A STUDY OF THE HEALTH STATUS OF THE ARMENIAN IMMIGRANT POPULATION IN UNITED STATES

By
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Purpose and Problem Statement

• **Purpose**: To determine the health status of the Armenian immigrant population (AIP) in The U.S.

• **Problem Statement**: Very little is known about the health status and the health care practices of the AIP in US.
Significance of the Study

- According to the US census report (2010), there are over 40 million immigrants whose primary language is not English. This constitutes 13% of the US population.

- There are over 300,000 Armenians in Southern California, of which 179,279 are in Los Angeles County (LA Times, April 24, 2013). They are representative of the Armenians who live in diaspora.

- Since 1990, immigration from the former Soviet Union has increased by about 406,000, and is expected to increase by 50,000 per year (Duncan & Simon 1996). In this study 90 (20.8% of the sampled) was from Armenia.

- Immigrants from Soviet Union: They are known for heavy cigarette and alcohol use, poor dietary intake, poor physical fitness, crowded living conditions, environmental pollution and poor occupational safety were common and have contributed to the health problems of this population.

- Literature cites the incidences of tuberculosis, intestinal parasites, chronic hepatitis B infections, lack of immunizations and depression to be high in these populations (Bhattacharya, 2011; Lassetter & Callister, 2009).
Significance of the Study, cont’d.

• Currently, very little is known about the AIP. As the influx of immigrants continues, the consequences of these health conditions will present a challenge to the health services of the host country.

• Therefore, an evaluation of the health status and the health related practices of the immigrant population is warranted to target areas requiring intervention in order to protect the host country and to improve the health of the immigrants.

• As with any immigrant group, understanding of the potential health conditions and cultural values can facilitate appropriate medical care. The International Center for Migration and Health in Geneva, under the auspices of the World Health Organization (2013) has identified in its “Health for All” strategies, the identification of the health indicators among migrants and immigrants, to improve the health status of immigrant families.

• The literature (Bhattarcharya, 2013) recommends that to better understand the health practices and health status of any cultural group, first it is important to look at the role of culture and nationality as factors influencing the health status of the immigrant population.
Factors Influencing Health Status and Health Behaviors

• Nationality, culture and ethnic identity
• Age at the time of immigration
• Length of time in the host country
• Language competency
• Social support
• Locus of control
Nationality and Culture as Influencing Factors

• Nationality and culture define health and illness.
• What they consider worthy of treating or consulting a caregiver.
• What kind of caregiver is appropriate.
• What a person believes to be the cause of the illness.
• How patients like to be treated, addressed and greeted.
• Illness, as opposed to disease, is an individual’s personal, interpersonal, cultural response to the disease or discomfort.
• Culture influences the perception, labeling, explanation and valuation of the illness experience and processes that are deeply embedded in complex family, social and cultural factors (Bhattacharya, 2008, 2013).
Characteristics of Armenian Immigrants in USA as a National and Cultural Group

• Their ancestors date back to earlier than 5th Century AD.
• Religion is Christianity. Majority are Orthodox. Protestants and Catholics are minority.
• Immigrants dating back to 1915 are the remnants of those who fled the Turkish genocide of Armenians.
• The 1970 and thereafter immigrants are the refugees and the immigrants from Armenia, Russia, Middle East, Greece and Iran.
• The family unit is very important, including the extended family.
• Education is highly valued. It provides the means for upward social mobility.
• They value Western medicine and believe in the germ theory as cause of disease.
Characteristics of Armenians (Cont’d)

• Level of education is a major contributing variable in seeking preventive care, otherwise, medical care is sought mostly when they are sick.

• Uneducated Armenian immigrants expect the medical professional person to make the health-related decision, because the doctor is perceived to be very knowledgeable and respected, also they are being paid for their services.

• They prefer an older male physician to younger or women physician, because they perceive the former to be more experienced and credentialed.

• Too many diagnostic tests are interpreted by the patient as incompetence on the part of the physician, or that they are seriously ill (Lipson & Meleis, 1985).

• Psychological care is delegated to the family.

• They expect to receive care in an unhurried manner and be referred to as Mr. or Mrs. etc., and not by their first name or number.

• Trust in their health care provider is essential. It determines patient’s level of cooperation and compliance with the medical regimens (Lipson & Meleis, 1985).
Culture: As an Influencing Factor of Health status

• Definition of culture: “A shared system of values, beliefs, traditions, behaviors, verbal and non-verbal patterns of communication that hold a group of people together and distinguishes them from other groups” (Salimbene, 1999, p.26).

• Cultural competence of the caregiver influences the health status of the immigrants according to the PRECEDE model. It includes the skills and the abilities of a health care provider that demonstrates the following behaviors and attitudes:

  a. An awareness, sensitivity and tolerance to differences in culture and language.

  b. An ability not to make judgments about a patient’s beliefs, behaviors, needs expectations because they are from a different culture or nationality.

  c. Knowledge about cultures that enables the caregiver to anticipate possible barriers to access care or comply with care.

  d. Knowledge and skills to provide linguistically and culturally appropriate patient advice and education.
Consequences of Culturally Incompetent Care

Absence of culturally competent care leads to:
• ↑ tendency for misdiagnosis of symptoms
• ↑ non-compliance with medical regiments
• ↑ incidences of patients dropping out of treatment.

(Salimbene, 1999; Leonard & Plotnikoff, 2000)
Ethnic Identity as Health Status Influencing Factor

• Too much ethnic identity is not good either.
• Strong ethnic identity →↑number of physical symptoms
  ↓positive morale
  ↓perceived health status

(Meleis & Lipson & Paul, 1992)
Age as an Influencing Factor of Health Status and Health Behaviors

Immigrants who came to USA in their youth

• Learned English
• Joined the workforce
• Were eligible for Social Security and Medicare
• Became US Citizens
Immigrants who came to USA after the age of 60

• Probably never sought employment
• Were less likely to qualify for Social Security
• Were less likely to interact with American born population to learn English.
• Elderly were most likely to be parents of US citizens.
• In this study, 203 (47.6%) of the subjects were 60 years of age and older.
• The older the immigrants the more the incidence of illnesses
Length of Time in the Host Country as a Influencing Factor of Health Status and Health Behaviors

• Successful adaptation even under the best circumstances (financial security, good language skills, stable community, job or school conditions) takes about 3-5 years (Lipton & Meleis, 1985).

• Immigrant Adaptation has two phases:

1. Escalation Phase: first 27 months is characterized by increased distress. Peak is at 27 month.

2. Reduction Phase: Between 28-44 months. There is decline in stress and then reaches normal level.
Length of Time in the Host Country, cont’d.

Factors that determine adaptation:

1. Establishment of a sense of identity with community.

2. Development of social network that compares with the country of origin.

3. Changes in values and identity. It is in these higher order needs during the first months after arrival that immigrants experience problems of anxiety, depression, and intense homesickness. Each unmet need leads to lowered health status and decreases total well-being.

4. Immigrants who undergo rapid physical and cultural transition experience increased incidences of hypertension, infectious and chronic diseases, somatic complaints and difficulty in adaptation and cultural exhaustion (Kasl & Berkman, 1983; Lipman & Meleis, 1985).
Language Competency as an Influencing Factor on Health Status and Health Behavior

Lack of English Language competency is associated with the following:

- Increased difficulty in accessing health care.
- Increased incidence of misdiagnosis by Western health care providers (Good et al, 1986).
- In the areas of mental health, minority patients have been misdiagnosed with regard to depression and schizophrenia (Delgado, 1955; Reiff et al, 1999).
- Immigrants and their children are at high risk for serious infectious diseases (Guendelmen et al, 1995).
- Patients interpret their care as unkind, rushed and unsupportive.
Social Support and Coping with Stress of Immigration as Factors Influencing Health Status and Health Behaviors

• Human beings are social and dependent on others in their environment to supply them with reflected appraisals of stress producing situations (Aguilera and Messick, 1986).

• Interpersonal relationships play a role in determining stress perception (Fleming et al. 1985).

• People derive emotional support from others (Aguilera & Messick, 1986; Fleming et al. 1985).

• Social support is stress buffering. That is, high levels of social support aids people in coping with stress (Fleming et al., 1985).
Social Support as Influencing Factor, cont’d.

• Studies have shown that:


• ↓Social support → ↑Psychological distress, and ↑depression. In extreme cases → ↑suicide ideation (during 2nd and 3rd year) (Ponizovsky & Ritsner, 1999).

• Suicide ideation were strongest with immigrants who were:
  1. Younger
  2. Low level of social support
  3. Being from the former Soviet Union or Baltic countries
  4. Living without a spouse
  5. Being an MD or a teacher

(Ponizovsky & Ritsner, 1999).
Social support as Influencing Factor, cont’d.

• Strongest factors were psychological distress, symptoms associated with depression, hostility, and paranoid ideation (Ponizovsky & Ritsner, 1999).

• Incidence of depression was associated with adolescents and women refugees who felt social isolation and were in poverty (Browner & Elhanan, 1997).
Theoretical Framework

• The PRECEDE (Predisposing, Reinforcing, and Enabling Causes in Educational Diagnosis and Evaluation) Model (Green et al, 1980) was used as a conceptual framework to develop the assessment tool to assess the health status of the AIP. (See Figure 1)

• According to the PRECEDE model, health, or lack thereof, are determined by selected behavioral factors. Health promotion, disease prevention behaviors such as proper eating habits to control hypertension, diabetes, obesity, etc. are examples of behavior patterns that determine health.
Figure 1: The PRECEDE (Predisposing, Reinforcing, and Enabling Causes in Educational Diagnosis and Evaluation) Model

PRECEDE Model, cont’d.

• Behavioral causes of health problems are contextual in nature and they fall into three categories: Predisposing, enabling and reinforcing.

• **Predisposing** factors consist of: (1) The demographic characteristics of the person, e.g. age, gender, nationality, socio-economic status, home conditions, employment etc.; (2) Knowledge, attitudes, perceptions, educational level, locus of control, health belief system.

• **Enabling** factors are those variables that deal with availability, adequacy, accessibility and skills to access preventive health resources, such as health insurance, social support and communication system, willingness of the person to take action such as, compliance with diabetic and/or hypertension regiments.

• **Reinforcing** factors deal with the attitudes and behaviors of the health care givers and helpers within the person’s social support system. That is, they are the interpersonal and inter-professional support that encourages health promotion behaviors.
PRECEDE Model, cont’d.

• The PRECEDE model considers the nursing or the medical intervention to be the independent variable.$^1$

• Evaluation is the last component of the PRECEDE model. It has three parts: Evaluation of the process, impact and outcome factors.

  1) The process factors$^2$: It deals with the immigrant taking responsibility for his/her health promoting behaviors, e.g. BSE receiving immunizations, seeking timely preventive services to treat acute and chronic illnesses.

  2) The impacting factors refer to the achievement of desired behavioral changes. Since there was no intervention in this study, the impacting factor does not apply.

  3) The outcome factor is the determination of the health status of the AIP.
The main outcome measures were as follows:

1. The blood pressure of the immigrants to measure the incidence of hypertension.
2. The incidence of acute (e.g. Influenza) and chronic illnesses (e.g., diabetes).
3. Compliance with diabetic and/or hypertension regiments
4. Level of depression
5. Incidence of smoking
6. The health belief system in terms of locus of control
7. The degree of social support
The PRECEDE Model is not all encompassing to measure every aspect of the AIP health status. It provides a useful framework for identifying variables for which data are available or can be collected to assess the health status of the AIP, and on those for which theory-based or research-based assumptions can be made.

It is recommended by Green and Kreuter (DATE) that the PRECEDE model can be used to answer different components of the model, health promotion behaviors and the health status of selected populations.
Methodology

• Research Design
• Descriptive
• Variables being investigated were:
  1. Blood pressure to assess the incidence of hypertension.
  2. Chronic Illness- Type II diabetes, obesity (weight)
  3. Incidence of acute illnesses (e.g. Flu, pneumonia)
  4. Compliance with diabetic and hypertension regiments
Methodology, con’t.

• Variables, con’t:
  5. Incidence of smoking
  6. Level of depression
  7. Health belief/locus of control
  8. Degree of social support
  9. Demographic data: Age, gender, length of time in USA, languages spoken, financial and living home conditions, transportation, health insurance, employment, etc.
Subjects

• Sample selection criteria and characteristics:
• Armenian immigrant to USA
• Ability to read, write and speak Armenian or English
• N= 432
• Gender: Males =204, Females = 228
• Age : mean age =56; Range: 19-92 years of age.
• (See Table 1)
# Table 1: Demographic Characteristics

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Measures

Three measures were used:

1. **Health Status Questionnaire**
   
   Purpose: To measure the health status of the AIP with respect to the predisposing, and the enabling factors, because they were most relevant for this study. It consisted of 109 questions.

2. **Locus of Control Tool** (Rotter, 1990) was used to measure the immigrants’ attitude toward taking responsibility for their own health behaviors. This item is part of Enabling Factors according to PRECEDE model.

3. **Beck Depression Scale**
Health status Questionnaire: Data related to *Predisposing factors*

- **Demographic data:** height, weight, blood pressure, blood glucose level, cholesterol level, medications taken, vision, dental and nutritional status, number of acute illnesses within the last six months, incidences of major chronic illnesses, such as respiratory ailments, diabetes, arthritis, hypertensions and heart conditions; smoking status, living conditions, smoking behaviors.
Health status Questionnaire:
Data related to Enabling factors:

• Having annual check ups.
• Performing monthly breast self-examination (for women) and testicular exam (for men).
• Health insurance.
• Compliance with diabetic and hypertension regiments.
• Access to transportation.
• Degree of social support available.
• Taking responsibility for their own action. This item was measured by Rotter, (1966) Locus of Control tool.
Social Support

• Part of the Health Status Questionnaire measured degree of social support an immigrant has.

• It was measured via six questions:
  ▪ four of which ranged from 1 to 5, with 1 indicating no support to 5 indicating high support.
  ▪ One question ranged from 1 to 4 and the other from 1 to 6, with the higher scores indicating high social support.
  ▪ The total social support score could range from 6 to 30.
Compliance with Diabetic Regimen

• The Health Status Questionnaire had seven questions that assessed compliance with diabetes regimens.
• Each question ranged from 1, indicating full compliance, to 3 indicating no compliance.
• The total score on diabetic compliance could range from 7 to 21.
Compliance with Hypertension Regimens

• The Health Status Questionnaire had six questions that tapped compliance with the hypertension compliance.

• Each question ranged from 1 indicting full compliance to 3 indicating no compliance.

• The total score on hypertension compliance could range from 6 to 18.
Locus of Control (LOC) Tool (Rotter, 1990)

• Rotter’s (1990) Internal-External LOC tool consists of 29 pairs of items that assess whether an individual is internal or external on LOC scale, by asking the person to respond to certain important events occurring in society or in their lives.

• The respondent had to select one of the statements in the pairs of questions.

• Of the 29 pairs, 23 measures LOC and the other six were fillers.

• Scores on LOC range from 0 (most internal) to 23 (most external).
Beck’s Depression Scale

• Beck’s Depression scale consists of 30 questions that tap how a person felt over the past week prior to answering the questionnaire.

• Each question is answered by a yes or a no answer. For example, “Do you frequently feel like crying?”

• Scoring:
  ▪ 0-10 normal
  ▪ 11-20 moderate depression
  ▪ 21-30 severe
Psychometric Properties of the Tools

The Health Status Questionnaire:

• Content validity was established through the literature (Berkman & Syme, 2001; Friis, 1999; Green & Kreuter, 2005; Lessetter & Callister, 2009), and a panel of three Ph.D.-prepared judges rated the tool. The percent agreement amongst the panel was 98%.

• Reliability was obtained through test-retest method. The percent agreement between test-retest was 95%. 
Rotter’s (1954, 1990) Locus of Control Measure and Beck’s Depression Scale (Yesavage et al, 1983) have been used in numerous studies and their validity and reliability are well established in the literature.

• Rotter’s LOC tool showed convergent and discriminant validity ($z=3.39$, $p<.05$) and internal test–retest reliability ($r=.657$, $p<.05$) (Beretvas et al, 2007).

• Beck’s Depression scale showed an internal consistency ranging from .73 to .92 with a mean of .86. (Beck et al, 1988)
Procedure

• Permission was obtained from the University’s IRB and with the subject’s consent.

• Subjects were obtained from:
  - Armenian Health fairs
  - Social clubs
  - Private medical clinics
  - Professional groups
  - Churches
  - Personal acquaintances

• The researcher or her research assistant (RA) administered the questionnaire.
  • The subjects could answer the questionnaire themselves.
  • If they needed help, the RA/researcher wrote their answers on the questionnaire.

• It took about 20 minutes to answer the questionnaire.
Data Analysis

• Data analysis was done using SPSS™ version 17.
• Descriptive statistics were used to describe the sample.
• t-test for independent means, analysis of variance, Chi Square tests, and Pearson Product Moment correlations \( r \) were done as appropriate, to determine:
  a. The health status of the AIP by examining the relationship between the predisposing and enabling factors,
  b. The relationships between the different demographic variables, social support, locus of control and depression variables.
Results

Due to the enormity (109 data items) of the data, only the following major findings are going to be presented in this study:

(1) Findings related to selected **Predisposing factors**:  
- weight (obesity)  
- smoking behaviors  
- blood pressure  
- level of depression  
- incidence of acute illnesses  
- cholesterol level  
- incidence of chronic illnesses (hypertension and type II diabetes)
Results, con’t

(2) Findings related to **Enabling factors**:

• Locus of control.

• Taking responsibility for performing monthly self examinations for breast (women) or prostate (for men).

• Compliance with diabetic and hypertension regimens.

• Having health insurance.

• Degree of social support.
Predisposing Factor Findings: Obesity

- Average Wt. for men = 175 lbs. (Ht.=5’ 6.6”)
- Average Wt. for women = 154 lbs (Ht.=5.2.5”)

- Participants in this study were significantly heavier (t=19.3, p<.0001) than the weights recommended by the Metropolitan Life Insurance Company (MLIC).
- This was true for both men by 26lbs (t=13.98,p<.0001 and for women by 19.6lbs (t=14.51, p<001). (See Table 2)
Table 2: Comparison of means between Armenian immigrants’ weights and Metropolitan Life Insurance weight recommendations

<table>
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<tr>
<th>Group</th>
<th>MetLife&lt;sup&gt;a&lt;/sup&gt; Means</th>
<th>Sample Weights Mean (S.D)</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>139.5</td>
<td>164 (30.5)</td>
<td>19.3</td>
<td>.000</td>
</tr>
<tr>
<td>Males</td>
<td>148</td>
<td>175 (27)</td>
<td>13.98</td>
<td>.000</td>
</tr>
<tr>
<td>Females</td>
<td>131</td>
<td>154 (30)</td>
<td>14.57</td>
<td>.000</td>
</tr>
</tbody>
</table>

<sup>a</sup>MetLife Metropolitan Life
Blood Pressure & Cholesterol Levels

• Compared to a BP of 150 systolic and 80 diastolic as the beginning of mild hypertension, participants on the average had significantly lower systolic BP 129 (t= -20.5, p< .0001) and diastolic of 78 (t= -3.56, p< .0001). There were no gender differences in BP.

• When Cholesterol levels were compared against the age appropriate norms, there were no significant differences ($X^2 = 2.89, p< .23$),

• 83% of participants had levels within normal limits,
• 7.8% were at medium risk, and
• 9.3% were at high risk for hyperlipidemia.
# Predisposing Factor Findings:
**Blood Pressure (Hypertension) and Cholesterol**

Table 3: Comparison of means between borderline norms and the sample on systolic and diastolic blood pressures

<table>
<thead>
<tr>
<th>Blood pressure</th>
<th>Groups</th>
<th>Norm</th>
<th>Means (S.D)</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systolic</td>
<td>Total</td>
<td>&lt;150</td>
<td>129 (19)</td>
<td>-20.5</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Males</td>
<td></td>
<td>129 (18)</td>
<td>-15.13</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td></td>
<td>129 (20)</td>
<td>-14.01</td>
<td>.000</td>
</tr>
<tr>
<td>Diastolic</td>
<td>Total</td>
<td>&lt;80</td>
<td>77.94 (10.4)</td>
<td>-3.56</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Males</td>
<td></td>
<td>79.53 (10.9)</td>
<td>-5.38</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td></td>
<td>76.48 (9.76)</td>
<td>-4.69</td>
<td>.000</td>
</tr>
</tbody>
</table>
# Cholesterol Levels

Table 4: Frequencies and percent distribution for Armenian immigrant population regarding their cholesterol risk levels

<table>
<thead>
<tr>
<th>Age</th>
<th>Chol&lt;sup&gt;a&lt;/sup&gt; Norms</th>
<th>Normal Risk</th>
<th>Medium Risk</th>
<th>High Risk</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>(%)</td>
<td>N</td>
<td>(%)</td>
<td>N</td>
</tr>
<tr>
<td>20-29</td>
<td>&lt;199/dl</td>
<td>.5 (83.3)</td>
<td>0</td>
<td>1 (16.7)</td>
<td>6 (100)</td>
</tr>
<tr>
<td>30-39</td>
<td>&lt;219/dl</td>
<td>19 (90.5)</td>
<td>1 (4.8)</td>
<td>1 (4.8)</td>
<td>21 (100)</td>
</tr>
<tr>
<td>40+</td>
<td>&lt;239/dl</td>
<td>209 (82.3)</td>
<td>21 (8.3)</td>
<td>24 (9.4)</td>
<td>254 (100)</td>
</tr>
<tr>
<td>Total</td>
<td>233 (82.9)</td>
<td>22 (7.8)</td>
<td>26 (9.3)</td>
<td>281 (100)</td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup> Chol=Cholesterol
Incidence of Acute Illnesses

• There were 15 categories of acute illnesses that the participants experienced within the past six months. For the group as a whole:
  1. The number one acute illness was headaches (N=107, 45.5%)
  2. Followed by backaches/muscular pain at (N=179, 41.2%)
  3. Colds/flu in third place (N=173, 40%)

• The same three illnesses were in the top 3 for both males and females but the order was different

• Males: colds/flu, backaches and headaches

• Females : Headaches, backaches, and flu/colds.

• Females experiences higher acute illnesses in all categories than the males.
# Incidences of Acute Illnesses

Table 5: Frequency and Percent Distribution of Acute Illnesses

<table>
<thead>
<tr>
<th>Acute Illnesses</th>
<th>Whole Group</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N (%)</td>
<td>N (%)</td>
<td>N (%)</td>
</tr>
<tr>
<td>Flu/Colds</td>
<td>173 (40.0)</td>
<td>73 (35.9)</td>
<td>100 (43.9)</td>
</tr>
<tr>
<td>Sore throat</td>
<td>128 (29.6)</td>
<td>47 (23.0)</td>
<td>81 (35.5)</td>
</tr>
<tr>
<td>Rash/Skin Conditions</td>
<td>38 (8.8)</td>
<td>13 (6.4)</td>
<td>2 (11.0)</td>
</tr>
<tr>
<td>Bone Fractures</td>
<td>17 (4.0)</td>
<td>4 (2.0)</td>
<td>13 (5.7)</td>
</tr>
<tr>
<td>Fever</td>
<td>66 (15.2)</td>
<td>22 (10.8)</td>
<td>44 (19.2)</td>
</tr>
<tr>
<td>Accidents</td>
<td>20 (4.5)</td>
<td>8 (3.9)</td>
<td>12 (5.2)</td>
</tr>
<tr>
<td>Vomiting</td>
<td>36 (8.3)</td>
<td>11 (5.4)</td>
<td>25 (11.0)</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>74 (17.1)</td>
<td>38 (18.7)</td>
<td>36 (15.8)</td>
</tr>
<tr>
<td>Headaches</td>
<td>197 (45.5)</td>
<td>68 (33.3)</td>
<td>129 (56.6)</td>
</tr>
<tr>
<td>Falls</td>
<td>11 (2.6)</td>
<td>2 (1.0)</td>
<td>9 (4.0)</td>
</tr>
<tr>
<td>Shortness of Breath</td>
<td>52 (12.0)</td>
<td>17 (8.4)</td>
<td>35 (15.4)</td>
</tr>
<tr>
<td>Chest/Heart Pain</td>
<td>39 (9.0)</td>
<td>5 (2.5)</td>
<td>29 (12.7)</td>
</tr>
<tr>
<td>Abdominal/Stomach Pain</td>
<td>81 (18.9)</td>
<td>24 (11.9)</td>
<td>57 (25.0)</td>
</tr>
<tr>
<td>Bacheache/Musculo-skeletal Pain</td>
<td>179 (41.2)</td>
<td>68 (33.4)</td>
<td>111 (48.7)</td>
</tr>
<tr>
<td>Dizziness</td>
<td>85 (19.6)</td>
<td>26 (12.8)</td>
<td>59 (25.8)</td>
</tr>
</tbody>
</table>
Incidence of Chronic Illnesses

Eight categories of chronic illnesses were rank ordered from the highest to least:

1. Arthritis 33.3% (N=144)
2. Hypertension 21.5% (N=93)
3. Heart Problems 12.2% (N=53)
4. Diabetes Type-II 8.3% (N=36)
5. Mental Problem 3.5% (N=15)
6. Cancer 2.1% (N=9)
7. Lung Disease 1.8% (N=8)
8. Other 6.9% (N=30)

Of these 8 categories, females experienced higher incidences in 6:8 categories than males. Males had higher incidences in 2:8 categories, namely diabetes and heart conditions than females.
### Incidences of Chronic Illnesses

Table 6: Frequency and percent distribution of chronic illnesses

<table>
<thead>
<tr>
<th>Chronic Illnesses</th>
<th>Whole Group</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N (%)</td>
<td>N (%)</td>
<td>N (%)</td>
</tr>
<tr>
<td>Illnesses</td>
<td>162 (37.4)</td>
<td>55 (27.0)</td>
<td>107 (46.9)</td>
</tr>
<tr>
<td>Arthritis</td>
<td>144 (33.3)</td>
<td>53 (26.0)</td>
<td>91 (39.9)</td>
</tr>
<tr>
<td>Cancer</td>
<td>9 (2.1)</td>
<td>6 (2.9)</td>
<td>3 (1.3)</td>
</tr>
<tr>
<td>Diabetes</td>
<td>36 (8.3)</td>
<td>19 (9.3)</td>
<td>17 (7.5)</td>
</tr>
<tr>
<td>Heart</td>
<td>53 (12.2)</td>
<td>25 (12.5)</td>
<td>28 (12.3)</td>
</tr>
<tr>
<td>Blood Pressure</td>
<td>93 (21.5)</td>
<td>40 (19.6)</td>
<td>53 (23.2)</td>
</tr>
<tr>
<td>Lung Disease</td>
<td>8 (1.8)</td>
<td>3 (1.5)</td>
<td>5 (2.2)</td>
</tr>
<tr>
<td>Mental</td>
<td>15 (3.5)</td>
<td>6 (2.9)</td>
<td>9 (3.9)</td>
</tr>
<tr>
<td>Other</td>
<td>30 (6.9)</td>
<td>8 (3.9)</td>
<td>22 (9.6)</td>
</tr>
</tbody>
</table>
Predisposing Factors Findings: Smoking Behaviors

- Of the 418 participants who responded to the questions:
  - “Do you smoke now?” 16.2% (N=70) responded positively.
    - The average number of cigarettes per day was 10.
    - The average number of years they have smoked = 21 years.
    - More men smoke 21% (N=40) than women 11.8% (N=27)
- In comparison, the percent of US adult population (18 years and older) who smoke is 18.1%, with men being higher (20.5%) than women (15.8%).
  (http://cdc.gov/tobacco/campaign/tips/resources retrieved July 14, 2014)
Predisposing Factors Findings: Smoking Behaviors, con’t.

- With respect to second hand smoke:
  - 18.5% (N=80) allow guests to smoke inside their house.
  - Women allow more of their guests to smoke inside the house 21.9% (N=50) than men 14.7% (N=30).
- The next two tables provide the details of smoking history of AIP.
Smoking Behaviors: History of smoking behaviors

Table 7: Frequencies and percent distribution on smoking behaviors

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>Total</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>N</td>
<td>(%)</td>
<td>N</td>
</tr>
<tr>
<td>Currently Smoke</td>
<td>Yes</td>
<td>70</td>
<td>(16.2)</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>348</td>
<td>(80.4)</td>
<td>157</td>
</tr>
<tr>
<td>Ever Smoked</td>
<td>Yes</td>
<td>92</td>
<td>(16.2)</td>
<td>55</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>218</td>
<td>(80.4)</td>
<td>93</td>
</tr>
<tr>
<td>Smoke pipe, cigar, narguilee</td>
<td>Yes</td>
<td>19</td>
<td>(16.2)</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>371</td>
<td>(80.4)</td>
<td>180</td>
</tr>
<tr>
<td>Guest Smoke</td>
<td>Inside</td>
<td>80</td>
<td>(16.2)</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Outside</td>
<td>324</td>
<td>(80.4)</td>
<td>160</td>
</tr>
</tbody>
</table>
### Predisposing Factors Findings: Smoking Behaviors, con’t

Table 8: Mean and standard deviations on smoking behaviors

<table>
<thead>
<tr>
<th>Variable</th>
<th>Whole Group Means (SD)</th>
<th>Males Means (SD)</th>
<th>Females Means (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Cigarettes per day</td>
<td>10 (10.6)</td>
<td>11 (10.0)</td>
<td>8 (11.0)</td>
</tr>
<tr>
<td>Years Smoked</td>
<td>21 (16.0)</td>
<td>23 (16.8)</td>
<td>16 (13.0)</td>
</tr>
<tr>
<td>Years since quitting</td>
<td>11 (9.6)</td>
<td>11.8 (10.3)</td>
<td>9.6 (8.3)</td>
</tr>
<tr>
<td>Number of smokers in house</td>
<td>0.76 (1.04)</td>
<td>0.86 (1.1)</td>
<td>0.7 (0.9)</td>
</tr>
</tbody>
</table>
Predisposing Factors Findings: Depression
Significant Relationships Between Depression and other Variables

• Major finding: Depression was inversely related to social support ($r = -0.31, p<0.01$), indicating that those immigrants who have social support systems experience less depression.

• Depression was positively related to:
  - Incidences of acute illnesses ($r = 0.24, p < 0.01$)
  - Incidences of chronic illnesses ($r = 0.27, p < 0.01$)
  - Number of meds taken ($r = 0.16, p < 0.01$)
  - Systolic blood pressure ($r = 0.12, p < 0.05$)
  - Diastolic blood pressure ($r = 0.12, p < 0.05$)
  - Diabetic non-compliance ($r = 0.24, p < 0.05$)
Relationship of Depression to Other Variables (Cont’d.)

• Depression was positively related to external locus of control ($r = .34$, $p < .0001$, indicating that depressed immigrants prefer their health related decisions be made by others (e.g. health care providers).

• Depression was inversely related to:
  • Years in USA ($r = -.25$, $p < .01$)
  • Years of education ($r = -.17$, $p < .05$)
Enabling Factors Findings

Data on the following major Enabling factors are presented in the order of:

• Locus of Control

• Social support

• Self-Care Behaviors related to:
  • Compliance with their diabetic regiment
  • Compliance with their hypertension regimen
  • Performing monthly self-exams (Breast for women; prostate for men)
Enabling Factors Findings;
Locus of Control

• Locus of Control (LOC) refers to:
• “The degree to which an individual perceives success and failure as being contingent upon person’s initiative” (Andrisani & Neisdi, 1976, p. 156).
• An individual’s ability to control one’s own self and one’s own environment (Rotter, 1966)
• Individuals differ in the extent to which reinforcements are perceived to be under their control (Rotter, 1976)
Enabling Factors Findings: LOC

• For the group as a whole, LOC was inversely related to social support (r = -0.16, p < .05), indicating that those with internal LOC (low scores on the questionnaire) had significantly more social support than those with external LOC group.
• Those with higher external LOC scores were:
  ✓ More depressed (r = .34, p < .001)
  ✓ Had higher systolic Blood pressure (r = .13, p < .05)
  ✓ Inversely related to number of years in US (r = -.13, p < .05)
  ✓ Inversely related to years of education (r = -.11, p < .05)
Enabling Factors Findings: Social Support and Assistance Needed

• The rank order of support received:
  • Relatives  40% (N=173)
  • social group  19.4% (N=84)
  • interest group  7.6% (N=33)
  • Neighbors  4.6% (N=20)

• 38.8% (N=168) did not have any support.

• Women scored higher on seeking/receiving social support than men on all categories.
Enabling Factors Findings: Social Support and Assistance Needed

• Rank order of assistance needed for the group as a whole:
  • translation 23% (N=102)
  • transportation 21% (N=91)
  • Financial assistance 20.1% (N=87)
  • Shopping 14.1% (N=61)
  • Housekeeping 12.7% (N=55)
  • Other 13.4% (N=58)

• For men the most important need was financial assistance 24% (N=49) and for women transportation 29.8% (N=68).
### Enabling factors Findings: Social Support

Table 9: Frequency and percent distribution of social support (N=433)

<table>
<thead>
<tr>
<th>Type of Social Support</th>
<th>Whole Group</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N     (%)</td>
<td>N     (%)</td>
<td>N     (%)</td>
</tr>
<tr>
<td>Belong to Group</td>
<td>84 (19.4)</td>
<td>39 (19.1)</td>
<td>45 (19.7)</td>
</tr>
<tr>
<td>Relatives</td>
<td>173 (40.0)</td>
<td>78 (38.7)</td>
<td>95 (58.3)</td>
</tr>
<tr>
<td>Interest Group</td>
<td>33 (7.6)</td>
<td>12 (5.9)</td>
<td>21 (9.2)</td>
</tr>
<tr>
<td>Neighbor</td>
<td>20 (4.6)</td>
<td>5 (2.5)</td>
<td>15 (6.6)</td>
</tr>
<tr>
<td>None</td>
<td>168 (38.8)</td>
<td>89 (73.6)</td>
<td>78 (34.2)</td>
</tr>
</tbody>
</table>
### Enabling Factors findings: Assistance Needed

Table 10: Frequency & percent distribution of assistance needed (N=433)

<table>
<thead>
<tr>
<th>Assistance Needed</th>
<th>Whole Group N (%)</th>
<th>Males N (%)</th>
<th>Females N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Translation</td>
<td>102 (23.0)</td>
<td>45 (22.1)</td>
<td>57 (25.0)</td>
</tr>
<tr>
<td>Transportation</td>
<td>91 (21.0)</td>
<td>23 (11.3)</td>
<td>68 (29.8)</td>
</tr>
<tr>
<td>Shopping</td>
<td>61 (14.1)</td>
<td>17 (8.3)</td>
<td>44 (19.3)</td>
</tr>
<tr>
<td>Housekeeping</td>
<td>55 (12.7)</td>
<td>17 (8.3)</td>
<td>38 (16.7)</td>
</tr>
<tr>
<td>Financial</td>
<td>87 (20.1)</td>
<td>49 (24.0)</td>
<td>38 (16.7)</td>
</tr>
<tr>
<td>Other</td>
<td>58 (13.4)</td>
<td>29 (14.2)</td>
<td>29 (34.2)</td>
</tr>
</tbody>
</table>
Enabling Factors Findings: Relationship of Social Support to Other Variables

• One of the major findings of this study was that immigrants who had a social support system experienced significantly less depression ($r = -.31$, $p < .01$).

• Social support was significantly related to internal LOC ($r = -.16$, $p < .01$), indicating that those immigrants who had more social support took more responsibility for their own behaviors.

• Social support was positively related to number of years in the U.S.A ($r = .18$, $p < .01$), and years of education they have had ($r = .12$, $p < .05$).
Enabling Factors Findings: Relationship of Compliance with Diabetic Regimen to other Variables

• To determine if self-care behaviors of compliance with their diabetic regimen was related with other variables, Pearson $r$ was conducted.

• Results showed that non-compliance with diabetic regiments (as indicated with higher scores) was significantly and inversely related to social support ($r = -.28, p < .05$), meaning that those who complied with their diabetic regimen had significantly higher social support.

• Non-compliant diabetics had significantly higher
  - Depression ($r = -.24, p < .05$)
  - Chronic illnesses ($r = -.32, p < .05$)
  - Systolic Blood Pressure ($r = -.32, p < .05$)
Enabling Factors Findings: Compliance with Hypertension Regimen

• With hypertensive patients, the higher scores indicate lack of compliance.

• Results of Pearson $r$:
  • lack of compliance with hypertension regimen is highly correlated with increased systolic BP ($r = .20, p < .001$) and diastolic BP ($r = .11, p < .05$).
  • Systolic BP was positively related to external LOC ($r = .13, p < .05$), indicating that hypertensive immigrants’ behaviors are affected more by people external to themselves.
  • Both systolic ($r = .12, p < .05$) and diastolic BP ($r = -.12, p < .05$) were positively related to depression levels.
Enabling Factors Findings: Self-Care Practices
Mammograms, Breast Self-Exam, Prostate tests and Self-Exam

• Women were asked if they knew the reason for having mammograms and for performing monthly breast self exams (BSE),
  • 187 women answered the question
  • 184 (93%) knew the reasons
  • 103 (56%) actually did monthly BSE ($X^2 = 5.25$, $p < .02$)

• Men were asked if they knew the reason for having prostate checked for (PSA levels) and whether they do monthly testicular self-exams,
  • 145 men answered the question
  • 125 (86.3%) knew the reasons
  • 41 (32.5%) actually conducted monthly self-exams ($X^2 = 2.83$, $p < .23$)

• The LOC was not related to either the BSE or the testicular self exam.
Table 11: Frequencies and Percentages of Women’s Self-Care Practices Regarding breast Self-Exams and Gynecologic Exam

<table>
<thead>
<tr>
<th>Gender</th>
<th>Variable</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Females</td>
<td>Breast Self-Examination (BSE)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Monthly BSE</td>
<td>116</td>
<td>101</td>
</tr>
<tr>
<td></td>
<td>Any BSE</td>
<td>82</td>
<td>63</td>
</tr>
<tr>
<td></td>
<td>Know rationale</td>
<td>190</td>
<td>13</td>
</tr>
<tr>
<td>Gynecologic Exam (Gyn)</td>
<td>Gyn Exam</td>
<td>117</td>
<td>103</td>
</tr>
<tr>
<td></td>
<td>Know rationale</td>
<td>119</td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th>Variable</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Females</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Breast Self-Examination (BSE):
  - Monthly BSE: 116 (50.9%), 101 (44.3%)
  - Any BSE: 82 (36.0%), 63 (27.6%)
  - Know rationale: 190 (83.3%), 13 (5.7%)

- Gynecologic Exam (Gyn):
  - Gyn Exam: 117 (51.3%), 103 (45.1%)
  - Know rationale: 119 (87.3%), 15 (6.6%)
**Table 12: Frequencies and percentages of women who have had Mammograms**

<table>
<thead>
<tr>
<th>Mammogram Timing</th>
<th>N</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>70</td>
<td>(32.0)</td>
</tr>
<tr>
<td>1 – 2 Years</td>
<td>114</td>
<td>(50.0)</td>
</tr>
<tr>
<td>3 – 5 Years</td>
<td>14</td>
<td>(6.1 )</td>
</tr>
<tr>
<td>&gt; 6 Years</td>
<td>13</td>
<td>(5.7 )</td>
</tr>
<tr>
<td>Gender</td>
<td>Variable</td>
<td>Yes N (%)</td>
</tr>
<tr>
<td>--------</td>
<td>-------------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Males</td>
<td>Completes Monthly Testicular Exam</td>
<td>52 (25.5)</td>
</tr>
<tr>
<td></td>
<td>Know rationale</td>
<td>129 (63.2)</td>
</tr>
</tbody>
</table>
### Table 14: Frequency and Percentages Regarding Prostate Examination

<table>
<thead>
<tr>
<th>Frequency of Prostate Exam</th>
<th>N</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>81</td>
<td>(39.7)</td>
</tr>
<tr>
<td>Last 1 – 2 Years</td>
<td>93</td>
<td>(45.6)</td>
</tr>
<tr>
<td>&gt; 3 – 6 Years</td>
<td>12</td>
<td>(15.8)</td>
</tr>
</tbody>
</table>
Discussion and Implications

• This study is one of the first to investigate the health status of the AIP.

• One of the major findings of this study was that both male and female immigrants were significantly overweight than the recommended weight norm.

• Data from this study showed that weight was positively related to the incidence of chronic illnesses ($r = -0.17$, $p < .05$).

• Although with Armenians as a national group, plumpness is more accepted, however, in light of the adverse effects of overweight on overall health status of a person (Heber, 2003), special health education programs related to weight management needs to be instituted.

• This can be done at special health fairs, via the weekly Armenian Television Hour. Instructional pamphlets on foods, calories, healthy eating behaviors can be printed and disseminated at clinics, churches, social clubs etc.
Discussion and Implications, cont’d.

• With respect to the relationship between having a social support and the incidences of depression and their LOC, Armenian immigrants who had social support system experienced less depression ($r = -.34, p < .001$).

• These findings are consistent with other studies (Bhattarcharya, 2011; Collett, 1981; Fleming Et al, 1982) and their interpretation that social support acts as the stress buffering agent and helps people cope with stress.

• Social support can take the form of an emotional or instrumental assistance which helps cushion the individual against harmful effects of stressful events, such as moving or immigrating to a new country, adapting to a new culture, learning a new language, customs and values.
Discussion and Implications, cont’d.

- Other immigration related stressors can be poverty, language barriers, transportation difficulties, unemployment and feelings of isolation. The latter group of stressors have been associated with depression and often the major contributing factor of depression. (Marshall et al, 2006).
• The third major finding dealt with the incidence of both chronic (37.4%) and acute illnesses (40%). With respect to the chronic illness of arthritis, hypertension, diabetes and heart diseases, it is possible that as a total group, AIP both males and females were significantly overweight. Obesity is one of the major causes of chronic illnesses (Heber, 2007).

• The need for patient education regarding weight reduction, physical activities, behavioral changes are imperative.
Discussion and Implications, con’t.

- The incidences of acute illnesses were mostly preventable, and yet, 40% of the AIP had colds/Flu, 43.6% never had the Flu vaccine even though it was available to them free of charge, and 69% never had the pneumonia vaccine even though 68% of the sampled population had health insurance.
- PHNs and other health care professionals need to educate and encourage these people to obtain the necessary vaccines.
Discussion and Implications, con’t.

• Another major finding was that knowledge of the subject matter does not guarantee performance.

• For example, for the AIP knowledge of the need for breast self-examination (BSE) for women or testicular self-examination for men did not guarantee that they would do the monthly self-examination.

• 83% of the women knew the rationale for BSE, but only 50.9% did it.
Discussion and Implications, cont’d.

• For men, 63.2% knew the rationale for testicular exam, but only 25.5% did it on a monthly basis.

• Knowledge is important, but not a sufficient condition for compliance.

• However, higher number of people who did not know the reasons for self exam, did not conduct self-exams as compared to those who knew the reasons.

• Health educators need to assess the immigrants’ LOC and find alternate ways of motivating them to do their monthly self-exams.
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