Effectiveness of the Promoting Access to Health for Pacific Islander and Southeast Asian Women (PATH for Women) Study: Outreach and Education to Promote Breast and Cervical Cancer Screening

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BACKGROUND

Asian American and Pacific Islander Women

- AAPIs are one of the fastest growing minority groups in the U.S.
- Largest percentage of AAPI in country reside in California

- Southeast Asian (SEA) women are severely underrepresented

4

United States Demographics

- 2000 Census: Southeast Asian populations

Cambodian:	206,052
Laotian:	198,203
Thai:	150,283
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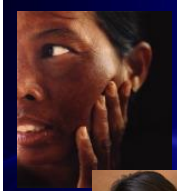
Total:	**554,538**

5

SEA women and Cancer



- Southeast Asian (SEA) women suffer greater mortality from breast and cervical cancer
  - Late diagnosis
  - More advanced stages of cancer
- Lower rates of screening
  - Less mammograms and pap smears
  - Screenings vital for early detection and treatment

6

Current Study

- Evaluated changes among SEA women in response to the intervention for the following outcomes:
  - Self-reported screening behaviors
  - Knowledge of breast and cervical cancer symptoms
  - Beliefs about cancer risks and causes
- Inclusion criteria
  - SEA women at least 45 year old
  - Cambodian, Laotian, and Thai

7

METHODS

8

PATH Study

- "PATH for Women"
- Funded by CDC under the REACH US Initiative
- Focus on underserved AAPI communities
  SEA and PI women
- Northern and Southern California
- Eliminate inequities in breast and cervical cancer
- Culturally & linguistically tailored interventions

9

Research Design

- Human Subjects
  - UCLA IRB # G02-07-107-01
  - Consent provided by all participants
- Face to face interviews
  - Bilingual community health workers
  - Performed in language most preferred by the participant

10

Research Design

- Quasiexperimental Cohort Design
- Two year follow up
  - Baseline conducted from 2002 to 2003
  - Follow up conducted from 2005

11

Two Communities

- Northern California
  - Control
    - Sacramento
    - San Francisco
    - San Mateo
    - Alameda
    - Contra Costa
    - Monterey
    - Santa Clara
    - Sutter &
    - Solano Counties
- Southern California
  - Intervention
    - Los Angeles &
    - Orange Counties

12

Intervention Components

- Outreach and education
  - Brochures in language and in English
  - Community events
  - In person one-on-one
  - Community sites – small and large groups
- Patient navigation services
  - Make appointment for screening
  - Provide support and interpretation at the medical encounter
  - Follow-up reminder calls
- Social marketing
  - TV, video, and newspaper advertisements

13

Measures

- Sociodemographic characteristics
- Screening behavior
  - Mammograms
  - Clinical breast exam
  - Pap smears
- Knowledge of breast cancer (7 items)
- Knowledge of cervical cancer (7 items)
- Beliefs of breast cancer (10 items)
- Beliefs of cervical cancer (5 items)

14

Data Analysis

- Listwise deletion for missing data
- Logistic regression was used for primary outcomes
  - Controlling for significantly different demographic variables (North vs. South)
- Analyses stratified by ethnicity:
  - Cambodian
  - Laotian
  - Thai

15

Logistic Regression

- Screening
  - Positive change (Coded as 1) in screening behavior between baseline and follow-up was defined as either:
    - Having **never** had a screening examination **at baseline** but having appropriately **performed** breast self-examination received a breast screening (clinical breast examination or mammogram) **at follow-up**
      - Behavior change
    - Having appropriately **performed** breast self-examination or received a breast screening **at baseline** and **continuing** to do this **at follow-up**.
      - No change or maintenance

16

Logistic Regression

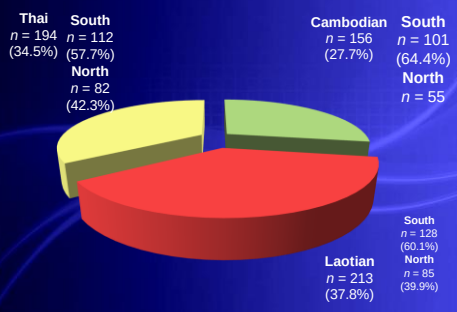
- Knowledge and Beliefs
  - Positive change (Coded as 1) in knowledge and beliefs between baseline and follow-up was defined as either:
    - Having **a greater** scale score at follow up as compared to baseline, or
      - Positive change
    - Having **the same** scale score at follow up as compared to baseline.
      - No change

17

RESULTS

18

Ethnic Breakdown



19

Demographic Characteristics

- **Age**
  - Mean = 51.0, SD = 11.9
- **Years in the U.S.**
  - Mean = 17.3, SD = 7.1
- **Site**
  - North (Control), n = 222, 39.4%
  - South (Intervention), n = 341, 60.6%
  - Total, n = 563, 100.0%

20

Demographic Characteristics

- **Education**
  - None, n = 330, 44.8%
  - Elementary to HS, n = 57, 7.7%
  - College/Vocational, n = 59, 8.0%
  - ESL/Adult School, n = 249, 33.8%
- **Employment**
  - Not employed, n = 317, 56.5%

21

Demographic Characteristics

- **Ability to pay for necessities**
  - Difficult, n = 439, 79.2%
- **Medical insurance**
  - Yes, n = 430, 76.8%
- **Marital Status**
  - Married, n = 310, 55.3%

22

Screening outcomes for Cambodian sample

	Maintenance or Positive Change		Group Effect		
	North	South			
	n (%)	*n (%)*	*OR*	*95% CI*	*p*
Mammogram	39 (86.7)	62 (62.6)	**0.22**	**0.08, 0.62**	**.004**
Clinical Breast Exam	30 (58.8)	84 (84.8)	**2.47**	**1.05, 5.80**	**.038**
Pap Smear	44 (97.8)	85 (87.6)	**0.12**	**0.01, 0.97**	**.047**

*Yellow values indicate significant p-value < .05

**Covariates included ability to pay for necessities

23

Knowledge of breast and cervical cancer for Cambodian sample

	Maintenance or Positive Change		Group Effect		
	North	South			
	n (%)	*n (%)*	*OR*	*95% CI*	*p*
Knowledge of breast cancer	30 (57.7)	87 (87.9)	**3.87**	**1.61, 9.31**	**.003**
Knowledge of cervical cancer	21 (38.2)	37 (36.6)	0.75	0.35, 1.60	.456

*Yellow values indicate significant p-value < .05

**Covariates included ability to pay for necessities

24

Beliefs of breast and cervical cancer for Cambodian sample

	Maintenance or Positive Change		Group Effect		
	North	South			
	n (%)	*n (%)*	*OR*	*95% CI*	*p*
Beliefs of breast cancer	18 (33.3)	35 (35.4)	0.84	0.38, 1.84	.659
Beliefs of cervical cancer	11 (20.4)	76 (76.8)	**11.23**	**4.69, 26.87**	**.001**

*Yellow values indicate significant p-value < .05

**Covariates included ability to pay for necessities

25

Screening outcomes for Laotian sample

	Maintenance or Positive Change		Group Effect		
	North	South			
	n (%)	*n (%)*	*OR*	*95% CI*	*p*
Mammogram	54 (66.7)	103 (80.5)	2.02	0.97, 4.18	.059
Clinical Breast Exam	43 (55.8)	108 (85.0)	**3.58**	**1.71, 7.47**	**.001**
Pap Smear	65 (84.4)	108 (87.1)	**0.99**	**0.38, 2.62**	**.988**

*Yellow values indicate significant p-value < .05

**Covariates included years in the United States, ability to pay for necessities, and insurance

26

Knowledge of breast and cervical cancer for Laotian sample

	Maintenance or Positive Change		Group Effect		
	North	South			
	n (%)	*n (%)*	*OR*	*95% CI*	*p*
Knowledge of breast cancer	42 (50.0)	90 (70.3)	**2.36**	**1.24, 4.50**	**.009**
Knowledge of cervical cancer	36 (42.4)	70 (54.7)	1.19	0.63, 2.22	.594

*Yellow values indicate significant p-value < .05

**Covariates included years in the United States, ability to pay for necessities, and insurance

27

Beliefs of breast and cervical cancer for Laotian sample

	Maintenance or Positive Change		Group Effect		
	North	South			
	n (%)	*n (%)*	*OR*	*95% CI*	*p*
Beliefs of breast cancer	31 (36.9)	85 (66.9)	**3.58**	**1.86, 6.89**	**.001**
Beliefs of cervical cancer	43 (51.2)	85 (66.9)	1.36	0.72, 2.59	.346

*Yellow values indicate significant p-value < .05

**Covariates included years in the United States, ability to pay for necessities, and insurance

28

Screening outcomes for Thai sample

	Maintenance or Positive Change		Group Effect		
	North	South			
	n (%)	*n (%)*	*OR*	*95% CI*	*p*
Mammogram	56 (71.8)	98 (89.1)	3.21	0.95, 10.78	.060
Clinical Breast Exam	69 (87.3)	96 (86.5)	0.80	0.23, 2.81	.725
Pap Smear	66 (90.4)	103 (93.6)	3.17	0.56, 17.80	.190

*Yellow values indicate significant p-value < .05

**Covariates included age, education, insurance, and marital status

29

Knowledge of breast and cervical cancer for Thai sample

	Maintenance or Positive Change		Group Effect		
	North	South			
	n (%)	*n (%)*	*OR*	*95% CI*	*p*
Knowledge of breast cancer	60 (74.1)	63 (57.3)	**0.26**	**0.11, 0.64**	**.003**
Knowledge of cervical cancer	53 (64.6)	74 (66.1)	1.04	0.46, 2.36	.920

*Yellow values indicate significant p-value < .05

**Covariates included age, education, insurance, and marital status

30

Beliefs of breast and cervical cancer for Thai sample

	Maintenance or Positive Change		Group Effect		
	North	South			
	n (%)	*n (%)*	*OR*	*95% CI*	*p*
Beliefs of breast cancer	65 (80.2)	105 (94.6)	1.57	0.46, 5.35	.470
Beliefs of cervical cancer	51 (63.8)	83 (74.8)	**3.41**	**1.39, 8.36**	**.007**

*Yellow values indicate significant p-value < .05

**Covariates included age, education, insurance, and marital status

31

DISCUSSION

32

Conclusions

Cambodian
- Changes in CBE
- Changes in knowledge of breast cancer
- Changes in beliefs of cervical cancer

Laotian
- Changes in CBE
- Changes in knowledge of breast cancer
- Changes in beliefs of breast cancer

Thai
- Changes in beliefs of cervical cancer

Overall
- Differential results were found across the different ethnic groups
- Knowledge and beliefs were more mutable than behaviors
- Few changes in Thai group

33

Limitations

- Quasi-experimental design
  - Demographic differences between communities included as covariates
- Convenience sample
  - Limits generalizability
- Self-reported data
  - Eliciting socially desirable responses

34

Lessons Learned

- Used culturally specific assessments taken from previous studies
  - Need for the rigorous validation of culturally specific questionnaires
  - Need to translate general measures in different languages

35

Lessons Learned

- In language and English datasets needed to be entered and merged carefully
  - Need for a systematic process for linking and unifying datasets
- Used simple questions to save time
  - Have you ever had a mammogram?
  - If yes, when was the last time you had a mammogram?
    - A lot of missing data due to patient refusal and interviewer error with these types of skip patterns
  - Need to frequency scales

36

Lessons Learned

- Collected a large amount of data
  - Interviews took ~1-2 hours to complete
  - Information overload
  - Future studies will be more focused
  - Reduce the burden on participants
- Evaluation conducted at baseline and 2 years follow up
  - Future studies should include additional time points, as well as evaluations more proximal to exposure to the intervention

37

Study Implications

•Previous results indicate a need to increase awareness and information about cancer detection and prevention among underrepresented SEA and PI women

•Cultural sensitivity is crucial in understanding cancer related behaviors

•Contextual factors are important

•Culturally tailored interventions are important for increasing knowledge and awareness regarding breast and cervical cancer

38

Future Directions

•More research on SEA women

•Reorganization of ethnic diversity within the Asian communities

•Currently studying Vietnamese, Samoan, and Tongan women

39

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Sourm our koun - *Cambodian/Khmer*

Khawp jai – *Laotian*

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41

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Development and Validation of the *Eyelash Satisfaction Questionnaire* (ESQ)

Burgess, S. Hansen, J. E., Cole, J. C., **& Dang, J.** (2009, October). *Validation and Cross-National Equivalence of the Eyelash Satisfaction Questionnaire (ESQ).* Presented at the International Society of Pharmacoeconomic Outcomes (ISPOR). Paris, France.

Dang, J., Hansen, J., & Burgess, S. E. (2009, October). *Validation and Assessment of Measurement Invariance of the Eyelash Satisfaction Questionnaire (ESQ) in US Cancer Patients.* Poster presented at the International Society of Pharmacoeconomic Outcomes (ISPOR). Paris, France.

Dang, J., Wang, E., Cole, J. C., Ahluwalia, G., & Burgess, S. M. (2009). *Re-evaluation of minimal important difference of the CAP Domain of the Eyelash Satisfaction Questionnaire.* 2009 International Society for Quality of Life Research meeting abstracts. The QLR Journal, A-70, Abstract #1429

42

Presenter Disclosures

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NONE

43

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44

EXTRA SLIDES

45

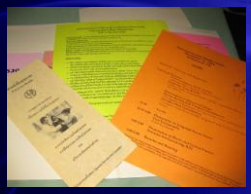
Screening Results

- Breast cancer screening
  - Mammogram
  - Clinical breast exam
- Cervical cancer screening
  - PAP smear

46

Knowledge

- Knowledge of breast cancer symptoms
- Knowledge of cervical cancer risk factors



47

Knowledge of breast cancer

- Composite score consisted of 7 items
  - Which of the following are possible signs or symptoms of breast cancer:
    - Breast lump (Yes)
    - Bloody breast discharge (Yes)
    - Puckered breast skin (Yes)
    - Painful breasts (Yes)
    - Changes in breast size from normal size (Yes)
  - A mammogram can find breast cancer in its early stages (Agree)
  - Trauma to the breast(s) causes cancer (Disagree)

48

Knowledge of cervical cancer

- Composite score consisted of 7 items
  - A women is more likely to get cancer of the cervix if she began having sex at an early age (Agree)
  - A woman is more likely to get cancer of the cervix if she has had many sexual partners (Agree)
  - A woman is more likely to get cancer of the cervix if her husband has had many sexual partners (Agree)
  - A women is more likely to get cancer of the cervix if she is exposed to cigarette smoke (Disagree)
  - A women is more likely to get cancer of the cervix if she has poor personal hygiene (Disagree)
  - A women is more likely to get cancer of the cervix if she uses an intrauterine device (Disagree)
  - A women is more likely to get cancer of the cervix if she uses birth control pills (Agree)

49

Beliefs

- Beliefs of breast cancer symptoms
- Beliefs of cervical cancer risk factors

50

Beliefs of breast cancer

- Composite score consisted of 10 items
  - Most women with breast cancer can live a normal lifetime if it is discovered and treated early (Agree)
  - A woman is more likely to get breast cancer if her mother or sister has had it (Agree)
  - A woman is more likely to get breast cancer if she eats a diet high in fat (Agree)
  - A mammogram is only needed if I feel I have symptoms (Disagree)
  - If breast cancer is found early, it can be cured (Agree)
  - Breast cancer can be cured by traditional healers (Disagree)
  - I need a mammogram only when I have a breast lump (Disagree)
  - There is not much that I can do to prevent breast cancer (Disagree)
  - Women can get breast cancer in their lifetime (Agree)
  - Breast cancer is caused by spirits (Disagree)

51

Beliefs of cervical cancer

- Composite score consisted of 5 items
  - If cancer of the cervix is found early, it can be cured (Agree)
  - A woman does not need to get Pap smears after she reaches menopause (Disagree)
  - A woman does not need to get Pap smears after she stops having children (Disagree)
  - Only women who are sexually active should get Pap smears (Disagree)
  - I'm too busy to get Pap smears (Disagree)

52

Demographics for Cambodian sample (1)

	North (n = 55)		South (n = 101)		Statistic	
	n	%	*n*	%	χ^2	*p*
Age					5.72	.126
25 to 40	8	14.8	26	26.5		
41 to 50	21	38.9	27	27.6		
51 to 60	14	25.9	17	17.3		
>60	11	20.4	28	28.6		
Years in U.S.					1.82	.402
0 to 10	7	13.0	16	16.0		
11 to 20	25	46.3	54	54.0		
Over 20	22	40.7	30	30.0		
Education					6.44	.168
None	16	29.1	41	41.0		
Element. to HS	7	12.7	21	21.0		
College/ Vocational	3	5.5	2	2.0		
ESL/Adult	27	49.1	33	33.0		
Unknown	2	3.6	3	3.0		

53

Demographics for Cambodian sample (2)

	North (n = 55)		South (n = 101)		Statistic	
	n	%	*n*	%	χ^2	*p*
Employment					2.79	.095
No	43	78.2	66	65.3		
Yes	12	21.8	35	34.7		
Ability to pay for necessities					**22.39**	**.001**
Not difficult	10	19.2	59	59.6		
Difficult	42	80.8	40	40.4		
Insurance					0.59	.443
No	5	9.3	6	5.9		
Yes	49	90.7	95	94.1		
Marital Status					5.87	.053
Unmarried	27	49.1	51	50.5		
Married	21	38.2	47	46.5		
Living as married	7	12.7	3	3.0		

*Yellow values indicate significant differences between North and South

54

Demographics for Laotian sample (1)

	North (n = 85)		South (n = 128)		Statistic	
	n	%	*n*	%	χ^2	*p*
Age					6.36	.096
25 to 40	24	28.6	20	15.7		
41 to 50	23	27.4	49	38.6		
51 to 60	19	22.6	34	26.8		
>60	18	21.4	24	18.9		
Years in U.S.					**12.92**	**.002**
0 to 10	6	7.2	5	4.0		
11 to 20	46	55.4	42	33.3		
Over 20	31	37.3	79	62.7		
Education					4.55	.337
None	15	19.0	41	32.0		
Element. to HS	8	10.1	13	10.2		
College/ Vocational	5	6.3	6	4.7		
ESL/Adult	46	58.2	60	46.9		
Unknown	5	6.3	8	6.3		

*Yellow values indicate significant differences between North and South

55

Demographics for Laotian sample (2)

	North (n = 85)		South (n = 128)		Statistic	
	n	%	*n*	%	χ^2	*p*
Employment					1.74	.188
No	56	66.7	96	75.0		
Yes	28	33.3	32	25.0		
Ability to pay for necessities					**24.13**	**.001**
Not difficult	30	36.1	11	8.7		
Difficult	53	63.9	116	91.3		
Insurance					**7.25**	**.007**
No	9	10.7	33	25.8		
Yes	75	89.3	95	74.2		
Marital Status					2.32	.314
Unmarried	32	37.6	36	28.3		
Married	51	60.0	89	70.1		
Living as married	2	2.4	2	1.6		

*Yellow values indicate significant differences between North and South

56

Demographics for Thai sample (1)

	North (n = 82)		South (n = 112)		Statistic	
	n	%	*n*	%	χ^2	*p*
Age					**13.25**	**.004**
25 to 40	18	22.0	14	12.5		
41 to 50	38	46.3	33	29.5		
51 to 60	15	18.3	37	33.0		
>60	11	13.4	28	25.0		
Years in U.S.					1.10	.577
0 to 10	27	33.3	29	26.4		
11 to 20	29	35.8	44	40.0		
Over 20	25	30.9	37	33.6		
Education					**43.58**	**.001**
None	11	13.4	51	45.5		
Element. to HS	14	17.1	0	0.0		
College/ Vocational	28	34.1	18	16.1		
ESL/Adult	26	31.7	32	28.6		
Unknown	3	3.7	11	9.8		

*Yellow values indicate significant differences between North and South

57

Demographics for Thai sample (2)

	North (n = 82)		South (n = 112)		Statistic	
	n	%	*n*	%	χ^2	*p*
Employment					3.13	.077
No	18	22.2	38	33.9		
Yes	63	77.8	74	66.1		
Ability to pay for necessities					0.01	.909
Not difficult	2	2.4	3	2.7		
Difficult	80	97.6	108	97.3		
Insurance					**21.84**	**.001**
No	17	20.7	60	54.1		
Yes	65	79.3	51	45.9		
Marital Status					**27.49**	**.001**
Unmarried	20	24.7	55	49.1		
Married	60	74.1	42	37.5		
Living as married	1	1.2	15	13.4		

*Yellow values indicate significant differences between North and South

58

Conclusions

Screening Outcomes

- Expected findings
  - 2.47 greater odds of CBE in intervention group as compared to control group among Cambodians
  - 3.58 greater odds of CBE in intervention group as compared to control group among Laotians
- Unexpected findings
  - 4.48 greater odds of mammogram in control group as compared to intervention group among Cambodians
    - Large 95% CI (1.62 – 12.37)
  - 8.56 greater odds of pap smear in control group as compared to intervention group among Cambodians
    - Large 95% CI (1.03-71.31)
  - No differences in screening behaviors found among Thais

59

Conclusions

Knowledge of breast cancer

- Expected Findings
  - 3.87 greater odds of having similar or improved knowledge of breast cancer in invention group as compared to control group among Cambodians
  - 2.36 of having similar or improved knowledge of breast cancer in invention group as compared to control group among Laotians
- Unexpected Findings
  - 3.83 greater odds of having similar or improved knowledge of breast cancer in the control group as compared to intervention group among Thais
    - Large 95% CI (1.57-9.32)

60

Conclusions

Knowledge of cervical cancer
•No differences found among Cambodians, Laotians, or Thais

Beliefs of breast cancer
•3.58 greater odds of similar or positive beliefs about breast cancer in the intervention group as compared to control group among Laotian
•No differences found among Cambodians and Thais

Beliefs of cervical cancer
•11.23 greater odds of similar or positive beliefs about cervical cancer in intervention group as compared to control group among Cambodians
•3.41 greater odds of similar or positive beliefs about cervical cancer in intervention group as compared to control group among Thais
•No differences found among Laotians

61