Breast Cancer Screening Patterns Related to Mammography Adherence among Northern Plains Tribes American Indian Women

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Background
Statement of Problem

- American Indian women (AIW) have the highest proportion of late-stage breast cancer diagnoses with the lowest survival rate among all ethnic groups
- Healthy People 2010 mammography (MG) standard: Increase to 70% proportion of women who receive a MG in the preceding 2 years
- 25-40% of AIW obtained MG compared to 82-90% of Caucasian women (2000-2002)
- No published reports of regular-interval MG screening for AIW

Sources: ACS, 2005, CDC, 2004; Clegg et al., 2002; Edwards & Swan, 2002, USDHHS, 2000

Purpose of Study

Explore, examine, and identify breast cancer screening variables and their relationship to MG adherence among Northern Plains Tribes AIW

Methods
Human Subjects Procedures

- UNMC IRB
- Aberdeen Area IHS IRB
- RC Tribal Chairmen's Health Board & Northern Plains Epi Center

Entered into a research bargaining process with inter-tribal urban community

Mixed-Method Study

- Planned integration of qualitative & quantitative data within a study
- Enriches research inquiry & enhances the evidence base
- In cross-cultural research, this approach facilitates entry, and work with the population

Study I (Qualitative)

Talking Circles

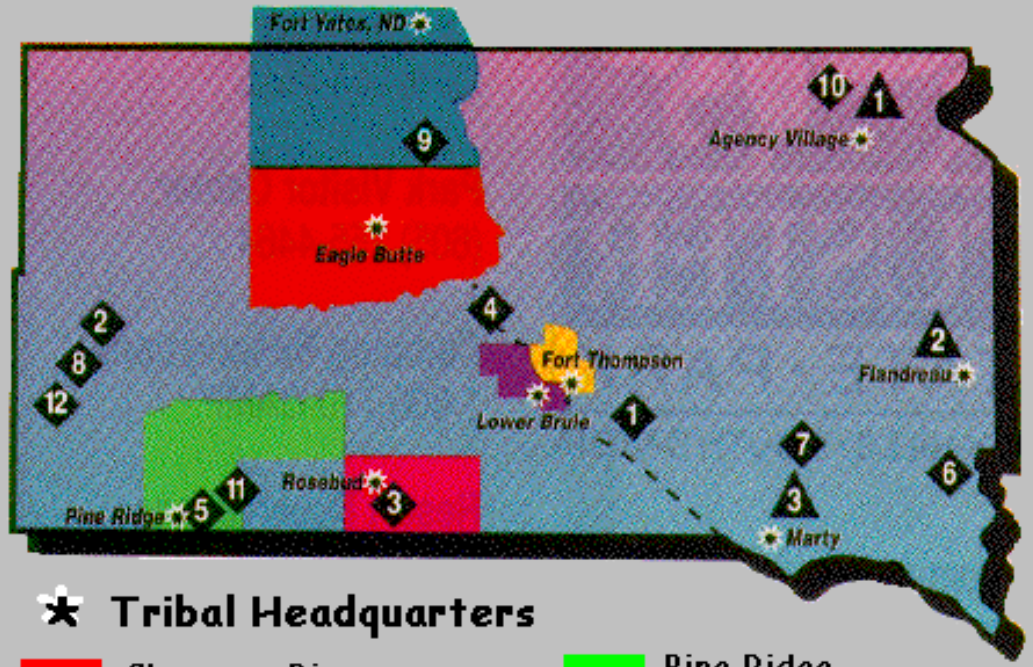
-Study I explored the experiential view of cancer and breast & cervical screening & helped inform Study II

Becker, S., Affonso, D., & Blue Horse Beard, M. (2006). Talking circles; northern plains tribes American Indian women's views of cancer as a health issue. *Public Health Nursing, 23 (1)*, 26-36.

Study II (Quantitative)

- Descriptive-correlational design
- Setting-Two outpatient IHS clinics with linked databases (& fixed MG unit) in an urban city in western South Dakota
- Sample-1121 women, age 40 ≥ using Aberdeen Area Indian Health clinic services between July 1, 1999, and June 30, 2004 (36 months of data, active users)

The Great Sioux Nation
Points of Interest



★ Tribal Headquarters

- Cheyenne River Indian Reservation
- Pine Ridge Indian Reservation
- Crow Creek Indian Reservation
- Rosebud Indian Reservation
- Lower Brule Indian Reservation
- Standing Rock Indian Reservation

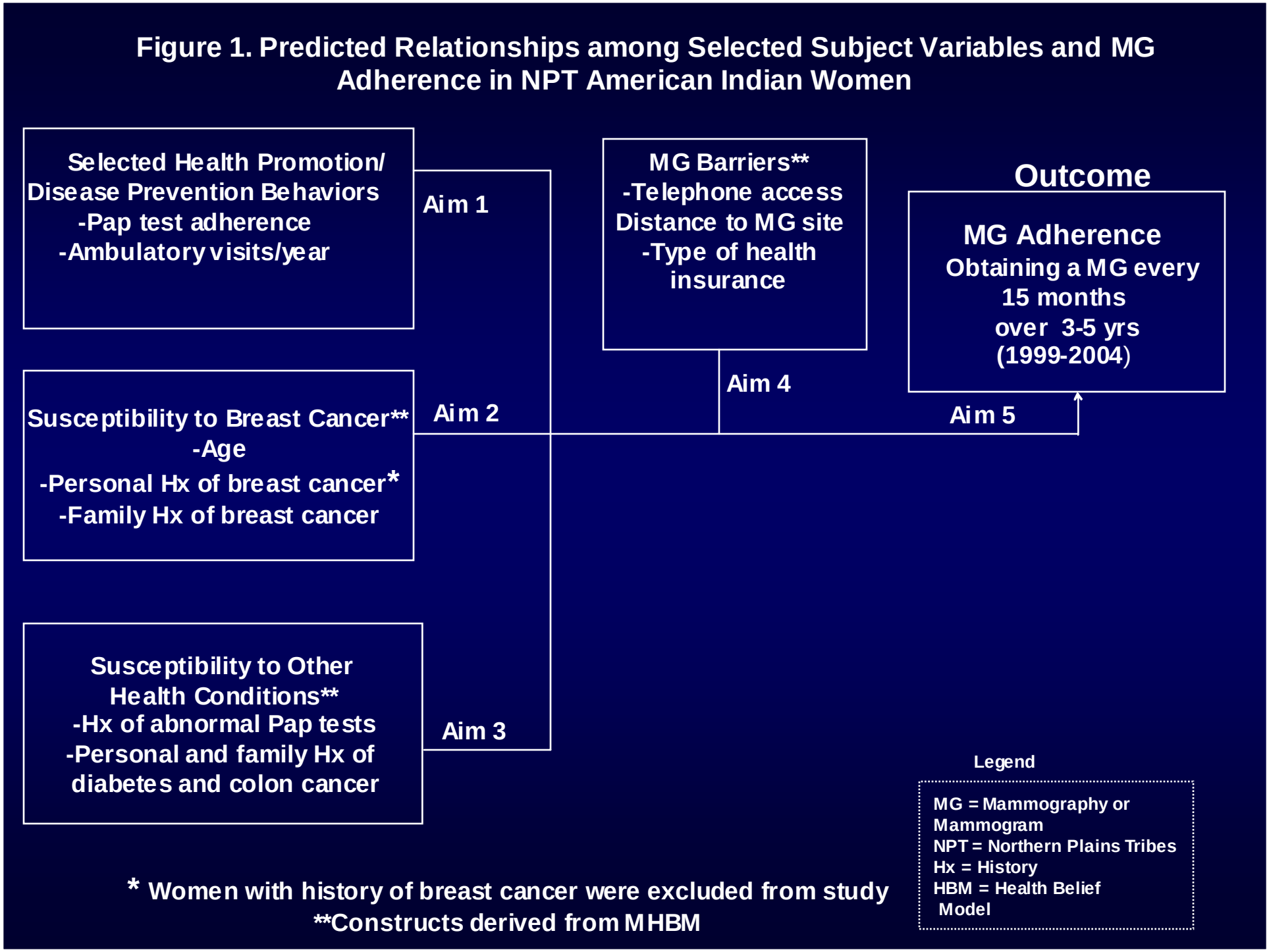
1. Sisseton Tribal Lands
2. Flandreau Tribal Lands
3. Yankton Tribal Lands

Conceptual Framework

The research model for this study used selected aspects of the Modified Health Belief Model (MHBM)

Source for using this theory; Review of the literature, and Talking Circles-what women told me-attitudes were congruent with their way of thinking

Figure 1. Predicted Relationships among Selected Subject Variables and MG Adherence in NPT American Indian Women



* Women with history of breast cancer were excluded from study

**Constructs derived from MHBM

Definition of Primary Outcome

MG Adherence

100% adherence-defined as obtaining a MG every 15 months over 3-5 years

Rationale: ACS recommends MG every 12 months for women 40 years of age and older

In this study, women were defined as 100% MG adherent every 15 months rather than 12 months because delays frequently occur when women schedule MG

Source: ACS, 2000; Champion et al., 2003; Giroux et al., 2000; Giuliano et al., 1998; Mayne & Earp, 2003

Data Collection & Validation

-Database Validation-pilot of electronic and chart record event match (n = 20)

-Data Retrieval-*NCI Patterns of Care among Native Americans* extracted files from IHS database (Wilson & Butcher, 2000) and Query Management (Q Man) tool

Results

Description of Study Sample

n= 1121 *M* age = 53.7 yrs (range = 40-95 yrs)

- 15 ambulatory visits/year
- 95 % had telephone access
- 63% had at least 1 Pap test, 11% had abnormal Pap tests
- 18.32 miles = average miles from MG site
- Personal history: 34 % diabetes, < 1% colon cancer
- Family history: 2 % breast cancer, 1% diabetes, 1% colon cancer
- Type of insurance: Medicare-32%, Medicaid-17%, and private insurance-24% (others had IHS only as payer)

Results

MG Adherence Rates

Average MG adherence for AIW was 37 % (SD = 39.5%)

- **20% had a MG every 15 months**
- **37% had a MG every 30 months**
- **45 % had no MG during study period (1999-2004)**

Results

Hierarchical Regression Analyses

Block 1: Health promotion/disease prevention behaviors (R2 = .425, p <.001)

Block 2: Susceptibility to breast cancer variables (R2 = .033, p <.001)

Block 3: Susceptibility to other health conditions (R2 = .010, p < .001)

Block 4: MG barriers (R2 = .022, p < .001)

Results

- The best fitting prediction model accounted for 49% of the variance in MG adherence and contained variables from all four MBHM-related constructs in this sample (n = 1121)

Conclusions

MG adherence rates (37 %) in this sample of NPT AIW are not meeting standards for MG adherence established by ACS (2005) & HP 2010 standards (USDHHS, 2000)

Conclusions (cont)

Women most at-risk for non-adherence were:

younger women, on Medicaid, no private insurance, nonadherent to Pap testing, fewer ambulatory visits/year to the clinics, personal history of diabetes, no family history of breast or colon cancer, no telephone access, & resided > 30 miles from the MG site

Study Limitations

Methodology Challenges

- "Perceptions" of women in relation to susceptibility to breast cancer & barriers to MG screening could not be examined
- Limited usefulness of IHS administrative electronic system for data collection, (e.g. socioeconomic status, CBE's)

Implications for Practice

Health Policy & Clinical

- Current strategies of promoting regular-interval MG adherence are insufficient and must be addressed within the IHS system

- IHS electronic database improvements need to be made before breast screening intervention effects can be reliably tracked for research use

Implications for Practice (cont)

Health Policy & Clinical

- Strategies for promoting MG adherence should be targeted to AIW most at-risk for non-adherence
- Use of elder women as role models
- Work with identified health facility barriers

Future Research

- Interventions promoting MG adherence that are targeted to at-risk women and incorporate a women's health perspective from the tribal community (Becker et al., 2006; Becker & Foxall, 2006)

Discussion