to care found in Eastern medicine.

Almost all of the participants reported using medical health care services, which contradicts some of the literature.[2,7,9,11] This inconsistent finding may have been due to participants' misinterpretation of questions regarding use of Western health care services. This may have altered the accuracy of the findings regarding the question pertaining to the impact of participants' beliefs on utilization of medical health care services. Furthermore, in regards to the responses to the "oral health utilization" questions, future research should provide more well defined options to determine the specific Western health care services, i.e. emergency versus preventive care, being used by the Vietnamese population surveyed.

This study cannot definitively state that participants who believe in traditional Asian oral health beliefs and practices are less likely to use Western preventive oral health care services via a direct casual pathway; however results of this study do support the existing literature regarding the influence of Vietnamese and Chinese population groups' current oral health beliefs and practices on their oral health care choices.[1,2,7-10]

It is important to address the limitations in this study. Like any observational study, structural biases including residual confounding, selection bias, and data misclassification and misspecification can occur. The present study may also lack the statistical power to identify important statistical associations due to the limited sample size. The study cohort was created using a convenience sample, calling into question whether the results can be generalized to broader populations. This was also a cross-sectional study, greatly limiting the ability to "tease-out" the direction of causality and limiting the analysis to associational measures. More studies of the Vietnamese t are needed to further assess associations between oral health beliefs and practices, and the utilization of Western preventive oral health care services.

## Conclusion

This research study identified correlations between traditional Eastern oral health beliefs and the likelihood of Western preventive oral health care service use among Asian population groups. In regards to encouraging more frequent use of Western preventive oral health care services among Vietnamese, this research suggests the need for oral health care professionals to educate Vietnamese patients concerning oral health and the importance of utilizing Western oral health care services.

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