Medication Adherence Among Filipinos and Other Asian Americans

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Agenda

• Background
• Health disparities in Hawaii
• Review study of medication adherence among Filipino Americans related to cardiovascular disease
• Discussion
Race and Ethnicity in Hawaii

- Caucasian: 23%
- Japanese: 16%
- Chinese: 21%
- Other/mixed: 4%
- Filipino: 13%
- Native Hawaiian: 23%
Filipino Immigration to Hawaii

• To meet demand for labor, Hawaiian Sugar Planters Association (HSPA) went to the Philippines and set up recruitment centers (in Vigan, Ilocos, Sur, and Cebu) to recruit sugar workers or sakadas.

• In 1906 15 Filipino laborers, all Tagalogs, came to Hawaii. From 1911 to 1920, 3,000 workers arrived annually.

• In the 1930s, Filipinos had replaced Japanese as largest group of plantation workers:
  • HSPA paid Filipinos the lowest wage
  • Philippines was a U.S. colony - not covered by exclusion laws barring the importation of "Orientals," mainly Chinese and Japanese.
Filipino Immigration to Hawaii

Group of strikers being examined by Dr. Wayson at Filipino Strike Camp, Kapaa, Kauai.
Reasons for Filipino Migration to Hawaii

• Filipino migrant workers came to Hawaii because they perceived the islands as glória (glory), a paradise of happiness and prosperity.

• Until the 1940s most of the Filipino sakadas believed that they were only temporary residents of Hawaii.

• Although initial migrants were Tagalogs, succeeding ones were almost entirely Ilocanos.

• Due to the harsh living conditions, Ilocanos have been migrating since the 19th century.

• In the twentieth century, Hawaii and California were the most appealing destinations in the US for Ilocanos.
Prevalence of Cardiovascular Disease and Its Risk Factors in Hawaii

- Eligible population was selected from members enrolled with a largest insurer in Hawai‘i.
- Data on ethnicity were available from annual membership surveys conducted annually between 2002 and 2009.
- Chronic diseases were identified from claims data that were available from 1999 through 2009 based on algorithms that included diagnostic codes and pharmaceutical utilization.
- The days enrolled during an age for the entire eligible population was taken as the denominator.
- Numerators were calculated as the days enrolled while having a condition.
Prevalence of Hyperlipidemia Related to Age and Ethnicity
<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chinese</td>
<td>79.8</td>
<td>84.6</td>
</tr>
<tr>
<td>Filipino</td>
<td>77.1</td>
<td>78.2</td>
</tr>
<tr>
<td>Japanese</td>
<td>78.6</td>
<td>84.8</td>
</tr>
<tr>
<td>Native Hawaiian</td>
<td>65.2</td>
<td>72.3</td>
</tr>
<tr>
<td>White</td>
<td>74.8</td>
<td>82.5</td>
</tr>
</tbody>
</table>

Source: Hawaii Department of Health; Office of Health Status Monitoring. Includes ICD-10 codes 100-178.
Cardiovascular Health of Filipinos in Hawaii

- Filipinos had the highest rate of hypertension, similar to Native Hawaiians.
- Among highest rates of hyperlipidemia.
- Second to Native Hawaiians for diabetes.
- Age at death from cardiovascular disease was younger than Japanese and Chinese for men and younger than all groups except Native Hawaiians for women.
To what extent are health disparities related to differences in medication adherence?
Medication Non-Adherence

Definition: Failing to take medication as directed

- Rely upon medications to treat diseases and conditions, prevent hospitalization, and improve quality of life.

- Numerous studies have shown that medicines improve clinical outcomes and reduce illness, disability, and death.

- Many people do not realize the full potential benefits of their medications.
Evidence From the Literature

- It is estimated that nonadherence costs the US health care system $100 billion per year (Vermiere et al., 2001).

- In addition, approximately 125,000 deaths occur annually in the US due to nonadherence with cardiovascular medications (McCarthy, 1998).

- For a number of chronic medical conditions - diabetes, hypertension, hypercholesterolemia, and congestive heart failure - higher rates of medication adherence were associated with lower rates of hospitalization (Figure 1), and a reduction in total medical costs (Sokol et al., 2005).

- 39% of patients who do not fill medications due to cost do not talk to their physicians about it (Wilson et al., 2007)
Evidence (continued)

• More than 10% of older adult hospital admissions may be due to nonadherence with medication regimens (Vermiere et al., 2001).

• In one study, one-third of older persons admitted to the hospital had a history of nonadherence (Col et al., 1990).

• Nearly one-fourth of nursing home admissions may be due to older persons' inability to self-administer medications (Strandberg, 1984).

• Problems with medication adherence were cited as a contributing factor in more than 20% of cases of preventable adverse drug events among older persons in the ambulatory setting (Gurwitz et al., 2003).
Methodology

• Data include enrollment information, medical and pharmacy claims

• The study sample was drawn from members of a managed care organization covering approximately 650,000 members.

• Study eligibility required participants:
  ✓ Diagnosis of hypertension
  ✓ Have filled at least 1 antihypertensive medication prescription with at least a 15-day supply between January 1999 and June 2004.

• We did not require continuous enrollment; instead, we excluded days without coverage from the compliance calculation.
Medication Adherence

- Can be measured in different ways
- Medication possession ratio is a common way to measure compliance using administrative claims data
- What percent of the time did the patient have the medication in their possession?
- For chronic conditions, a medication possession ratio (MPR) of 80% is often considered compliant
Medication Refills

January 1
• ACE Inhibitor
• 90 days

May 15
• ACE Inhibitor
• 30 days

July 30
• ACE Inhibitor
• 90 days

Nov 1
• ACE Inhibitor
• 60 days

Total possession = 90+30+90+60=270 days
MPR=270/365=74%
Non compliant
Complicating factors: Use of multiple drugs

Do we add all the days supply together?
Gaps in Possession

March 1
Dluretic
60 days

May 1 – May 15

June 15 - July 1

July 1
Dluretic
60 days

January 1
ACE Inhibitor 90 days

May 15
ACE Inhibitor 30 days

July 30
ACE Inhibitor 90 days

Medication Possession Ratio = (365-gap days)/365
Study Population

• A total of 114,232 patients met study inclusion criteria.

• The mean age of the study sample was 64 years (SD= 14 years; range, 18 to 107 years).

• 50% were female, and 25% had high morbidity

• 70% of all patients were enrolled in the PPO, 28% in the HMO, and 2% in the Medicare cost contract plan.

• Of the 37 697 patients for whom ethnicity data were available, 42% were Japanese, 14% Hawaiian, 13% Caucasian, 12% Filipino, 8% Chinese, 4% Mixed, and 5% Other.
<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Odds Ratio</th>
<th>*p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Japanese</td>
<td>1.21</td>
<td>*</td>
</tr>
<tr>
<td>Chinese</td>
<td>0.98</td>
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<tr>
<td>Native Hawaiian</td>
<td>0.87</td>
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<tr>
<td>Filipino</td>
<td>0.74</td>
<td>*</td>
</tr>
<tr>
<td>Mixed</td>
<td>0.96</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>0.89</td>
<td>*</td>
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</tbody>
</table>

Limitations

• Data from a single health plan in Hawaii
• Not know if patients actually taking the medication, only whether they filled prescriptions
• Not include free samples given to patients
Oral Diabetes Medications

• Similar results were found when examining ethnic differences in adherence to oral diabetes medications.

• Relative to white patients, the odds ratio of adherence was highest for Japanese patients (OR 1.20; 95% CI, 1.0–1.30) and lowest for Filipino patients (OR 0.78; 95% CI, 0.68–0.90).
Discussion

• Further research is needed to better understand the underlying factors that lead to low medication adherence among Filipinos in Hawaii

• Targeted interventions may be needed to improve adherence and outcomes of care
Questions?