

## Satisfaction and Race Influence on Positive Health Choices among Patients at an Urban Community Health Center

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### Abstract

**Background.** Promoting positive health choices is one way to lessen health care disparities in indigent populations. This pilot study investigated satisfaction with the health information received at an urban health care center for the indigent and its effect on health behaviors. Such information will inform providers on their role in advancing the health center's quality improvement goals (i.e., goals used to measure the clinic's performance in providing preventive service information to patients).

**Methods.** A survey was used to determine respondent satisfaction with health care information and whether respondents would make positive health choices based on this information.

**Results.** Respondents (n = 185) were satisfied with the health information received; this was the most consistent predictor of making a lifestyle change. Minority respondents were more likely to get a vaccination, to not start smoking, and to start exercising than non-minority respondents.

**Conclusion.** The results suggested that, for the positive health choices examined, satisfaction with education is very important. For certain positive health choices, race also may play a role. Additional studies should be undertaken linking chronic health problems to patient responses.

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### Introduction

Providing information on positive health choices to patients (e.g., offering information on breast cancer screening) is one goal of the Hunter Health Clinic (HHC), a federally funded community health center in Wichita, Kansas. It is also the state's only urban Indian health clinic. The clinic specializes in caring for those who are uninsured and under-insured. In 2011, HHC had more than 84,000 patient encounters and 33,900 patients; 70% of whom were uninsured.<sup>1</sup>

The study's purpose was to investigate patient perceptions regarding the provider's ability to deliver health education that encourages behavior change in an urban

indigent population and whether this information was influential in making positive health choices. The results were to be used by health center providers to measure clinic performance in providing preventive service information as required by their funders. Only patients from one of the five clinics under the HHC umbrella completed this pilot questionnaire. These results are expected to be used to enhance the survey for all clinics.

### Methods

Wichita State University's Institutional Review Board approved this study.

**Participants.** For this pilot study, a convenience sample of only English and Spanish speaking patients, who had previously visited the clinic, were asked to participate. The survey was printed in Spanish and English. The appropriate survey was read to those who could not read. Exclusion criteria were first-time patients, refusal to participate, reading or speaking a language other than English or Spanish, and under 18 years of age. No data were collected on those who were excluded.

**Materials.** The survey consisted of demographics, patient perception regarding the provider’s presentation of information about positive health choices, and patients’ implementation of these changes. Statements used a 5-point Likert scale defined at opposite poles as strongly agree to strongly disagree. The survey is found in the appendix.

Prior to administration, HHC staff and members of its board of directors evaluated the perception statements for content. The statements were matched to quality improvement goals of HHC (i.e., goals used to measure the clinic’s performance in providing preventive service material to patients such as education on cancer screening as required by federally funded grants).

**Setting.** The HHC provides medical, dental, and mental health services to individuals at five locations on a sliding payment scale. The Indian Health Service, one of this organization’s funders, requires education on healthy behaviors. Medical staff is required to present positive health choice information verbally and in written form (language-appropriate) at each visit.<sup>1</sup>

**Data analysis.** Frequency distributions depicted respondents and their answers to Likert scale statements without regard for demographics. Logistic regression was used to determine if demographic variables and satisfaction with the information received

about services to achieve healthy outcomes could predict changes in health behaviors. For analysis, minority respondents were those who chose the following race/ethnicities: African American, American Indian/Alaskan native, Asian, Native Hawaiian/Pacific Islander, or Hispanic. Non-minority respondents were non-Hispanic Caucasian. Data were analyzed with IBM SPSS Statistics (IBM Corp. 2010. IBM SPSS Statistics for Windows, Version 19.0. Armonk, NY: IBM Corp.) and the alpha level was set at .05.

**Results**

The mean age of respondents (n = 185) was 41.4 (+/-13.5) years. The response rate was 61.6%. Sixty percent were female and 58.4% were minority (Table 1). Eighty-seven percent were satisfied (strongly agree/agree) with the health care information they received. Respondents were most satisfied with information received about smoking hazards (80.5%). Of all respondents, 77.0% began eating better. For female respondents, 81.8% indicated they had undergone breast cancer screening (Table 2).

Table 1. Demographic characteristics of respondents.

Sex	
Male	74 (40.0%)
Female	111 (60.0%)
Race/Ethnicity	
Non-minority <sup>a</sup>	77 (41.6%)
Minority <sup>b</sup>	108 (58.4%)
Spanish speaking only	
Yes	27 (14.6%)
No	158 (85.4%)

<sup>a</sup>Non-minority: Non-Hispanic Caucasian

<sup>b</sup>Minority: African American; American Indian/Alaskan Native; Asian; Native Hawaiian/Pacific Islander; Hispanic

Table 2. Frequency of responses in percent without regard to demographics (n = 185).\*

Topic	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
<b>Generally satisfied with health education</b>	52.5	35.6	6.7	2.8	2.8
<b>Health care provider educated me about</b>					
Smoking hazards	52.3	28.2	8.1	2.7	8.7
Getting a vaccine	37.0	37.6	13.3	6.1	6.1
Maintaining a healthy weight	45.1	32.3	10.4	4.3	7.9
Breast cancer screening	49.5	24.3	14.6	5.8	5.8
Cervical cancer screening	48.5	25.2	13.6	6.8	5.8
<b>I made changes based on education I received</b>					
Smoking cessation	38.7	26.9	22.7	5.9	5.9
Not starting to smoke	47.2	17.9	20.8	5.7	8.5
Getting a vaccination	39.5	28.7	19.1	7.6	5.1
Eating better	46.2	30.8	14.8	4.1	4.1
Starting regular fitness routine	38.2	30.9	21.8	3.6	5.5
Screening for cervical cancer	51.0	27.5	9.8	7.8	3.9
Screening for breast cancer	51.5	30.3	8.1	5.1	5.1

\*Frequencies do not always add to 100.0% due to rounding.

A logistic regression analysis was conducted using patient satisfaction with race, age, and sex to examine their effect on making positive health choices. Patient satisfaction was the most significant predictor for all positive health choices. However, the effect was small. Being a minority was a statistically significant predictor for not starting to smoke (OR 4.9, 95% CI 1.90-12.95), for getting a vaccination (OR 5.1, 95% CI 2.35-10.95), and starting a fitness program (OR 3.1, 95% CI 1.44-6.82). Being younger predicted starting an exercise program (OR 1.0, 95% CI 1.00-1.06; Table 3).

**Discussion**

This study examined predictors of seven health outcomes from among a convenience sample in a community health care center for the indigent. The results suggested patients are influenced most by satisfaction about education on healthy outcomes

received from their provider. Satisfaction is one of the core outcome measures for health care. The most successful, competent treatment or program has limited usefulness if it does not fulfill the needs of patients receiving the service.<sup>2</sup> Many factors, such as ethnicity, socioeconomic status, age, and language barriers, affect patient satisfaction and compliance with medical advice.<sup>3</sup>

Race may be a significant predictor of making positive health choices. Being a minority predicted not starting to smoke in nonsmokers, getting a vaccination, and starting an exercise program. Shah et al.<sup>4</sup> categorized respondents as African American/Hispanic or Caucasian and found that race was not a factor in insured cardiology patients seen in an outpatient clinic in responses to statements about the quality of information received about lifestyle changes. No studies show race as an isolated factor in choosing positive health behaviors in indigent populations.

Table 3. Variables of significance in predicting positive health choices: satisfaction with information about healthy outcomes, race, and age (n=185 except as noted).

Health Outcome	Beta	Wald X <sup>2</sup>	P*	Odds Ratio	CI
<b>Quitting smoking (n = 94)</b>					
Satisfaction	1.792	4.94	.03	.167	.03-.81
<b>Not starting to smoke (n = 91)</b>					
Race	1.602	10.72	.00	4.963	1.90-12-95
Satisfaction	2.416	10.60	.00	.09	.02-.38
<b>Getting a vaccine</b>					
Race	1.624	17.09	.00	5.07	2.35-10.95
Satisfaction	1.669	7.95	.00	.19	.06-.60
<b>Eating better</b>					
Satisfaction	3.248	22.179	.00	.04	.01-.15
<b>Start exercising</b>					
Age	.030	3.99	.05	1.03	1.00-1.06
Race	1.141	8.27	.00	3.13	1.44-6.82
Satisfaction	3.04	14.00	.00	.05	.01-.24
<b>Screen cervical cancer</b>					
Satisfaction	4.095	11.86	.00	.02	.00-.17
<b>Screen breast cancer</b>					
Satisfaction	3.314	12.50	.00	.0	.00-.2

\*P ≤ 0.05 indicates that variable had significant association with health outcome based on Wald Chi-square.

At HHC, patient satisfaction with education appeared to influence self-reported changes. Cooper et al.<sup>3</sup> linked patient-centered care to improvements in patient adherence and health outcomes. A systematic review, however, found no substantial documented changes in promotion of lifestyle change in general practice.<sup>5</sup> However, when specific populations were targeted (e.g., those with hypertension, diabetes, or post-acute coronary syndrome), more patients implemented changes.<sup>3,6-8</sup> In any case, HHC provider education appeared to make an impact.

Few studies evaluated satisfaction with information about health outcomes and patients' undertaking of such outcomes. Lam and Chung<sup>9</sup> found that the more satisfied patients were with their interaction

with a pharmacist, the more likely they were to receive a flu vaccination. Almost 70% of their sample received a vaccination. However, the most important reason for vaccination was insurance coverage. Our results agreed, in part, with Lam and Chung. Satisfaction with health information may predict getting a vaccination, however, race appeared to be a more important predictor. Lam and Chung's respondents were Asian American, so race was not an issue.<sup>9</sup> Gold et al.<sup>10</sup> reported that insurance coverage and having diabetes were important in a patient's decision to have a flu vaccination. Patients at HHC received vaccines through their insurance coverage or, more commonly, paid on a sliding scale. Reasons for disagreement about vaccination were not explored in this sample.

Minority respondents were less likely to start smoking than non-minority respondents. While study results were available on smoking cessation programs in many populations, no literature was found on prevention of starting to smoke in an indigent population.

Only satisfaction with health information was a predictor for having a pap test. Eighty percent of female respondents indicated they had undergone a pap test. Most of these women were probably eligible for cervical cancer screening services through the National Breast and Cervical Cancer Early Detection Program (NBCCEDP). Fewer than 10% of those eligible received NBCCEDP-funded Pap tests from analysis of 2004-2006 data.<sup>11</sup> Eligible women were 18 years and old, had not undergone a hysterectomy and did not have health insurance. Sadler et al.<sup>12</sup> found that encouragement to have an annual physical exam, including Pap test and mammogram, was the most important message health educators needed to convey. HHC medical records were not accessed regarding hysterectomy. Regardless of this omission, HHC appears successful in encouraging women to have pap tests.

Only satisfaction with educational information appeared to predict undergoing mammography. Age was expected to be a predictive as well. The American Cancer Society's data showed that as age increases, incidence and death rates from breast cancer increase.<sup>13</sup> Ninety-five percent of breast cancer deaths occur in women older than 40. One half of the women in the sample were under 40. This could be one of reasons why age was not a significant predictor for having a mammogram.

Data on healthy outcomes regarding eating better and beginning a regular fitness routine are more difficult to find. Definitions of "eating better" and "fitness routine" vary widely. This study defined

eating better as consumption of less fatty foods and more vegetables. An example of a regular fitness routine was walking 30 minutes each day. Crouch et al.<sup>14</sup> examined intervention programs' effects in a systematic review in rural Australian women. Studies targeting physical activity reported activity increased, and these increases were sustained at one year. Studies about dietary modification programs show less positive effects over time. An exception is Khare et al.<sup>15</sup>, who found improvement in nutritional and physical activity behavior in middle-aged, disadvantaged, low-income women undergoing a 12-week enhanced intervention program. These improvements were maintained at the 1- year follow-up.

Limitations. No survey can account for all predictors for making positive health choices. The advice from the health care provider may prime patients to become more aware of and attentive to health information found in the media, friends/family, or from other services. Those who perceive themselves to be susceptible to some adverse health outcome sometimes can be prompted to undertake lifestyle changes by discussion with their health care provider.<sup>16</sup> One of this study's participation requirements was a previous visit. A return visit may indicate some respondents felt more vulnerable due to a health issue. In addition, it is not possible to know how many respondents were more compliant or had a higher sense of volunteerism than nonrespondents.

Another limitation was not matching patient history to the survey results. Most studies on lifestyle changes in indigent populations use a common chronic condition as one of the inclusion criteria.<sup>3,6,7</sup> Health and socioeconomic status are inversely related: the lower the socioeconomic status, the higher the risk of morbidity and mortality from chronic disease.<sup>17,18</sup> Using presence/absence of a chronic disease may have changed the results of the regression

analyses. Assuming that a chronic condition such as diabetes may have been a significant predictor, HHC may wish to consider targeting information about positive health choices specific to the patients' conditions.

**Future research.** Follow-up on adherence to the changes reported by the respondents would be important way to meet the clinic's goals. Long-term maintenance of healthy outcomes is difficult for anyone. It is more complicated to keep primary prevention behaviors a regular focus when many participants are dealing with day-to-day challenges due to limited income, health concerns, and often multiple family responsibilities.<sup>12</sup> Use of technology such as internet tablets to capture patient-reported outcomes prior to seeing their health care provider may be one way for HHC to match

patients for the most appropriate or desirable positive health choices.

### Conclusion

Promoting healthy outcomes is one avenue to eliminate pervasive health disparities in minority and indigent communities. Based on our data, it appears that the HHC is making a difference in assisting indigent patients in making decisions to promote healthy outcomes. Whether these changes can be continued needs to be investigated.

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### References

- <sup>1</sup> Hunter Health Care. Available at: <http://www.hunterhealthclinic.org>.
- <sup>2</sup> Di Palo MT. Rating satisfaction research: Is it poor, fair, good, very good, or excellent? *Arthritis Care Res* 1997; 10(6) 422-430. PMID: 9481234.
- <sup>3</sup> Cooper LA, Roter DL, Bone LR, et al. A randomized controlled trial of interventions to enhance patient-physician partnership, patient adherence and high blood pressure control among ethnic minorities and poor persons: Study protocol NCT00123045. *Implement Sci* 2009; 4:7-23. PMID: 19228414.
- <sup>4</sup> Shah A, Cabeza Y, Ostfeld RJ. Prevention information: Patient perceptions regarding general and race-based instruction. *Int J Cardiol* 2008; 130(1):72-74. PMID: 18558441.
- <sup>5</sup> Ashenden R, Silagy C, Weller D. A systematic review of the effectiveness of promoting lifestyle change in general practice. *Fam Pract* 1997; 14(2):160-176. PMID: 9137956.
- <sup>6</sup> Yorio J, Viswanathan S, See R, et al. The effect of a disease management algorithm and dedicated postacute coronary syndrome clinic on achievement of guideline compliance: Results from the parkland acute coronary event treatment study. *J Investig Med* 2008; 56(1):15-25. PMID: 18317424.
- <sup>7</sup> Rask KJ, Ziemer DC, Kohler SA, Hawley JN, Arinde FJ, Barnes CS. Patient activation is associated with healthy behaviors and ease in managing diabetes in an indigent population. *Diabetes Educ* 2009; 35(4):622-630. PMID: 19419972.
- <sup>8</sup> Wagner EH, Groves T. Care for chronic diseases. *BMJ* 2002; 325(7370):913-914. PMID: 12399321.
- <sup>9</sup> Lam AY, Chung Y. Establishing an on-site influenza vaccination service in an assisted-living facility. *J Am Pharm Assoc* 2008; 48(6):758-763. PMID: 19019805.
- <sup>10</sup> Gold R, DeVoe J, Shah A, Chauvie S. Insurance continuity and receipt of diabetes preventive care in a network of federally qualified health centers. *Med*

- Care 2009; 47(4):431-439. PMID: 19330890.
- <sup>11</sup>Tangka FK, O'Hara B, Gardner JG, et al. Meeting the cervical cancer screening needs of underserved women: The National Breast and Cervical Cancer Early Detection Program, 2004-2006. *Cancer Causes Control* 2010; 21(7):1081-1090. PMID: 20361353.
- <sup>12</sup>Sadler GR, Lahousse SF, Riley J, Mercado B, Trinh AC, Cruz LA. Predictors of breast and cervical cancer screening among Chamorro women in Southern California. *J Canc Educ* 2010; 25(1):76-82. PMID: 20112139.
- <sup>13</sup>National Cancer Institute. Breast cancer risk in American women. November 24, 2012. Available at: <http://www.cancer.gov/cancertopics/factsheet/detection/probability-breast-cancer>.
- <sup>14</sup>Crouch R, Wilson A, Newbury J. A systematic review of the effectiveness of primary health education or intervention programs in improving rural women's knowledge of heart disease risk factors and changing lifestyle behaviours. *Int J Evid Based Healthc* 2011; 9(3):236-245. PMID: 21884451.
- <sup>15</sup>Khare MM, Carpenter RA, Huber R et al. Lifestyle intervention and cardiovascular risk reduction in Illinois WISEWOMAN program. *J Womens Health (Larchmt)* 2012; 21(3):294-301. PMID: 22136298.
- <sup>16</sup>Kreuter MW, Chheda SG, Bull FC. How does physician advice influence patient behavior? Evidence for a priming effect. *Arch Fam Med* 2000; 9(5):426-433. PMID: 10810947.
- <sup>17</sup>Pappas G, Queen S, Hadden W, Fisher G. The increasing disparity in mortality between socioeconomic groups in the United States, 1960 and 1986. *N Engl J Med* 1993; 329(2):103-109. PMID: 8510686.
- <sup>18</sup>Smedley BD, Stith AY, Nelson AR. (Eds). *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care*. Washington DC: The National Academies Press, 2003. ISBN: 030908265X.

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Appendix

1. What is your gender (or sex)?  Male  Female
2. Your age: \_\_\_\_\_
3. Race/Ethnicity  African American  
 American Indian/Alaskan Native  
 Asian  
 Native Hawaiian/Pacific Islander  
 Hispanic  
 Non-Hispanic Caucasian  
 Other (please specify) \_\_\_\_\_

Please rate the following statements according to your satisfaction with your health care provider and the education you receive from them at Hunter Health Clinic. (*Please check only one box for each response*).

		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	N/A
	<b><i>My health care provider at Hunter Health Clinic educated me about these topics:</i></b>						
4.	Smoking hazards						
5.	Getting a vaccine (for example, shots to prevent flu and/or pneumonia)						
6.	Maintaining a healthy weight						
7.	Breast cancer screening (only females answer this question)						
8.	Cervical cancer screening (only females answer this question)						
9.	I am generally satisfied with the health care education I receive from my provider?						
10.	<b><i>I have made changes in my life based on the education I received from my health care provider at Hunter Health Clinic, including</i></b>						
	a. Quitting smoking.						
	b. Not starting to smoke.						
	c. Getting a vaccine (for example, shots to prevent flu and/or pneumonia).						
	d. Eating better (for example, less fatty foods and more vegetables).						
	e. Starting a regular fitness routine (e.g., walking 30 minutes each day, etc.)						
	f. Getting screened for cervical cancer (only females answer this question)						
	g. Getting screened for breast cancer (only females answer this question)						