

# Survey results point to interventions to increase mammographic screening in non-adherent American Indian women of one tribe

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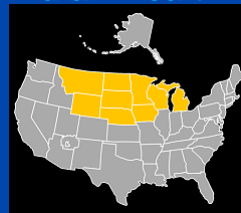
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## Background

### Northern Plains / Bemidji Indian Health Service Area

- Low screening rates
- Younger age at diagnosis
- Later stage at diagnosis
- Higher mortality



### The Tribe in this Study

- Promotes annual mammograms beginning at age 40 (Indian Health Service—IHS—guidelines)
- 36% of women  $\geq 40$  years of age had a mammogram in 2015 (IHS data)



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## Aim

### What differentiates mammographic screening behaviors of adherent and non-adherent screeners?

- Demographic characteristics
- Health Literacy
- Social Support
- Social Networks
- Planned Behavior
- Social Norms
- Health Beliefs

**Ultimate goal:** Increase screening participation of non-adherent screeners and reduce mortality



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## Methods

### Community-based participatory research

- Tribal Health Department, the Indian Health Service (IHS), and a 17 member community advisory research board

### Mailed survey

- 1554 women, > 40 years old, no history of breast cancer, with accrual target of 600 women
- Mammographic screening status ascertained by self-report

### Analysis

- Parallel launch of a global test of hypotheses for associations of the demographic and theoretical models with mammographic screening adherence and a univariate analysis.
- Global test: Factor analysis followed by multivariate analysis of variance (recently completed)
- Univariate analysis used Chi-square test for categorical variables and Wilcoxon rank-sum test for continuous variables.



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## Results

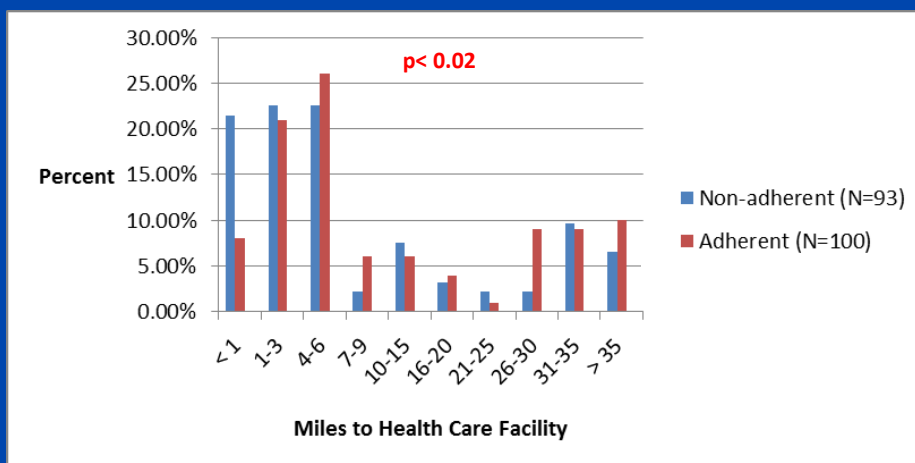
- **Response rate:**
  - ~33% (193 usable)
  - 93 non-adherent screeners, 100 adherent screeners
- **Demographics and breast cancer risk factors**
  - **No difference:** Age, language, marital status, education, employment status, most Gail Model risk factors
  - **Differed on:**
    - Distance traveled from home to health care facility
    - Biopsy history



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## Results: Demographics and risk factors--

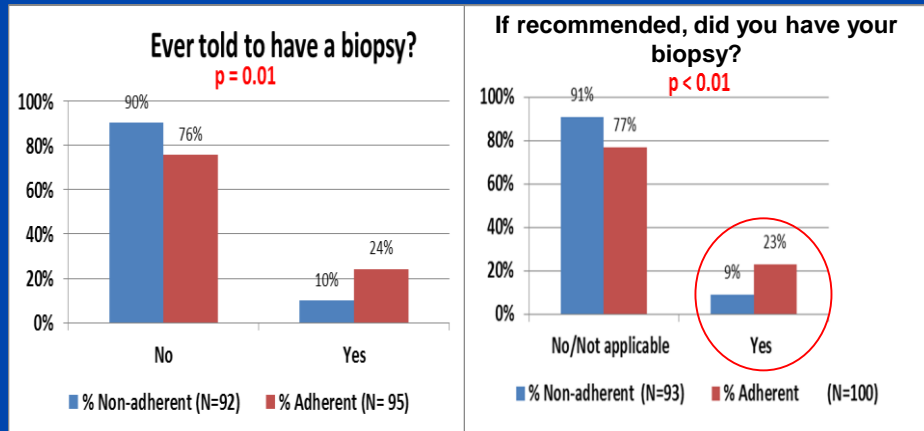
Unexpectedly, significantly more non-adherent screeners compared to adherent screeners **live close to their health care facility.**



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## Results: Demographics and risk factors--

Few non-adherent screeners are told to have a biopsy **and few have them if told**



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## Results

**Health Literacy** (conceptual understanding and knowledge)

- Four of seven significant differences between non-adherent and adherent screeners were *highly significant*.



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## Results: Health Literacy--Compared to adherent screeners, non-adherent screeners reveal *highly significant knowledge/comprehension deficits*

	Response	% Non-adherent N=93	% Adherent N=100	P
<b>Annual mammogram:</b> mammogram every 12 months	Yes	71	92	<b>&lt;0.001</b>
<b>Breast ultrasound:</b> Sound waves take a picture of breast tissue	Yes	71	91	<b>&lt;0.001</b>
<b>A family breast cancer history:</b> Increases a woman's breast cancer risk	Yes	84	98	<b>&lt;0.001</b>
<b>Proportion of correct health literacy responses</b>	Mean (SD) Median	0.60 (0.16) 0.64	0.68 (0.12) 0.71	<b>&lt;0.001</b>



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## Results: Social Support (Emotional, Informational, Instrumental and Appraisal)

- Differences only in Emotional Support and the qualities associated with that support:



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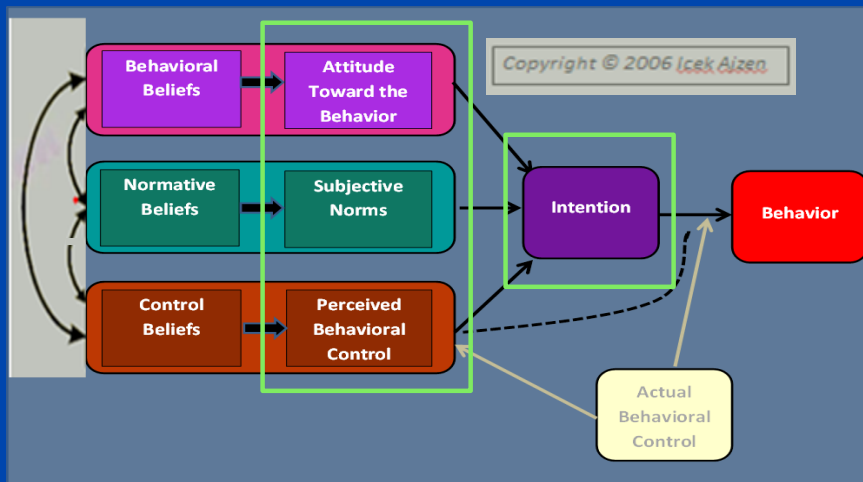
**Results: Social Support**--Compared to adherent screeners, non-adherent screeners **favor prayer over talk to friends/family, and favor good listeners, and knowledgeable listeners**

	Response	% Non-adherent N= 93	% Adherent N= 100	P
When worried and seeking comfort, I <b>pray</b>	Yes	35	18	<b>0.01</b>
When worried and seeking comfort, I <b>talk to friends and family</b>	Yes	41	61	<b>&lt;0.01</b>
When I need to talk to someone, I <b>MOST want a good listener</b>	Yes	33	20	<b>0.05</b>
When I need to talk to someone, I <b>MOST want a knowledgeable person</b>	Yes	13	4	<b>0.04</b>



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## Results: Planned Behavior



❖ **Differences in:** attitudes toward the behavior (ATB), intentions, perceived behavioral control, subjective norms



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## Results: Planned Behavior: Compared to adherent screeners, non-adherent screeners are less inclined to give screening-conducive responses

	Response	% Non-adherent N= 93	% Adherent N= 100	p
<u>Attitude toward the Behavior</u>				
Don't need a mammogram/I'll skip it.	Yes	33	3	<0.001
Between a mammogram or going with friends, I will get my mammogram.	Yes	62	87	<0.001
I get a yearly mammogram because it's important.	Yes	59	91	<0.001
<u>Intention</u>				
In the next five years, I will screen every 12 months.	Yes	56	91	<0.001
I very likely will get a mammogram every year.	Yes	45	81	<0.001
<u>Perceived Control</u>				
Nothing can stop me from getting my next mammogram.	Yes	78	100	<0.001
My doctors want me to get a yearly mammogram	Yes	78	97	<0.001
<u>Subjective Norm</u>				
It is my responsibility to get an annual mammogram.	Yes	91	99	<0.02

## Results: Health Beliefs (Susceptibility, severity, benefits, barriers, self-efficacy, cues to action)

- Differences between non-adherent and adherent screeners on 4 of 6 elements:
  - Susceptibility
  - Barriers
  - Self-efficacy
  - Cues to action

## Results: Health Beliefs: Susceptibility

Compared to adherent screeners, **non-adherent screeners believe they are less susceptible to breast cancer**

	% Non-adherent N= 93	% Adherent N= 100	P
I worry that I will get breast cancer someday.			<b>0.001</b>
No	66	41	
Yes	34	57	
Does not apply to me	0	2	



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## Results: Health Beliefs: Barriers

Compared to adherent screeners, **non-adherent screeners are more likely see screening barriers**

	% Non-adherent N= 93	% Adherent N= 100	P
PHYSICAL LIMITATIONS make it hard to get my mammogram.			<b>0.02</b>
Disagree	76	90	
Agree	24	10	
FEAR makes it hard for me to get my mammogram.			<b>0.04</b>
Disagree	83	93	
Agree	17	7	
THE DISCOMFORT makes it hard for me to get my mammogram.			<b>&lt;0.001</b>
Disagree	62	85	
Agree	38	15	



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## Results: Health Beliefs: Barriers

Compared to adherent screeners, **non-adherent screeners are less likely to perceive no screening barriers**

	% Non-adherent N= 93	% Adherent N= 100	P
NOTHING MAKES IT HARD for me to get my mammograms.			0.004
Disagree	72	51	
Agree	28	49	



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## Results: Health Beliefs: Self-efficacy

Compared to adherent screeners, **non-adherents are less prepared**

	% Non-adherent N= 93	% Adherent N= 100	p
I am likely to get my mammogram without a reminder			<0.001
Very likely-somewhat likely	63	87	
Not at all likely-pretty unlikely	36	13	
I know how to prepare for my mammogram.			0.002
No	24	7	
Yes	76	93	
I know what happens during the mammogram.			0.001
No	18	3	
Yes	82	97	
I know what a mammogram looks like.			0.03
No	24	11	
Yes	76	89	
I know what to do if I feel something unusual in my breast.			0.002
No	15	2	
Yes	85	98	

## Results: Health Beliefs: Cues to action

Compared to adherent screeners, **non-adherent screeners are less responsive to cues**

	% Non-adherent N= 93	% Adherent N= 100	P
<b>Receiving information about mammograms and breast cancer makes me more likely to get my mammogram</b>			<b>0.01</b>
Disagree	4	0	
Agree	84	96	
Would not change my behavior	12	4	
<b>Worry about breast cancer makes me want to get my mammogram.</b>			<b>0.001</b>
No	66	41	
Yes	⇒ 34	57 ←	
Does not apply to me	0	2	
<b>I am motivated to get my mammogram so that the doctor can catch any cancer early.</b>			<b>0.004</b>
No	17	4	
Yes	⇒ 83	96 ←	
<b>I am motivated to get my mammograms because they are easy to schedule.</b>			<b>&lt;0.001</b>
No	36	11	
Yes	⇒ 64	89 ←	
<b>I get my mammograms because I know someone with breast cancer</b>			<b>&lt;0.001</b>
No	51	21	
Yes	⇒ 49	79 ←	

## Limitations

### Univariate analysis:

- Likelihood of false positives
  - With 540 individual tests and a 0.05 cut-off level of significance, we expect at least 27 significant false positive results.
- We cannot be declarative about using our results for interventions without further interpretation of the global test of hypotheses and review by tribal health and IHS providers.

## Conclusions

- **Substantial differences** between non-adherent and adherent screeners in this population:
  - Documented for:
    - Demographic and breast cancer risk factors
    - Health Literacy
    - Social Support
    - Planned Behavior
    - Health Beliefs
- Findings justify:
  - Refinement of the survey and use with other tribes
  - Cautious pilot development of interventions.



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**Thank you!**

**Questions?**



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