

# Improving Short and Long Term Participant Awareness About Head and Neck Cancer at a Cancer Screening Event

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## INTRODUCTION

- Early detection is important in head and neck cancer (HNC) as prognosis varies greatly with stage at diagnosis. Lack of awareness contributes to delayed diagnosis<sup>1</sup>.
- Public awareness of the major HNC risk factors, signs and symptoms is low<sup>2-4</sup>. For example, a recent survey of 2,126 randomly selected adults found that only 55%, 5%, 1% and were aware of that smoking, alcohol, and HPV, respectively, are among the most common risk factors<sup>2</sup>.
- In addition to serving as a means to screen for lesions, head and neck cancer screening events can serve to introduce head and neck cancer knowledge. The impact of educational initiatives with screening events on immediate and longer-term HNC awareness is underexplored.
- We designed an educational program aimed at increasing participant HNC awareness consisting of a presentation and subsequent screening as part of a screening fair.

## OBJECTIVES

- To assess the baseline head and neck cancer (HNC) awareness of participants at a cancer screening event and evaluate an educational program designed to improve immediate and delayed awareness.

## MATERIALS & METHODS

- An educational program focusing on HNC prevention and early detection was designed that consisted of a three minute presentation involving visual aids. Main points covered included the top risk factors for HNC and prevention strategies.
- Upon arrival to the event, participants completed a baseline demographics and awareness survey before watching the presentation given by medical students and subsequently undergoing screening for HNC.

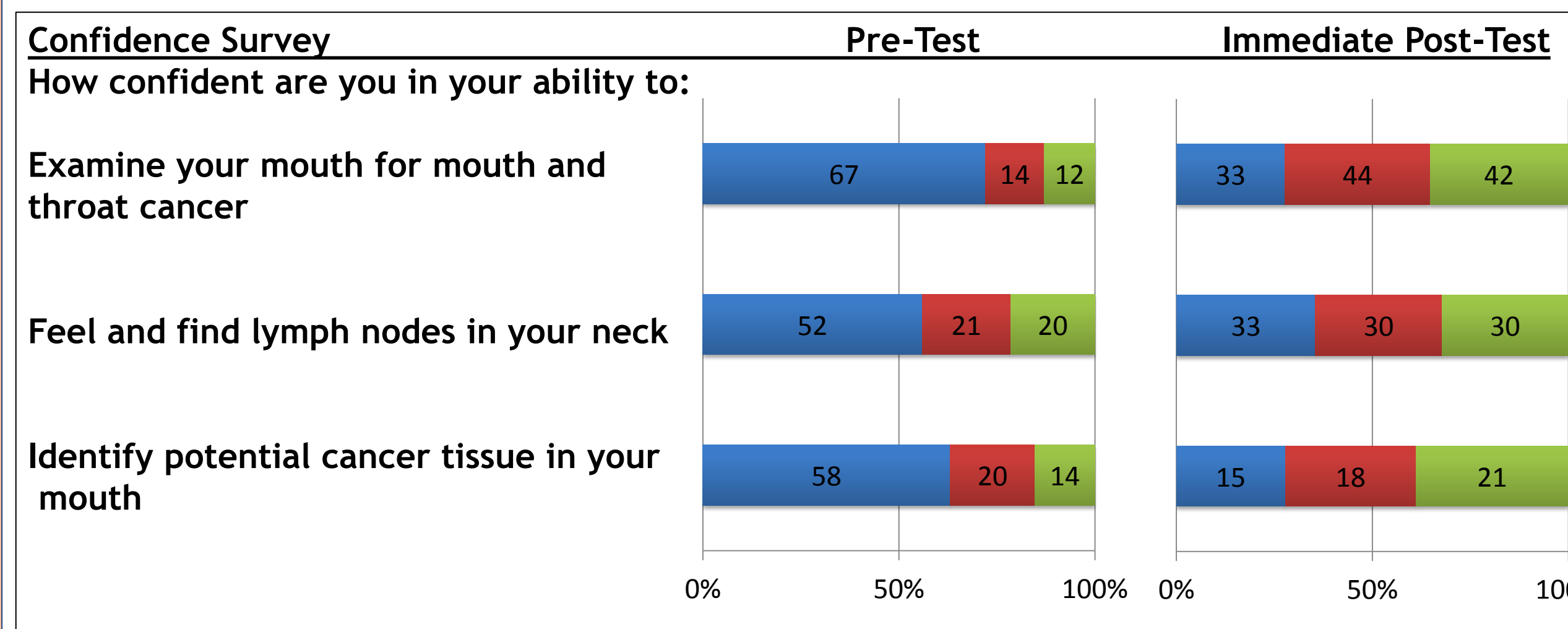


- Immediately after undergoing screening, participants completed a follow-up survey. Long term awareness was assessed by the same survey via telephone at six to eight months.
- Pretest-posttest analyses of the participants' knowledge were performed using McNemar's test for each question. Within subgroups of participants, total scores were compared using the paired t-test. Bonferroni's method was applied to control for type I error rate raised due to multiple hypotheses testing.

## RESULTS

**Table 1. Participant Characteristics**

	n(%)		n(%)
# Who Completed		Eager to Participate Again	
Pre-Event Survey	210	Very likely	161 (77%)
Immediate Post	204 (97%)	Somewhat likely	19 (6%)
Delayed Post	70 (33%)	Not likely	9 (4%)
Age		Born in the USA	
Median	55	Yes	86 (41%)
Range	23-88	No	110 (52%)
Gender		Asymptomatic	
Male	65 (31%)	Yes	68 (32%)
Female	145(69%)	No	142 (68%)
Race		Felt somewhat knowledgeable about HNC	
White	120 (57%)	Yes	45 (21%)
Black	44 (21%)	No	153 (73%)
Other/No Response	46 (22%)		
Ethnicity		Worried They Had HNC	
Hispanic	107 (51%)	Yes, somewhat	63 (30%)
Non-Hispanic	78 (37%)	Yes, very	29 (14%)
Not Reported	25(12%)	No	104 (50%)
Risk Factor +		Follow up Recommended	
Current Tobacco	24 (11%)	Routine	148 (70%)
Ever Tobacco	82 (39%)	Further H&N ENT	55 (26%)
Heavy Alcohol	30 (14%)	Immediate referral for suspected neoplasm	7 (3%)
Family History	32 (15%)		
Household Income		Employment	
<\$10,000	29 (14%)	Active	95 (45%)
<\$20,000	25 (12%)	Self	28 (13%)
<\$30,000	24 (11%)	Unemployed <1 year	7 (3%)
<\$40,000	13 (6%)	Unemployed >1 year	4 (2%)
<\$50,000	14 (7%)	Homemaker	13 (6%)
<\$60,000	7 (3%)	Student	0
<\$70,000	22 (10%)	Retired	33 (16%)
≥\$70,000	36 (17%)	Unable to Work	12 (6%)
No Answer	40 (19%)	No Answer	13 (6%)
Savings		Hospital Employee	
≥ \$10,000	54 (26%)	Yes	80 (38%)
<\$10,000	112 (53%)	No	121 (58%)
No Answer	31 (15%)		
Visits a Physician Annually		Visits a Dentist Annually	
Primary Care Provider	156 (74%)	Yes	137 (65%)
Specialist Only	22 (10%)	No	56 (27%)
No	17 (8%)		
Health Insurance		Education	
Yes	164	Less than HS	8 (4%)
Employer/School	73 (35%)	HS Degree	36 (17%)
Medicaid	17 (8%)	Some College	55 (26%)
Medicare	21 (10%)	College Degree	40 (20%)
Military	0	Some Grad	8 (4%)
Marketplace	17 (8%)	Grad Degree	46 (22%)
Private	17 (8%)	No Answer	13 (6%)
Other	19 (9%)		
No	30 (14%)		
No Answer	16 (8%)		



**Figure 1:** Confidence survey taken by participants pre- and immediate post-screening. Blue: not at all/not very confident; red: somewhat confident; green: quite/very confident.

## RESULTS

### HNC Knowledge Survey

1. Over 80% of oral, head and neck cancers are caused by these top three risk factors: \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_.
2. Head and neck symptoms lasting over \_\_\_\_\_ weeks could be a sign of cancer and should be evaluated by a doctor.
3. Head and neck cancers always cause pain; if there is no pain, then there is no cancer.
4. Early diagnosis improves the chance for cure from head and neck cancer.
5. The same virus that causes cervical cancer can cause head and neck cancer.
6. Most head and neck cancers **cannot** be prevented.
7. There is a vaccine available that may protect against certain types of head and neck cancer.
8. Head and neck cancer can be caused by a virus spread through oral sex.

**Figure 2:** Head and neck cancer knowledge survey taken by participants pre and post-screening. For question 1, specific examples such as cigarettes and beer were counted as correct. Answers are listed in Table 2.

**Table 2.** Participant Scores on the HNC Pre, Immediate Post, and Delayed Post Tests

Question	Correct Answer	Pooled Results			p-values (Pre vs. Immediate Post)	p-values (Pre vs. Delayed Post)
		Pre-Test Correct (n=210) n (%)	Immediate Post-Test Correct (n=204) n (%)	6-8 Month Post-Test Correct (n=70) n (%)		
1a	Tobacco	73 (35)	155 (76)	51 (73)	<0.001	<0.001
b	Alcohol	48 (23)	149 (73)	26 (37)	<0.001	1
c	HPV	15 (7)	104 (51)	16 (23)	<0.001	0.113
2	2-3 Weeks	36 (17)	132 (65)	22 (31)	<0.001	1
3	False	119 (57)	156 (76)	65 (93)	<0.001	<0.001
4	True	182 (87)	197 (97)	70 (100)	0.236	----
5	True	51 (24)	159 (78)	47 (67)	<0.001	<0.001
6	False	95 (45)	158 (77)	60 (86)	<0.001	<0.001
7	True	17 (8)	118 (58)	32 (46)	<0.001	<0.001
8	True	49 (23)	168 (82)	54 (77)	<0.001	<0.001

- The increase in overall score of the immediate post-test as compared to the pre-test remained significant (<0.001) even after stratifying by yes vs. no health insurance, high vs. low income, some college or less vs. more education, and positive vs. negative risk factor status.

## CONCLUSIONS

- HNC awareness was significantly improved during the event, as evidenced by the significant improvement in immediate posttest scores. However, as only one question was answered correctly greater than 90% of the time, there is room for improvement. Educational material optimized to serve this purpose needs to be developed.
- Results regarding longer term awareness are limited by loss to follow up. Participants appear to have maintained increased awareness for most concepts. Whether increases in awareness from this program have led to actual changes in behavior would be a meaningful future topic of study.

## CONTACT

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