

# Health Needs and Health Care Utilization among Rural, Low-Income Women



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# Review of Presentation

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- Background and need for study
- Study sample
- Methods
- Results
- Implications and Conclusions



# Background and Need for Study

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- Barriers to access and utilization of health care resources among rural populations is a significant public health issue
- Federal Office of Rural Health lists health care access as the number one priority to be addressed in health disparities research (Gamm, Hutchinson, Dabney & Dorsey, 2003)

# Background and Need for Study

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- **Health disparities research has shown rural residents are less healthy than urban residents**
  - Rural residents have higher prevalence of smoking, obesity, physical inactivity, and limitations in daily activity due to chronic health conditions (NCHS, 2001)
  - Rural residents are more likely to die from chronic obstructive pulmonary disease, unintentional injuries, and suicide (NCHS, 2001)
  - Rural poverty (21.1%) exceeds urban poverty (14.3%) (Economic Research Service, 2005) exacerbating many illnesses associated with poverty (Ricetts, Johnson-Webb, & Randolph, 1999)

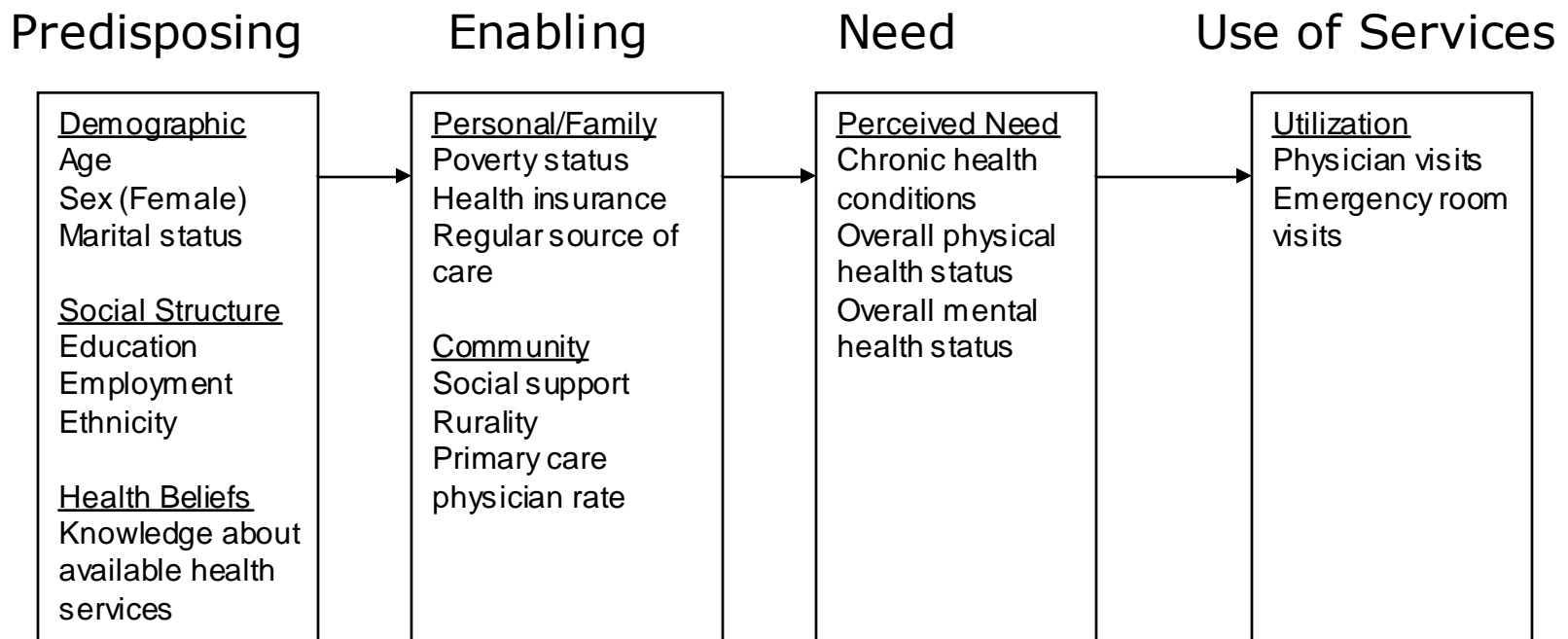
# Background and Need for Study

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- **Rural, low-income women face barriers to health service utilization, including:**
  - Fewer specialized physicians (Rosenblatt & Hart, 1999)
  - Physicians not trained to work in rural areas (U.S. Department of Health and Human Services, 2002)
  - Limited administrative physician support services (AAFP, 1999)
  - More rural residents are uninsured (NCHS, 2001) and for longer periods of time (Ziller et al., 2003)

# Purpose of this Study

- To use Andersen's Behavioral Model of Health Service Use (1968, 1995) to investigate primary care and emergency health services utilization among rural, low-income women



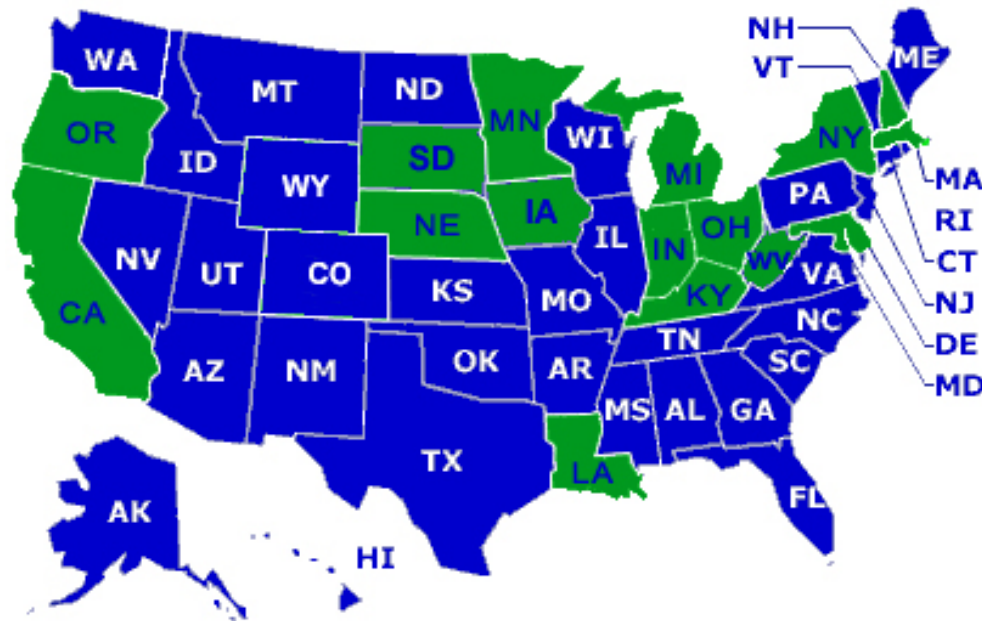
# Research Question/Hypotheses

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- **Research Question:** *What predisposing, enabling, and need factors are associated with primary and emergency health services utilization for rural, low-income women?*
  
- **Hypotheses:**
  - Predisposing factors create conditions for women seeking care
  - Care-seeking may be limited by income, insurance, provider availability and rurality
  - Women must recognize they have a health care need before they seek services

# Rural Families Speak

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Green States = Sample States

- ❑ USDA-funded longitudinal investigation of 413 low-income families in 23 rural counties in 16 states (2000-2002)



# Rural Families Speak

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- White, African American, and Latina women aged 18 and older
- At least 1 child under age 13
- Income  $\leq$  300% of Federal Poverty Line
- Recruited through programs serving low-income families (TANF, WIC, Food Stamps, Head Start, County Extension Service)
- Qualitative and quantitative data collected in face-to-face interviews

# Study Sample

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- Respondents participating in wave 3 ( $N=275$ )
- Wave 3 included an expanded health survey based on previous findings in waves 1 and 2

# Variables of Interest

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- **Dependent variables:**
  - Health care utilization in the last year
    - Self-reported visits to physician (m=9.57)
    - Self-reported visits to emergency department (m=0.56)

# Independent Variables of Interest

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## □ Predisposing Characteristics

- Demographics: age, marital status
- Social Structural: educational level, employment status, ethnicity
- Health beliefs: beliefs about available health care services in the community

## □ Enabling Characteristics

- Demographics: poverty status (FPL), health insurance coverage (Y/N), usual source of care (Y/N)
- Community Factors: rurality (Beale codes), social support (Parenting Ladder), primary care physician rate (Community Health Status Indicators Project, HRSA)

# Independent Variables of Interest

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## □ Health Needs

- Chronic health problems (health inventory)
- Overall physical health status (SF-36)
- Overall mental health status (SF-36)

# Data Analysis

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- STATA 9.0
- Computed descriptive statistics
- Negative binomial regression (NBR)
  - Useful for count data that does not follow the Poisson distribution
- Block entry based on predisposing, enabling, and need factors
- Significance defined as  $P=0.05$

# Results: Descriptive Statistics

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<b>Characteristic</b>	<b>Proportion</b>
<b>Age</b> , mean (SD), years	30.9 (7.4)
<b>Marital Status</b>	
Single/Never Married	21.1
Married/Living with Partner	61.1
Divorced/Separated/Widowed	17.8
<b>Education</b>	
< 12 years	22.9
12 years	29.8
> 12 years	47.3
<b>Employment status</b>	
Working for pay (FT or PT)	59.0
Not working for pay	41.0

# Results - Descriptive Statistics

<b>Characteristic</b>	<b>Proportion</b>
<b>Race/Ethnicity</b>	
Non-Hispanic White	73.4
Latino/Hispanic	15.7
African American	5.8
Other	5.1
<b>Income as a percent of poverty, mean (SD)</b>	119.9 (88.9)
<b>Health insurance coverage (public or private)</b>	
Yes	70.5
No	29.5
<b>Has a usual doctor</b>	
Yes	80.8
No	19.2
<b>Number of chronic health problems, mean (SD)</b>	1.68 (1.71)



# Results – Frequency Physician Visits

Factor	Block 1		Block 2		Block 3	
	Incidence-rate Ratio	p-value	Incidence-rate Ratio	p-value	Incidence-rate Ratio	p-value
<b>Predisposing Characteristics</b>						
Age, years	1.00 (0.01)	0.77	0.99 (0.01)	0.52	<b>0.96 (0.01)</b>	0.01
Marital Status						
Single/Never Married	REF	REF	REF	REF	REF	REF
Married/Living with Partner	0.77 (0.16)	0.22	0.69 (0.15)	0.10	0.97 (0.32)	0.92
Divorced/Separated/Widowed	0.64 (0.16)	0.07	0.61 (0.16)	0.06	1.37 (0.50)	0.39
Education						
< 12 years	REF	REF	REF	REF	REF	REF
12 years	0.97 (0.21)	0.90	0.91(0.21)	0.69	1.32 (0.36)	0.31
> 12 years	1.13 (0.24)	0.57	1.03 (0.25)	0.92	1.14 (0.36)	0.68
Race/Ethnicity						
Non-Hispanic White	REF	REF	REF	REF	REF	REF
Latino/Hispanic	1.10 (0.25)	0.67	1.20 (0.39)	0.57	1.31 (0.46)	0.44
African American	0.89 (0.32)	0.75	0.63 (0.27)	0.27	0.96 (0.45)	0.93
Other	1.24 (0.44)	0.53	1.38 (0.52)	0.40	0.84 (0.33)	0.65
Employment status	<b>0.47 (0.07)</b>	<0.00	<b>0.63 (0.11)</b>	0.01	0.93 (0.21)	0.76
Health beliefs	0.96 (0.04)	0.40	0.96 (0.06)	0.45	1.05 (0.07)	0.48

# Results – Frequency Physician Visits

Factor	Block 1		Block 2		Block 3	
	Incidence-rate Ratio	<i>p</i> -value	Incidence-rate Ratio	<i>p</i> -value	Incidence-rate Ratio	<i>p</i> -value
<b>Enabling Characteristics</b>						
Poverty			0.99 (0.01)	0.34	0.99 (0.01)	0.44
Health insurance status			<b>1.64 (0.35)</b>	0.02	<b>1.62 (0.40)</b>	0.05
Has a regular doctor			<b>2.15 (0.56)</b>	0.01	<b>2.10 (0.61)</b>	0.01
Social support			0.97 (0.04)	0.35	0.96 (0.04)	0.17
Degree of rurality			0.93 (0.05)	0.21	0.92 (0.05)	0.36
County rate of primary care physicians			1.00 (0.01)	0.20	1.01 (0.01)	0.12
<b>Need</b>						
Chronic health problems					1.01 (0.01)	0.12
Overall physical health					<b>1.17 (0.07)</b>	0.01
Overall mental health					0.99 (0.01)	0.28
<b>Model Statistics</b>						
Dispersion in alpha	1.27 (0.11)		1.09 (0.11)		0.88 (0.12)	
Likelihood ratio chi-square (degrees of freedom)	32.74 (10)	<0.001	52.00 (16)	<0.001	64.33 (19)	<0.001

# Results – Emergency Dept. Use

Factor	Block 1		Block 2		Block 3	
	Incidence Rate Ratio	p-value	Incidence Rate Ratio	p-value	Incidence Rate Ratio	p-value
<b>Predisposing Characteristics</b>						
Age, years	1.00 (0.02)	0.83	1.01 (0.02)	0.66	1.01 (0.03)	0.78
Marital Status						
Single/Never Married	REF	REF	REF	REF	REF	REF
Married/Living with Partner	1.00 (0.35)	0.38	0.85 (0.32)	0.66	1.82 (1.14)	0.34
Divorced/Separated/Widowed	1.35 (0.54)	0.46	1.22 (0.52)	0.64	<b>4.78 (3.08)</b>	0.02
Education						
< 12 years	REF	REF	REF	REF	REF	REF
12 years	0.83 (0.31)	0.61	0.63 (0.25)	0.24	0.52 (0.29)	0.24
> 12 years	0.83 (0.30)	0.61	0.84 (0.34)	0.67	<del>0.43</del> (0.24)	0.13
Race/Ethnicity						
Non-Hispanic White	REF	REF	REF	REF	REF	REF
Latino/Hispanic	0.47 (0.20)	0.08	0.40 (0.24)	0.13	0.61 (0.44)	0.49
African American	0.28 (0.25)	0.15	0.41 (0.37)	0.32	<del>1.75</del> (1.74)	0.58
Other	0.58 (0.36)	0.38	0.79 (0.53)	0.73	<del>0.63</del> (0.45)	0.52
Employment status	0.62 (0.16)	0.07	0.59 (0.18)	0.08	<del>0.98</del> (0.47)	0.96
Health beliefs	0.94 (0.09)	0.53	0.99 (0.10)	0.97	<del>0.94</del> (0.94)	0.64

# Results – Emergency Dept. Use

	Block 1		Block 2		Block 3	
Factor	Incidence-rate	<i>p</i> -value	Incidence-rate	<i>p</i> -value	Incidence-rate	<i>p</i> -value
Enabling Characteristics	Ratio		Ratio		Ratio	
Poverty			1.00 (0.01)	0.66	1.00 (0.01)	0.63
Health insurance status			0.81 (0.27)	0.54	0.54 (0.23)	0.14
Has a regular doctor			1.48 (0.60)	0.34	2.01 (1.06)	0.08
Social support			0.99 (0.06)	0.93	1.16 (0.10)	0.08
Degree of rurality			1.01 (0.10)	0.92	0.95 (0.11)	0.62
County rate of primary care physicians			0.99 (0.01)	0.38	<b>0.98 (0.01)</b>	0.04
Need						
Chronic health problems					<b>1.35 (0.18)</b>	0.03
Overall physical health					0.98 (0.02)	0.35
Overall mental health					0.98 (0.01)	0.20
Model Statistics						
Dispersion in alpha	1.77 (0.46)		1.64 (0.47)		0.94 (0.46)	
Likelihood ratio chi-square (degrees of freedom)	10.82 (10)	0.37	16.55 (16)	0.42	35.89 (19)	0.01

# Results - Summary



- Women reporting a higher incidence rate of physician visits were significantly more likely to have:
  - Health insurance
  - A regular doctor/usual source of care
  - Worse self-reported health
  
- Women reporting a lower incidence rate of physician visits were significantly more likely to be:
  - Older

# Results - Summary



- Women reporting a higher incidence rate of emergency department visits were significantly more likely to:
  - Be divorced, separated, or widowed
  - Have more chronic health problems
  
- Women reporting a lower incidence rate of emergency department visits were significantly more likely to:
  - Live in communities with higher primary care physician rates

# Conclusions

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- **Based on Andersen's model, the rural low-income women in our sample experienced inequitable access to care for both physician and emergency department visits**
  - Enabling factors like health insurance, having a usual source of care, and available primary care physicians influenced women's health care access
- Identifying a provider as one's own promotes continuity of care
- Health insurance facilitates access
- Increasing numbers of physicians in rural areas decreases least cost-effective utilization (ED)

# Conclusions

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- Additional characteristics of interest:
  - Need did drive usage
    - Those with worse physical health and more chronic conditions had higher utilization rates
  - Divorced, separated, and widowed women used emergency departments more frequently
    - A vulnerable population to further study
  - Older women had lower physician usage rates
    - In limited resource households, older women may be more likely to put health needs of children and partners before themselves (APA, 2004)



# Limitations

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- Data are not nationally representative
- Data are self-reported
- Data are cross-sectional
- Confounding variables not included in the model may have produced bias in findings

# Implications:

## Public Health Campaigns and Research

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- ❑ Target residents who do not have regular contact with a physician and/or are without insurance
- ❑ Increase residents' awareness about Medicaid and eligibility requirements and get them enrolled
- ❑ Increase number of physicians working in rural areas and trained to care for rural populations
- ❑ Develop unique health supports for divorced, separated, and widowed women
- ❑ Better understand health decision-making, including how health needs are prioritized among family members



# Acknowledgements

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