

The Association of Social Support with Breast and Cervical Cancer Screening

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Presenter Disclosure

Patricia Documet
 has no relationships to disclose

Background: SES and Screening

- Income and breast and cervical cancer screening¹
 - >=\$35K: Odds ratio 1.22 (1.05-137)
- Education (2008)²

Education	Mammogram	Pap test
No HS diploma/GED	53.8%	60.6%
HS diploma/GED	65.2%	69.6%
Some college or more	73.4%	82.6%

1. Welch et al., 2008
 2. CDC, 2011 (www.cdc.gov)

Background: Unclear Relationships

- SS is associated with screening
 - mammogram^{3,4}
 - Pap test^{5,6}
 - CBE⁷
- Effect is larger on women of lower income³
 - Mammogram and CBE
- Others find SS is not associated with screening
 - Mammogram^{8,10}
 - Pap test⁹
 - CBE^{8,9}

3. Messina et al., 2004 6. Gamarra et al., 2009 9. Kang et al., 1994
 4. Fite et al., 1996 7. Silva et al., 2009 10. Allen et al., 2008
 5. Katapodi et al., 2002 8. Allen et al., 1999

Literature Gaps

- Population
 - White, affluent women
 - Small, non-representative samples
- Measurement
 - Incomplete measurement of SS
- Study design
 - Cross-sectional
 - Focus on single screening behavior
 - Compliance not comparable

Objective #1

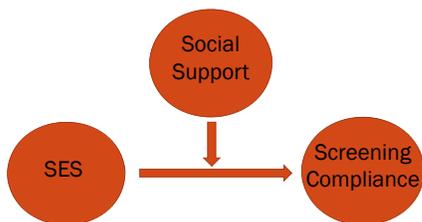
Test the association between SS and compliance with American Cancer Society guidelines regarding breast and cervical cancer screening

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    graph LR
      A((Social Support)) --> B((Screening Compliance))
    
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Objective #2

Test SS as a moderator of the effect of SES on breast and cervical cancer screening



Hypotheses

1. Women with higher social support will be more compliant with mammogram, Pap test and clinical breast exam guidelines.
2. Social Support moderates the relationship between income and screening behavior.

Data: Allegheny County-BRFSS

- N=5442 adults age 18+
- Population based/Random Digit Dial (RDD)
- Conducted 2009-2010

Screening Behavior	# Available for Analysis
Mammogram	N=2,946
Pap Test	N=2,724
Clinical Breast Exam	N=3,607

Data: ACS Compliance Guidelines

Screening Behavior	Age	Frequency
Mammogram	40+	Yearly
Pap Test	21-29 30-70	Yearly Every 3 Years
Clinical Breast Exam	20-39 40+	Every 3 Years Yearly

Statistical Analysis

1. Logistic regression: Proc surveylogistic (SAS 9.3)
2. Income in eight categories
 - a. <\$10,000
 - b. \$10,000-\$14,999
 - c. \$15,000-\$19,999
 - d. \$20,000-\$24,999
 - e. \$25,000-\$34,999
 - f. \$35,000-\$49,999
 - g. \$50,000-\$74,999
 - h. >=\$75,000
3. SS: Subset of MOS scale, alpha 0.831¹¹
4. A priori models including age and insurance
5. Additional covariates were considered
6. Tested moderation if main effects were significant

11. Gjesfield, 2007

Sample Characteristics

	Mammogram (N=2,946)	Pap test (N=2,724)	CBE (N=3,607)
Mean age (SD)	62.8 (13.4)	50.0 (12.8)	57.1 (17.2)
Household income (< \$35,000)	51.0%	43.2%	49.5%
Race (African American)	18.7%	24.2%	21.5%
Social support scale* (SD)	12.6 (3.5)	12.8 (3.5)	12.7 (3.5)
Social & emotional support** (SD)	1.8 (1.0)	1.9 (1.0)	1.8 (1.0)
Has a partner	48.6%	57.4%	49.3%
Compliant	56.1%	82.8%	72.4%

* 4 item index of social support; range 0-16 with higher number indicating greater perceived SS
 ** 1 item scale measuring social and emotional support; range 0-4 where 0 = Never and 4 = Always

Results: Objective #1

Test the association between SS and compliance with American Cancer Society guidelines regarding breast and cervical cancer screening

- Hypothesis

Women with higher social support will be more compliant with mammogram, Pap test and clinical breast exam guidelines.



Results: Mammogram Compliance on Social Support*

	OR	95%CI		p
Social Support Scale(4 Items)				
No Social Support (ref.)	1.00	-	-	<.0001
Low Social Support	1.25	1.14	1.38	-
Moderate Social Support	1.66	1.34	2.07	-
High Social Support	2.47	1.68	3.65	-
Partner				
No Current Partner (ref.)	1.00	-	-	0.009
Current Partner	1.31	1.07	1.60	-
Emotional & Social Support(1 Item)				
Never (ref.)	1.00	-	-	<.0001
Rarely	1.19	1.09	1.29	-
Sometimes	1.40	1.19	1.66	-
Usually	1.67	1.30	2.14	-
Always	1.97	1.41	2.76	-

* Adjusted for age, household income and medical insurance

Results: Pap Test Compliance on Social Support*

	OR	95%CI		p
Social Support Scale(4 Items)				
No Social Support (ref.)	1.00	-	-	0.0011
Low Social Support	1.24	1.09	1.41	-
Moderate Social Support	1.62	1.21	2.16	-
High Social Support	2.35	1.41	3.92	-
Partner				
No Current Partner (ref.)	1.00	-	-	0.1794
Current Partner	1.24	0.91	1.68	-
Emotional & Social Support(1 Item)				
Never (ref.)	1.00	-	-	0.009
Rarely	1.18	1.04	1.33	-
Sometimes	1.38	1.08	1.77	-
Usually	1.63	1.13	2.35	-
Always	1.91	1.18	3.12	-

* Adjusted for age, household income and medical insurance

Results: Clinical Breast Exam Compliance on Social Support*

	OR	95%CI		p
Social Support Scale(4 Items)				
No Social Support (ref.)	1.00	-	-	<.0001
Low Social Support	1.32	1.19	1.46	-
Moderate Social Support	1.85	1.47	2.34	-
High Social Support	3.00	1.99	4.52	-
Partner				
No Current Partner (ref.)	1.00	-	-	0.1441
Current Partner	0.85	0.68	1.06	-
Emotional & Social Support(1 Item)				
Never (ref.)	1.00	-	-	<.0001
Rarely	1.21	1.11	1.33	-
Sometimes	1.48	1.23	1.77	-
Usually	1.79	1.37	2.35	-
Always	2.18	1.52	3.12	-

* Adjusted for age, household income and medical insurance

Results: Objective #2

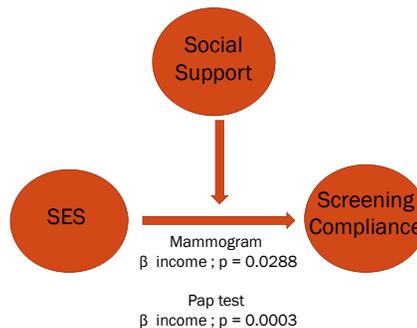
Test SS as a moderator of the effect of SES on breast and cervical cancer screening

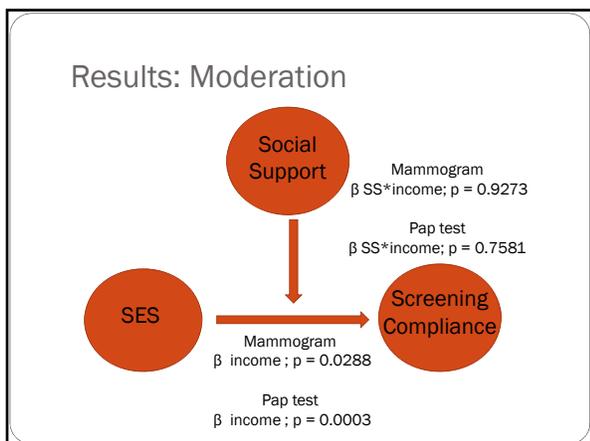
- Hypothesis:

Social Support moderates the relationship between income and screening behavior.



Results: Moderation





Results: Moderation SES (HH-Income) by Social Support *

MAMMOGRAM	β	SE	p
Income*Social Support (4 Items)	.0005	.006	.9273
Income*Partner	.0010	.050	.9839
Income*Emotional & Social Support (1 Item)	.0100	.020	.5840
PAP TEST	β	SE	p
Income*Social Support (4 Items)	-.0021	.007	.7581
Income*Partner	-.0507	.069	.4598
Income*Emotional & Social Support (1 Item)	-.0133	.025	.6004

* Adjusted for age, household income and medical insurance

Conclusions

- Social support is associated with screening behavior
- The association between SES (income) and cancer screening behavior is independent of SS

Strengths	Limitations
Large, population-based sample	Cross-sectional
18-24% African American	Limited to Allegheny county
Multiple measures of Social Support	Cannot distinguish on dimensions of SS
Use of ACS guidelines to measure compliance	Excludes those without a landline telephone

References

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