Chronic Diseases and Co-Morbidities in Older Native Americans

Kyle Muus, PhD                      Patricia Moulton, PhD
Alana Knudson, PhD                  Leander R. McDonald, PhD
Richard Ludtke, PhD

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Connecting resources and knowledge to strengthen the health of people in rural communities.

Center for Rural Health

- Established in 1980, at the University or North Dakota - Grand Forks, ND
- Focuses on access, financing, quality, and information dissemination through:
  - Education, Training, and Awareness
  - Community Development & Technical Assistance
  - Native American Health
  - Rural Health Workforce
  - Rural Health Research
- Web site: http://medicine.nodak.edu/crh
National Resource Center on Native American Aging

The only resource center in the nation focusing on American Indian, Native Hawaiian, and Alaska Native elder issues. Primary focus is health care.

- Research
- Training
- Technical Assistance

Native American Health

Steady improvement in health status in the past 60 years, yet disparities remain:

- Higher rates of alcoholism, diabetes, tuberculosis, injuries, suicide, and homicide
- Lower life expectancy

Rural AI/ANs
- Less likely to have health insurance
- Decreased access to health services

Sources: Indian Health Service, 2001; Zuckerman et al., 2004; Baldwin et al., 2004
**Funding and Purpose**

- **Funding:** Office of Rural Health Policy; Administration on Aging
- **Purpose:**
  - Determine the most common chronic diseases and co-morbidities among Native American elders
  - Identify factors which differentiate Native American elders with and without chronic diseases
Methods

- Voluntary participation of tribes
- Systematic random sampling of tribal lists
- Questionnaire administered via face-to-face interviews
- Native Americans aged 55+
- N=5,437

Questionnaire Sections

- General health status
- Chronic diseases
- Vision, dental, and hearing
- Activities of Daily Living (ADLs)
- Instrumental Activities of Daily Living (IADLs)
- Weight, diet, and exercise
- Tobacco and alcohol use
- Social supports
Age

- 55-64: 42%
- 65-74: 37%
- 75-84: 16%
- 85+: 5%

N=5,437

Gender

- Male: 40%
- Female: 60%

N=5,437
Highest Education Level

- Never Attended: 3%
- Elementary: 22%
- College: 23%
- High School: 52%

N=5,437

Personal Annual Income

- $5-10K: 33%
- $10-20K: 25%
- < $5K: 23%
- $20K+: 19%

N=5,437
Exercise/Activities Among Native American Elders

- Gardening: 39%
- Walk: 36%
- Calisthenics: 16%
- Bike: 7.8%
- Pow-wow Dancing: 6.5%
- Run: 3.8%
- Aerobics: 3%
- Swim: 2.7%

*Percent that partake in activity at least once a month
*N=5,437

Health Risk Behaviors Among Native American Elders

- Tobacco User: 13.7% Yes, 86.3% No
- Binge Drinker: 21.7% Yes, 68.9% No
Number of ADL Limitations Among Native American Elders

Chronic Disease Prevalence Among Native American Elders

*Has a doctor ever told you have the disease
Number of Chronic Diseases Among Native American Elders

Analytic Model

Demographics

Geography

Chronic Disease

Health Status & Behavior

Health Care Access & Utilization
HYPERTENSION

Definition: persistently high arterial blood pressure

- Affects 43 million adults; “the Silent Killer”
- Can lead to stroke, heart attack, heart failure and/or kidney failure

Source: National Heart, Lung, and Blood Institute [NHLBI], 2002

Number of Co-Morbidities Among Native American Elders with Hypertension (N=2,826)
**Logistic Regression Results**

*Hypertension among Native Elders was most closely associated with:*

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Behavioral</th>
<th>Health Status</th>
<th>Health Service Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower income and education</td>
<td>Not a tobacco user</td>
<td>Diabetes</td>
<td>Recent hospitalization</td>
</tr>
<tr>
<td>Raised off-reservation</td>
<td>Obesity</td>
<td>Congestive heart failure</td>
<td>Recent vision screening</td>
</tr>
<tr>
<td>Living alone</td>
<td></td>
<td>Stroke</td>
<td></td>
</tr>
<tr>
<td>Rural residence</td>
<td></td>
<td>Arthritis</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cataracts</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Not having lung cancer</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Functional limitation</td>
<td></td>
</tr>
</tbody>
</table>

**ARTHRITIS**

Definition: chronic pain and/or swelling of the joints

- More than 100 different diseases
- 70 million Americans (1 in 3 adults) affected by arthritis or chronic joint symptoms
- Leading cause of disability in the U.S.
- Annually, arthritis is associated with:
  - 44,000,000 clinic visits
  - 744,000 hospitalizations
  - 4,000,000 days of hospital care (CDC, 2004)
Number of Co-Morbidities Among Native American Elders with Arthritis (N=2,664)

Logistic Regression Results

Arthritis among Native Elders was most closely associated with:

Demographics
- Females
- Lower income & education
- Raised off-reservation
- Living alone

Health Status
- Asthma
- Cataracts
- Hypertension
- Functional limitation

Behavioral
- Tobacco user
- Obesity
- Gardening
**DIABETES**

Definition: high levels of blood glucose resulting from defects in insulin production, insulin action, or both

- Afflicts 18 million Americans
- Sixth-leading cause of death in U.S.
- Afflicts 1 in 5 persons aged 65+
- 11% of annual U.S. health care expenditures
- Native Americans – 2-3 more likely than whites to have diabetes (CDC, 2004)

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**Number of Co-Morbidities Among Native American Elders with Diabetes (N=2,178)**

![Bar chart showing the number of co-morbidities among Native American elders with diabetes.](chart)
**Logistic Regression Results**

*Diabetes among Native Elders was most closely associated with:*

**Demographics**
- Younger age
- Lower income & education
- Raised on reservation
- Living with other persons

**Behavioral**
- Not a tobacco user
- Not a binge drinker
- Obesity
- No walking or gardening
- Pow-wow dancing

**Health Status**
- Hypertension
- Congestive heart failure
- Cataracts
- Not having asthma
- Functional limitation

**Health Service Use**
- Recent hospitalization
- Recent vision & dental screenings

**General Policy Recommendations**

- Increase prevention efforts, including health promotion, screening and wellness programs

- Increase disease management programs, including access to services and a focus on preventing co-morbidity

- Increase availability of home/community-based long term care services in rural areas

- Increase local availability of health care and other services in rural areas

- Increase Native elders’ access to health insurance programs, such as Medicare
Hypertension Control and Prevention

- **Increase public awareness** of hypertension as an important public health issue

- **Prevention**
  - Regular exercise
  - Proper nutrition
  - Normal body weight
  - Reduce consumption of alcohol, sodium, & saturated fat
  - Adequate intake of potassium

- **Promote early diagnosis and appropriate health care management**

Source: NHLBI, 2002

Arthritis Control and Prevention

- **Increase public awareness** of arthritis as the leading cause of disability and an important public health issue

- Maintain good bone health through **regular exercise and proper nutrition** (calcium and vitamin D)

- **Promote early diagnosis and appropriate health care management**

- Maintain an **appropriate body weight** and **avoid joint injuries** to reduce the risk of developing arthritis and decrease disease progression

- Ensure that elders with arthritis receive physical, mental, and emotional **support**
Diabetes Control and Prevention

- Increase public awareness of diabetes as an important public health issue

- Regular exercise, proper nutrition, and appropriate body weight

- Promote early diagnosis and appropriate health care management

- Prevent complications: eye disease, kidney disease, amputations, cardiovascular disease, pregnancy effects, flu/pneumonia (CDC, 2004)

- Ensure that elders with diabetes receive physical, mental, and emotional support

References


- Indian Health Service (IHS). Facts on Indian Health Disparities. 2001.


For more information contact:

Center for Rural Health
School of Medicine and Health Sciences
Grand Forks, ND 58202-9037

Tel: (701) 777-3848
Fax: (701) 777-6779

http://medicine.nodak.edu/crh