

Asian Wellness Connection: Final Report

Asian Health and Service Center
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Prepared by
Center for Health and Social Inequality Research (CHSIR)
Portland State University

Authors
Tina Burdsall, M.S.
Matthew Carlson, Ph.D.

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INTRODUCTION

The Asian Wellness Connection (AWC) is a collaborative effort between the Asian Health and Services Center (AHSC), Oregon Health and Science University's Richmond Clinic, Rosewood Family Health Center and Portland State University. The AWC began in July 2009, and is designed to provide enhanced culturally competent and coordinated care, including wrap-around social services and linguistically appropriate chronic disease education and support to Asians living with chronic disease in the Portland metropolitan area. In collaboration with the Asian Health and Service Center, Portland State University's Center for Health and Social Inequality Research conducted an evaluation of the program's impact in improving health care quality and health outcomes for AWC participants. The purpose of this final report is to describe the results of the evaluation.

THE ASIAN WELLNESS CONNECTION

The AWC includes four interrelated programs and activities. First, weekly classes are offered to participants, along with other community members not participating in the program. These weekly group activities include an exercise component or an educational presentation as well as opportunities for socializing. Each group is conducted in a specified language (Mandarin Chinese, Cantonese, Vietnamese, and Korean) and meets at a specific location and time weekly. Some of the educational presentations at these weekly meetings include topics such as "Healthy Drinks to Boost Your Energy," "Fall Prevention and Keeping Yourself Safe," and "Practical Tips for Coping with Holiday Stress" (see Appendix Three for examples of Weekly Group Flyers). The groups are free and open to anyone, but an attendance record is kept to track participation rates among AWC participants.

Second, a comprehensive chronic disease self-management education program called Living Well with Chronic Conditions (LWCC) was implemented for AWC participants with chronic diseases. The LWCC training was created by Stanford University as part of the Chronic Disease Self-Management Program (CDSMP) and licensed by the Asian Health and Service Center. The program consists of a series of 6 classes, each two and a half hours long that were led by trained health educators. The classes offered through the AWC were taught in Korean, Chinese, and Vietnamese. This training program addressed issues specifically for people with chronic illnesses including the importance of exercise, interacting with the medical community, and cultural interpretations of pain and illness. The purpose of the program was to help people self-manage symptoms that are common to a variety of chronic illnesses. Similar CDSMP trainings have been conducted in a variety of language and cultural settings across the United States and the world (Chan et al. 2005, Elzen et al. 2007, Gordon and Galloway 2008, Lorig et al. 2001, Rose et al. 2008, Swerissen et al. 2006).

A third component of the AWC program includes culturally-competent and linguistically appropriate wrap-around services provided by the AHSC staff. Multilingual and multicultural professionals provide on-going counseling, interpretive services, general information, case management, and individual consultation.

Finally, the AHSC provided cultural competence training to the partnering outpatient clinics (Richmond Clinic and Rosewood Family Clinic). The trainings were designed to provide culturally specific consideration for providing medical care to the Asian community, and were provided to clinic staff and providers during the 36-month project period.

THE ASIAN WELLNESS CONNECTION EVALUATION

SAMPLE

In order to assess the effectiveness of the AWC program, a longitudinal prospective survey was launched in May 2010 and followed a cohort of individuals over a 12-month period. All individuals who enrolled in the program and were receiving services between May 2010 and July 2011 were provided with a baseline survey. This same group of people was also surveyed at six and twelve months in order to assess their outcomes over time.

A total of 541 participants completed baseline surveys. Of those who completed baseline surveys, 178 individuals did not complete another survey at either 6 months or 12 months. Additionally, 26 were excluded because either they did not report having a chronic condition, or their answers on the survey deviated significantly from the rest of the survey population. For example, five participants who were hospitalized during the evaluation period were excluded because their health care utilization and symptoms would have skewed the data. The remaining 337 respondents (63.7%) completed all three surveys and are the basis for this report.

SURVEY INSTRUMENT

The survey used for this project was based on the survey developed by Stanford University to evaluate their chronic disease self-management education program. The survey is designed to measure eleven specific health outcomes addressed by the LWCC program for individuals living with a chronic condition. These measures include general health status, health distress, physical symptoms (pain, fatigue, and shortness of breath), activity limitations, self-

efficacy, exercise (stretching and strengthening, and all aerobic), communication with physicians, and overall satisfaction with health care.

The surveys conducted for this study were translated and verified for accuracy by AWC staff. Surveys were translated into the three preferred languages of the AWC participants, the same languages that group activities and LWCC training were offered in: Chinese, Vietnamese, and Korean. Most participants completed the surveys in one of those three languages, however, a small number of participants completed the survey in English.

Surveys were administered by trained staff who spoke the language that the participant was most comfortable with. Surveys were administered in-person because that method was deemed to be the most culturally, age, and educationally appropriate method to conduct the survey by the study team. A copy of the English language version of the survey is provided in Appendix Two.

OUTCOME MEASURES

Eleven categories of outcomes were assessed by the surveys: general health status, health distress, pain, shortness of breath, fatigue, limitations of daily activities, perceived self-efficacy in managing various aspects of one's health and functioning, exercise (including both stretching / strengthening exercises and aerobic exercises), ways of communicating with physicians, overall rating of health care, and medical contacts (including both doctor visits and emergency department visits).

The General Health measure was created from a single question where participants were asked to rate their health as poor, fair, good, very good, and excellent. Responses were coded as 1 (excellent) through 5 (poor) so that lower scores represent better health status.

The Health Distress category was created as an average of four questions asked to assess the amount of time in the previous two weeks that participants felt distressed about their health (discouraged by health problems, fearful about future health, health a worry in life, and frustrated by health problems). Responses were coded as 0 ('none of the time'), 1 ('a little of the time'), 2 ('some of the time'), 3 ('a good bit of the time'), 4 ('most of the time') and 5 ('all of the time'). Higher scores indicate more distress about health.

Pain, shortness of breath, and fatigue were each created from single questions where participants were asked to rate their level during the past two weeks from zero to ten where zero indicated no pain, shortness of breath, or fatigue and ten represented severe pain, shortness of breath, or fatigue. Lower numbers indicate lower levels of pain, shortness of breath, or fatigue.

The daily activity limitation scale was used to determine role function. This category was created from four questions regarding the extent to which health has interfered with daily activities (normal social activities, hobbies or recreational activities, household chores, and errands or shopping) in the previous two weeks. Responses were coded as 0 ('not at all'), 1 ('slightly'), 2 ('moderately'), 3 ('quite a bit') and 4 ('almost totally'). Lower scores indicate less limitations in day-to-day activities.

The self efficacy category was created from six questions regarding how confident the participant was in their ability to complete specific tasks regularly at the present time. The participants were asked to rate on a scale of 1 (not at all confident) to 10 (totally confident) how confident they were that they could keep fatigue, physical discomfort or pain, emotional distress, or other symptoms or health problems from interfering with the things that they wanted to do. Respondents were also asked how confident they were that they could do the different tasks and activities needed to manage their health condition in order to reduce the need to see a doctor and

their confidence that they could do things other than just take medications to reduce how much their illness affects their daily life. The score for this category is the average of these six questions, and higher scores indicate increased self-efficacy.

The exercise category consists of two items: how often in the past week they engaged in stretching and strengthening exercises and a combined score of how often in the past week they spent walking, swimming, bicycling, using aerobic exercise equipment and other aerobic exercise. The response categories for each question were: 'none,' 'less than 30 minutes per week,' '30-60 minutes per week,' '1-3 hours per week,' and 'more than 3 hours per week.' These were converted to minutes and added together based on guidelines provided by the Stanford Patient Education Research Center (2007). According to these guidelines, the categories were converted to 0, 15, 45, 120, and 180 minutes per week. Stretching and strengthening exercises were reported as its own category, where the "all aerobic" category is the sum of all of the remaining exercise categories. The times reported represent the total number of minutes of each type of exercise reported by respondents during the previous week.

The communication with physician category was created by averaging the scores of three questions related to how often participants prepared a list of questions for their doctor visits, asked questions about things they wanted to know and things they didn't understand about their treatment, and how often they discussed any personal problems that may be related to their illness with their doctor. The response categories for these questions was 0 ('never'), 1 ('almost never'), 2 ('sometimes'), 3 ('fairly often'), 4 ('very often'), and 5 ('always'). Higher scores indicate better communication with physicians.

The rate all health care category was created from a single question that asked the participant to rate from 0 (worst health care possible) to 10 (best health care possible) all the

health care from the doctors or health providers at the clinic they visited most often in the past six months. Only respondents who had at least one visit with a doctor in the previous six months were included in the analysis. The higher the score the better the participant rated their health care experiences.

Lastly, medical contacts were created from adding the number of doctor visits or emergency department visits reported at baseline, six months, and twelve months. This captures an eighteen month period as each survey asked for number of visits in the previous six months. One of the goals of self-management programs for patients with chronic illnesses is that the patient takes appropriate steps to avoid visiting the emergency department and uses physician visits appropriately. While not all visits are avoidable, the general goal is to decrease the number of emergency department visits.

ANALYSIS

In order to assess the impact of the AWC program on chronic disease self management behaviors and symptoms, two sets of analyses were conducted. First, the overall impact of the program on all participants was examined by comparing baseline scores to the six and twelve-month scores for all 337 participants. Matched pair t-tests were performed to test the significance of score changes from baseline to the twelve month survey.

We then investigated the impact that the LWCC training itself had on twelve month outcomes. Only those who completed at least half of the training series (450 minutes or more of the 900 minute class series) and filled out their baseline survey prior to the training, were counted as completing the training. Repeated measure general linear models were performed to

examine whether changes from baseline to 12 months in the LWCC group outcomes were significantly different than AWC participants who did not complete the LWCC training classes.

PARTICIPANT CHARACTERISTICS

As noted above, a total of 571 individuals enrolled in the program. Of those a total of 337 (63.7%) filled out all three surveys and thus were included in the evaluation. Compared to all 571 baseline participants, the demographic characteristics of the 337 who completed all three surveys were generally similar to those who did not complete surveys. Those who completed surveys, however, were more likely to report more chronic health issues and be between the ages of seventy and seventy-nine. Additionally, participants who spoke Mandarin at home were slightly more likely to not have completed all three surveys than those who spoke other languages at home.

As described in Table 1, the majority of participants were active in more than one area of the AWC. Of those who were enrolled in the AWC, only a small number (19 [5.6%]) did not participate in any program, service, or activity during the twelve months following their baseline survey. The remaining 95% participated in one or more programs, services, or activities. Because the majority of participants were involved in more than one area of the AWC, the percentages in Table 1 will not sum to 100%. The majority of participants received wrap-around services (n=307, 91.1%) and participated in educational groups or classes (n=275, 81.6%). There were 54 individuals who completed more than half of the LWCC training (16%) and returned surveys, and thus were included in this report.

Table 1: Participation Contact

	n	(%)
No Participation in AWC Program during 12 months	19	5.6%
Wrap-Around Services	307	91.1%
Activities, Classes, Workshops	275	81.6%
Chronic Disease Self-Management Program (LWCC)	54	16%

The characteristics of the AWC participants are described in Tables 2 through 7. As shown in Table 2, the majority of respondents were female (n=225, 66.8%) and were between the ages of 60 and 79 (n=232, 68.8%). Almost half of the respondents reported completing less than a high school education (n=160, 47.5%) and most were married (n=214, 63.7%).

Table 2: Respondent Characteristics

	n	%
Gender		
Male	112	33.2
Female	225	66.8
Age		
59 or younger	55	16.3
60 to 79	232	68.8
80 or older	50	14.8
Schooling		
Less than High School	160	47.5
High School Graduate	88	26.1
More than High School	89	26.5
Marital Status		
Married	214	63.7
Not Currently Married	122	36.3

Language characteristics are reported in Table 3. The most common language spoken at home was Cantonese (n=139, 41.2%). Vietnamese was the second most common language (n=92, 27.3%), followed by Mandarin (n=63, 18.7%) and Korean (n=62, 18.4%). The majority of respondents reported limited English speaking proficiency with 39.5% claiming that they speak English poorly (n=133) and 30.6% speaking it not at all (n=103). Similar results were reported for English reading proficiency, with 33.9% claiming that they read English poorly (n=114) and 32.4% read it not at all (n=109).

Table 3: Respondent Characteristics

	n	(%)
Language Spoken at Home*		
Mandarin	63	18.7
Cantonese	139	41.2
Vietnamese	92	27.3
Korean	62	18.4
English or Other	25	7.5
English Speaking Proficiency		
Not at all	103	30.6
Poorly	133	39.5
Fair to Excellent	101	30.0
English Reading Proficiency		
Not at all	109	32.4
Poorly	114	33.9
Fair to Excellent	113	33.7

* percent does not add up to 100% because participants could report more than one language

Beginning with the 6-month survey, participants were asked about their living arrangements and the length of time that they had lived in the United States (Table 4). While the majority of respondents reported living with their spouse, other relatives, or other non-relatives (n=250, 74.9%), there were a substantial minority who live alone (n=84, 25.1%). The majority of participants have lived in the United States for 10 years or more (n=256, 76.2%).

Table 4: Respondent Characteristics

	n	(%)
Living Arrangement*		
Living With Others	250	74.9
Living Alone	84	25.1
Length of time in the US*		
Less than 10 years	80	23.8
10 years or more	256	76.2

* taken at 12-month survey

In order to be eligible for inclusion in the study, participants had to report having one or more chronic health conditions. Table 5 reports the most common chronic conditions reported by study participants on any of the surveys completed. Conditions were counted if they were reported during any of the three surveys. In addition to a fixed set of conditions listed, participants were able to indicate “other” and write in a response. Among those listed in the “other” category were kidney disease, back pain, migraines, and high cholesterol. Over the twelve-month study period, the majority of participants reported having three or more chronic conditions (n=174, 51.6%), with an additional 30.9% reporting two chronic conditions. The most reported condition was hypertension or high blood pressure (n=232, 68.8%), followed by "other" (n=171, 50.7%), and arthritis (n=169, 50.1%).

Table 5: Chronic Conditions

	n	(%)*
Hypertension or HBP	232	68.8
Other Chronic Condition	171	50.7
Arthritis	169	50.1
Diabetes	101	30.0
Depression or Anxiety	93	27.6
Heart Disease	53	15.7
Asthma	39	11.6
Emphysema / COPD / Other Lung Disease	24	7.1
Cancer	15	4.5
Number of Chronic Conditions		
1 Chronic Condition	59	17.5
2 Chronic Conditions	104	30.9
3 or more Chronic Conditions	174	51.6

* total percent adds up to more than 100% because respondents could report multiple chronic conditions.

The number of medical contacts reported was created as two categories: visits with a doctor and visits to an emergency department. The participants were asked how many times they had visited a doctor as well as how many times they had visited the emergency department in the previous six months. The total was created by adding the number of visits that were reported at baseline, six months, and twelve months. This captures 18 months of time.

The mean number of visits to a doctor was just over 5 visits during the 18 months considered. There were 24 participants (7.8%) who did not visit a doctor during the survey period at all, and 7 (2.4%) who visited a doctor 19 or more times during the 18 months (upper range was 23 visits). Over the 18 months reported for emergency department visits, the majority of participants never went to the emergency department (n=248, 74.7%). One of the goals of self-management programs for patients with chronic illnesses is that the patient takes appropriate

steps to avoid visiting the emergency department. While not all visits are avoidable, the general goal is to decrease the number of emergency department visits.

Table 6: Medical Contacts

	Mean	SD
Doctor Visits	5.369	4.514
Emergency Department Visits	0.455	1.055

Participants were asked what insurance coverage they had. At the baseline survey, there were 150 participants (44.5%) who reported having Medicare insurance which is not surprising considering the ages of the participants in this study. The second most frequently cited insurance was Oregon Health Plan (OHP) or Medicaid (n=126, 37.4%). Nearly one-quarter of the respondents (22.6%) reported that they did not have any insurance at baseline.

Table 7: Insurance Status

	n	%*
No Insurance	76	22.6%
Oregon Health Plan (OHP) or Medicaid	126	37.4%
Medicare	150	44.5%
Private Insurance	38	11.3%
Other Insurance	28	8.3%

* Total percent for Insurance does not add up to 100% because respondents could report multiple insurance coverage

FINDINGS: CHANGE IN HEALTH AND HEALTH BEHAVIORS AMONG ALL AWC PARTICIPANTS

As shown in Table 8 the Asian Wellness Connection participants showed overall improved health and health behaviors between their baseline surveys and twelve-month surveys. Statistically significant change was observed in eleven of the thirteen measures. The only two measures for which there was no statistically significant improvement was the amount of time spent engaged in stretching and strengthening exercises and the number of doctor visits.

All of the health-status measurements showed improvement between the baseline and twelve-month surveys. The health-status measurements express the mental and physical health conditions experienced by the respondents and include self-rated health, health distress, pain, shortness of breath, fatigue, and limitations in day-to-day activities. Health distress, and the reported levels for pain and shortness of breath all steadily decreased over the twelve months. Health in general and fatigue both improved between the baseline survey and the six-month survey, and then retained that improvement at the one-year survey. The mean for health in general stayed between “fair” and “good” but moved towards “good” at the six-month survey. The daily activity limitations showed its largest improvement between baseline and six months, but continued to show a small increase in improvement between the six and twelve month survey, moving even closer to health influencing day-to-day activities “slightly.” These scores indicate that AWC participants in general reported experiencing improved health status over the course of the study.

The self-efficacy measure indicates the confidence that the respondent has in being able to manage disease symptoms. This confidence is important for both the acquisition of new skills and the retention of new behaviors (Jonker et al. 2009). The change between baseline and

twelve-months in the self-efficacy measure was statistically significant, with the mean showing increasing confidence. The largest improvement was seen between the baseline survey and the six-month survey, but there was an additional slight improvement between the six-month and twelve-month period.

The health behavior measures include behavioral aspects that contribute to healthy living (Jonker et al. 2009). The components of health behavior that were measured includes stretching and strengthening exercises, aerobic exercises, and communication with physicians. The minutes spent doing stretching and strengthening exercises in a week increased between baseline and six months by seven minutes, but lost some of this increase by the twelve-month survey. The final increase between baseline and twelve-months was not statistically significant. Since many of the participants may have been actively involved in the Asian Health and Service Center prior to the AWC program implementation, it is likely that many were already involved in strengthening and stretching exercise classes offered by the Center. At baseline, for example, AWC participants reported an average of just over 1 hour per week of strengthening and stretching.

Communication behaviors when visiting a physician did not improve between baseline and six-months but did improve between the six and twelve-month surveys. At baseline, the mean score indicated that participants were between ‘almost never’ and ‘sometimes’ with their communication with their doctors. By the twelve-month survey this increased to be between ‘sometimes’ and ‘fairly often.’

Doctor visits decreased between baseline and six months but returned to the baseline score at the twelve month survey. The low number of reported visits to a physician may be because this population may be more likely to visit non-Western medical practitioners and these visits were not captured in the survey. While the change in emergency department visits did not

reach statistical significance, there was a trend towards decreasing number of visits. The overall rating of all health care improved between baseline and six-months and maintained that improvement at the twelve-month survey.

Table 8: Change for All Asian Wellness Connection Participants

All Asian Wellness Connection Participants										
	Baseline			6-month			1-Year			Significant Change at 1-Year
	N	Mean	(SD)	N	Mean	(SD)	N	Mean	(SD)	p ^a
Health in General	335	3.73	0.88	334	3.55	0.97	337	3.56	0.98	0.001*
Health Distress	337	1.44	1.25	337	1.20	1.20	337	1.03	1.16	0.001*
Pain	337	3.03	2.74	337	2.66	2.63	337	2.43	2.60	0.001*
Shortness of Breath	337	1.94	2.45	336	1.40	2.24	337	1.01	1.82	0.001*
Fatigue	337	3.48	2.68	337	3.04	2.68	337	3.04	2.70	0.008*
Daily Activity Limitations	337	0.99	1.01	337	0.77	0.96	337	0.70	0.98	0.001*
Self Efficacy	337	6.44	2.55	337	7.23	2.51	337	7.62	2.26	0.001*
Stretch and Strengthening	336	68.17	64.41	337	75.36	72.25	335	72.36	72.41	0.441
All Aerobic	329	123.42	112.19	322	145.76	117.78	313	147.60	108.98	0.001*
Communication with Physician	336	1.95	1.30	336	1.97	1.26	334	2.20	1.30	0.002*
Rate All Health Care ^b	204	7.77	2.30	219	8.44	1.72	238	8.48	1.55	0.005*
Doctor Visits	318	1.87	2.34	331	1.69	2.03	331	1.83	1.90	0.931
Emergency Department Visits	334	0.20	0.70	337	0.14	0.55	335	0.13	0.42	0.054

^a Matched pair t test for significance of change from baseline to 1 year

^b Respondents must have reported at least one medical contact within the previous six months at the survey.

* Significant Findings

FINDINGS: CHANGE IN HEALTH AND HEALTH BEHAVIORS AMONG PARTICIPANTS WHO COMPLETED LWCC TRAINING

In order to assess whether the LWCC training classes improved respondent outcomes, all respondents who participated in the training were compared with those who did not participate. Respondents who participated in the LWCC Training showed improved scores for every measure reported at baseline and twelve months. They reported better health in general, lower health distress, physical symptoms, and daily limitations, and higher levels of self-efficacy, communication with physicians, exercise, and overall rating of the health care they received at the twelve-month survey than they did at the baseline. The respondents who completed the LWCC training did appear to be slightly different at baseline than those who did not complete the training. They reported higher levels of pain and health distress but lower levels of fatigue and shortness of breath at baseline. They also rated the care that they received as lower but their communication with their physicians as better at baseline. Although AWC participants who completed the training program showed improvements in each of the outcomes assessed, so did AWC participants who did not participate in the training program. Except in one category, stretching and strengthening exercises, the improvement in each group's outcomes between baseline and twelve-months were not significantly different.

Compared with those who did not complete the LWCC training classes, those who did were more likely to increase the amount of time spent per week participating in stretching and strengthening exercises over the 1-year evaluation period. By the end of the 12-month period, participants who completed the LWCC training spent an average of 25 minutes more per week

participating in stretching and strengthening exercise than their non-LWCC trained peers (93.33 minutes / week versus 68.33 minutes / week). This finding suggests that the LWCC training effectively increases participants tendency to engage in stretching and strengthening exercises.

Although the results for all aerobic exercise were not statistically significant, the average minutes spent in a week doing aerobic exercise for the respondents who completed the LWCC training was higher than those who did not complete the training by 38 minutes a week at the twelve-month survey. This difference was not significant though since they had started out at the baseline reporting a 34 minute a week lead over their non-LWCC trained peers.

Another finding, that while not significant may nonetheless be important, is that the number of visits to a physician increased more for those that completed the LWCC training than those that did not. As a whole, those completing these surveys report visiting physicians less frequently than is often reported in other LWCC studies (Lorig et al. 1996). Those that took the LWCC training reported even fewer visits at baseline than those that did not take the training, but they reported an increase by the twelve-month survey where those that did not take the training did not report an increase. Although it is likely that many of the respondents were seeing non-Western medical practitioners that were not captured in this survey, part of the goal of the training is to increase appropriate use of physician visits. While these visits did not reach statistical significance, this trend along with the increase in the scores for communicating with physicians indicates that the class may have had a positive impact on the use of Western medical practitioners.

Table 9: Comparing LWCC Training Completers with those who did not take or complete the LWCC training

Comparing LWCC Training with non-LWCC at 12 Months							
	LWCC Training			Non LWCC Participants			Significance
	Baseline	12 Month	Mean	Baseline	12 Month	Mean	
	Mean	Mean	Difference	Mean	Mean	Difference	P ^a
Health in General	3.74	3.63	-0.11 ^b	3.73	3.54	-0.19 ^b	0.25
Health Distress	1.60	1.19	-0.41 ^b	1.41	1.00	-0.41 ^b	0.23
Pain	3.15	2.50	-0.65 ^b	3.02	2.42	-0.60 ^b	0.96
Shortness of Breath	1.72	0.81	-0.91 ^b	1.99	1.05	-0.94 ^b	0.16
Fatigue	3.09	3.04	-0.05 ^b	3.57	3.06	-0.51 ^b	0.28
Daily activity limitations	0.99	0.71	-0.28 ^b	1.00	0.70	-0.30 ^b	0.71
Self Efficacy	6.48	7.65	1.17 ^c	6.44	7.61	1.17 ^c	0.62
Stretch and Strengthening	59.72	93.33	33.61 ^c	69.95	68.23	-1.72 ^c	0.05
All Aerobic	151.60	180.32	28.72 ^c	117.15	141.80	24.65 ^c	0.45
Comm. with Physician	2.25	2.72	0.47 ^c	1.88	2.09	0.21 ^c	0.29
Rate All Health Care*	7.69	8.55	0.86 ^c	7.85	8.42	0.57 ^c	0.83
Doctor Visits	1.73	1.94	0.21	1.88	1.86	-0.02	0.82
Emergency Department Visits	0.11	0.04	-0.07	0.22	0.13	-0.09 ^b	0.63

^a GLM Repeated Measure test for significance of difference between baseline and twelve months for those who completed the training and those that did not. Adjusted for age, gender, and marital status.

^b Improvement is denoted by a negative mean difference

^c Improvement is denoted by a positive mean difference

* Respondents must have reported at least one medical contact within the previous six months at both baseline and twelve month

DISCUSSION

The purpose of this study was to assess the impact of the AWC program in improving health care quality and health outcomes. The AWC was designed to provide culturally competent and coordinated care to Asians living with chronic illness in the Portland metropolitan area. Using a longitudinal prospective survey, we followed a cohort of 337 individuals over the course of a twelve-month period. All individuals who enrolled in the AWC program and were receiving services during the timeframe received a baseline survey. This same group of people was also surveyed at six and twelve months in order to assess their outcomes over time.

We found that in general, AWC participants showed improved health status, self-efficacy, and health behavior after participating in the program for 12 months. The only measure in those categories that did not show improvement was stretching and strengthening exercises, and this is likely explained by a high level of participation at the start of the study in traditional Chinese exercises like Qi Gong and Tai Chi. Overall participants also increased their health care utilization, but the number of visits to a physician remained low and fairly consistent over the time period. Nevertheless, because there was no control group, it is not possible to tell whether the AWC program had a causal effect on health improvements.

We also examined the impact that the Living Well with Chronic Conditions training had on the 54 participants who completed at least half of that training and completed surveys. Compared to AWC participants who did not complete the training program, those who did reported significantly greater improvements in stretching and strengthening exercises. Those that took the LWCC training increased their time spent on stretching and strengthening from 60

minutes to 90 minutes a week, and those that did not take the training maintained their time at just about 70 minutes a week.

The finding that both participants and non-participants in the LWCC training improved over the twelve months is similar to another study that looked at the effect of LWCC training in the Netherlands (Elzen et al. 2007). It is possible that those who did not participate in training showed improvements similar to training participants because of a cross-over effect. That is, many of the training participants interact with non-participants during other activities and share the knowledge gained from the trainings. It also could be that the act of filling out three surveys increased the sensitivity of those that were not in the LWCC training to some of the health issues that were being assessed. Because we did not have a comparison group that was not involved with the AWC program it is not possible to determine whether the LWCC training had an independent impact on the health outcomes or health behaviors of the participants.

One of the clear findings from this study is that the AWC program was highly valued by participants. Among those recruited to participate, nearly 95% who were surveyed participated in at least one program during the year, and most participated in multiple classes, activities, and services. The average time spent participating in AWC activities among respondents was approximately three and a half hours per month, either in classes, activities or other services. The overall improvement in outcomes reported by program participants is likely associated with this high level of participation and involvement in the AWC programs and activities.

APPENDIX 1: MEANS AND STANDARD DEVIATION: LWCC TRAINING

Means and Standard Deviations were determined by GLM Repeated Measures test for significance between baseline and twelve months for those who completed the LWCC training and those who did not. All scores were adjusted for age, gender, and marital status.

Means and Standard Deviation for LWCC Training Participants				
	Baseline		12	
	Mean	SD	Month	SD
	Mean	SD	Mean	SD
Health in General	3.74	0.994	3.63	1.015
Health Distress	1.6	1.334	1.19	1.285
Pain	3.15	2.968	2.5	2.626
Shortness of Breath	1.72	2.285	0.81	1.661
Fatigue	3.09	2.268	3.04	2.562
Daily activity limitations	0.99	0.96	0.71	0.994
Self-Efficacy	6.48	2.51	7.65	2.387
Stretch and Strengthening	59.72	62.325	93.33	74.041
All Aerobic	151.6	131.373	180.32	122.201
Comm. with Physician	2.25	1.295	2.72	1.321
Rate All Health Care*	7.69	1.854	8.55	1.502
Doctor Visits	1.73	1.941	1.94	1.742
Emergency Department Visits	0.11	0.577	0.04	0.192

Means and Standard Deviation for non-LWCC Training Participants				
	Baseline		12	
	Mean	SD	Month	SD
	Mean	SD	Mean	SD
Health in General	3.73	0.852	3.54	0.967
Health Distress	1.41	1.235	1	1.129
Pain	3.02	2.694	2.42	2.605
Shortness of Breath	1.99	2.481	1.05	1.851
Fatigue	3.57	2.746	3.06	2.727
Daily activity limitations	1	1.028	0.7	0.978
Self-Efficacy	6.44	2.569	7.61	2.242
Stretch and Strengthening	69.95	64.913	68.23	71.696
All Aerobic	117.15	107.459	141.8	103.247
Comm. with Physician	1.88	1.299	2.09	1.265
Rate All Health Care*	7.85	2.155	8.42	1.556
Doctor Visits	1.88	2.416	1.86	1.97
Emergency Department Visits	0.22	0.729	0.13	0.422

APPENDIX 2: ENGLISH VERSION OF SURVEY

1. What is your age? _____

2. Are you male or female?

- ₂ Male
₁ Female

3. What is the highest grade or level of school that you completed?

- ₅ Less than high school
₄ High school graduate
₃ Some college or associates degree
₂ College degree (4-year)
₁ More than a 4-year college degree

4. Are you currently (check only one):

- ₅ Married
₄ Single
₃ Separated
₂ Divorced
₁ Widowed

5. Are you currently:

- ₃ Living alone
₂ Living with spouse
₁ Living with relatives or nonrelatives

Number of persons living in your house (including yourself): _____

6. What language do you usually speak at home?

- ₁ Mandarin
₂ Cantonese
₃ Vietnamese
₄ Korean
₅ English
₆ Other: _____

7. How long have you lived in the United States:

- ₄ Less than 1 year
₃ 1 to 4 years
₂ 5 to 9 years
₁ 10 years or more

8. How well do you **speak** English?

- ₅ Excellent
₄ Well
₃ Fair
₂ Poorly
₁ Not at all

9. How well do you **read** in English?

- ₅ Excellent
₄ Well
₃ Fair
₂ Poorly
₁ Not at all

YOUR HEALTH AND SYMPTOMS

10. Please indicate below which chronic conditions you have (check all that apply):

- ₉ Diabetes
- ₈ Asthma
- ₇ Emphysema or COPD
- ₆ Other lung disease _____
- ₅ Heart Disease (specify type)_____
- ₄ Arthritis or other rheumatic disease (specify type)_____
- ₃ Cancer (specify type)_____
- ₂ Hypertension or high blood pressure
- ₁ Depression/Anxiety
- ₀ Other (specify) _____

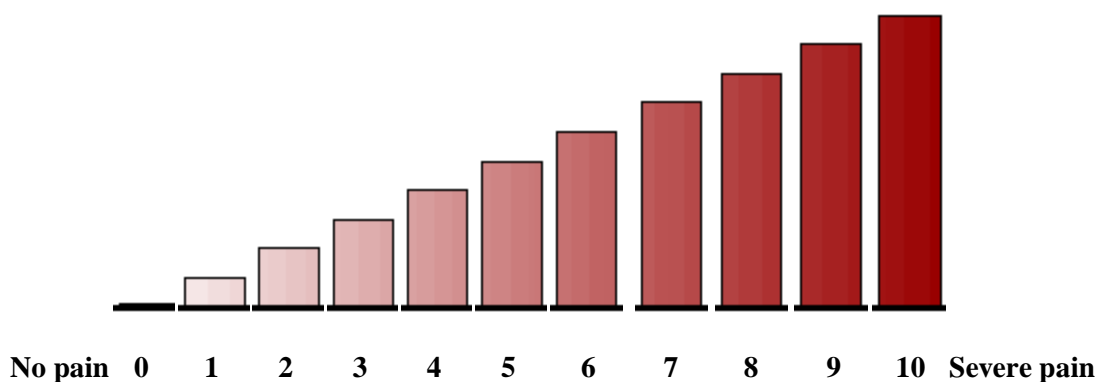
11. In general, would you say your health is:

- ₅ Excellent
- ₄ Very Good
- ₃ Good
- ₂ Fair
- ₁ Poor

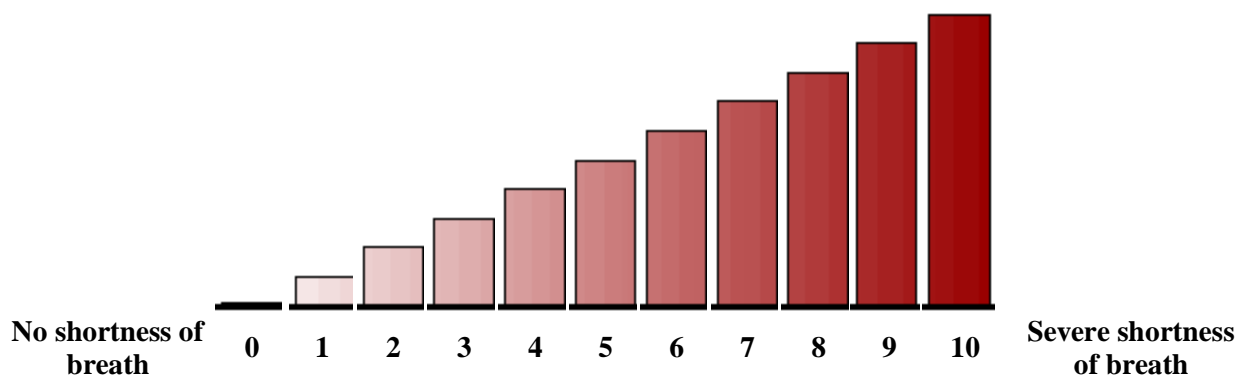
For each question, please **circle** the **one** number that comes closest to the way you have been feeling during the **PAST 2 WEEKS**.

How much time during the PAST 2 WEEKS:	None of the time	A little of the time	Some of the time	A good bit of the time	Most of the time	All of the time
12. were you discouraged by your health problems?.....	0	1	2	3	4	5
13. were you fearful about your future health?.....	0	1	2	3	4	5
14. was your health a worry in your life?.....	0	1	2	3	4	5
15. were you frustrated by your health problems?.....	0	1	2	3	4	5

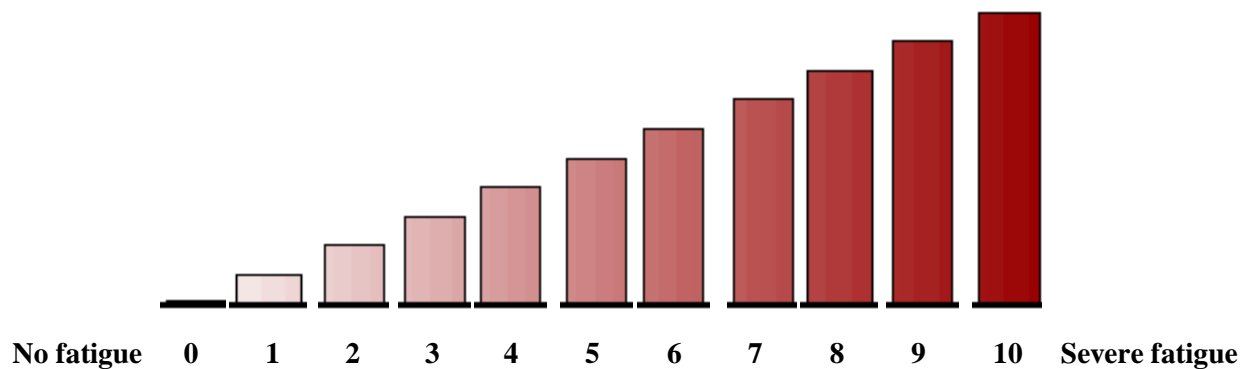
16. We are interested in learning whether or not you are affected by **PAIN**. Please **circle** the number below that best describes your **pain** in the **past 2 weeks** where **10** is severe pain and **0** is no pain :



17. We are interested in learning whether or not you are affected by **SHORTNESS OF BREATH**. Please **circle** the number below that best describes your **shortness of breath** in the **past 2 weeks** where **10** is severe shortness of breath and **0** is no shortness of breath:



18. We are interested in learning whether or not you are affected by **FATIGUE**. Please circle the number below that best describes your **fatigue** in the **past 2 weeks** where **10** is severe fatigue and **0** is no fatigue:



DAILY ACTIVITIES

(CIRCLE ONE)

During the past 2 WEEKS, how much...	Not at All	Slightly	Moderately	Quite a bit	Almost Totally
19. has your health interfered with your normal social activities with family, friends, neighbors or groups?.....	0	1	2	3	4
20. has your health interfered with your hobbies or recreational activities?..	0	1	2	3	4
21. has your health interfered with your household chores?.....	0	1	2	3	4
22. has your health interfered with your errands and shopping?.....	0	1	2	3	4

CONFIDENCE ABOUT DOING THINGS

For each of the following questions, please **circle the number** that corresponds with your **confidence** that you can do the tasks regularly at the present time.

Using any number from 1 to 10, where 1 is “not confident at all”, and 10 is “totally confident”, how confident are you that you can....

23. keep the fatigue caused by your disease from interfering with the things you want to do?	Not at all confident	1	2	3	4	5	6	7	8	9	10	Totally confident
24. keep the physical discomfort or pain of your disease from interfering with the things you want to do?	Not at all confident	1	2	3	4	5	6	7	8	9	10	Totally confident
25. keep the emotional distress caused by your disease from interfering with the things you want to do?	Not at all confident	1	2	3	4	5	6	7	8	9	10	Totally confident

On a scale of 1 to 10, where 1 is “not confident at all”, and 10 is “totally confident”, how confident are you that you can....

26. Keep any other symptoms or health problems you have from interfering with the things you want to do?	Not at all confident	1	2	3	4	5	6	7	8	9	10	Totally confident
27. Do the different tasks and activities needed to manage your health condition in order to reduce your need to see a doctor?	Not at all confident	1	2	3	4	5	6	7	8	9	10	Totally confident
28. Do things other than just taking medication to reduce how much your illness affects your everyday life?	Not at all confident	1	2	3	4	5	6	7	8	9	10	Totally confident

PHYSICAL ACTIVITIES

During the past week (even if it was not a typical week for you), how much **total** time for the entire week) did you spend on each of the following? (Please **circle** one number for each question, even if it is “0”)

How often during THE PAST WEEK:	None	Less than 30 minutes per week	30-60 minutes per week	1-3 hours per week	More than 3 hours per week
29. Stretching or Strengthening Exercises (tai chi, using weights, etc)...	0	1	2	3	4
30. Walk for exercise.....	0	1	2	3	4
31. Swimming or aquatic exercise.....	0	1	2	3	4
32. Bicycling (including stationary bikes).....	0	1	2	3	4
33. Other aerobic exercise equipment (stairmaster, rowing machine, etc.).....	0	1	2	3	4
34. Other aerobic exercise Specify _____	0	1	2	3	4

YOUR MEDICAL CARE

35. When you **visit your doctor**, how often do you do the following. Please **circle one number** for each question.

How often do you:	Never	Almost Never	Some- times	Fairly Often	Very Often	Always
a. prepare a list of questions for your doctor?.....	0	1	2	3	4	5
b. ask questions about the things you want to know and things you don't understand about your treatment?.....	0	1	2	3	4	5
c. discuss any personal problems that may be related to your illness?.....	0	1	2	3	4	5

36. In the **past 6 months**, how many times did you visit a physician. If you did not visit a physician in the past 6 months, please write "0". Do not include visits while in the hospital or the hospital emergency department..... _____ visits.

a. Which clinic did you visit **most often in the past 6 months**?

- ₁ OHSU Richmond Clinic
- ₂ Rosewood Family Health Center
- ₃ Some other clinic
Specify clinic: _____.
- ₄ No clinic visits in the past 6 months

37. In the **past 6 months**, how many times did you go to a hospital emergency department? If you did not visit a hospital emergency department in the past 6 months please write "0"..... _____ times.

38. In the **past 6 months**, how many times were you hospitalized for one night or longer? If you had no overnight hospitalizations in the past 6 months please write "0" _____ times.

a. How many total nights did you spend in the hospital **in the past 6 months**? If you did not spend any nights in a hospital in the past 6 months please write "0"..... _____ nights.

You are almost done!

39. For each of these questions, please **circle** the one answer that describes your experience with your doctors or other health providers at the clinic you visited most often in the **past 6 months**. If you did not visit a doctor/health provider in the past 6 months leave this answer blank and skip to question 41.

In the past 6 months , how often did your doctor or other health providers:	Never	Some- times	Usually	Always
a. explain things in a way that was easy to understand?.....	0	1	2	3
b. listen carefully to you?	0	1	2	3
c. show respect for what you had to say?.....	0	1	2	3
d. spend enough time with you?.....	0	1	2	3
e. give you easy to understand instructions about taking care of your health problems or concerns?.....	0	1	2	3

40. Using any number from 0-10, where 0 is the worst health care possible and 10 is the best health care possible, what number would you use to rate all your health care from the doctors or health providers at the clinic you visited most often in **the past 6 months**? If you did not visit a doctor/health provider in the past 6 months leave this answer blank and skip to question 41.

(CIRCLE ONE)

Worst Health Care Possible	0	1	2	3	4	5	6	7	8	9	10	Best Health Care Possible
----------------------------------	---	---	---	---	---	---	---	---	---	---	----	------------------------------

41. An interpreter is someone who repeats or signs what one person says in a language used by another person.

In the last 6 months, did you need an interpreter to help you speak with doctors or other health providers?

- ₁ Yes
- ₂ No

42. In the last 6 months, when you needed an interpreter to help you speak with doctors or other health providers, how often did you get one?

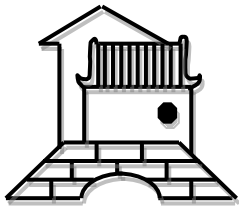
- ₁ Never
- ₂ Sometimes
- ₃ Usually
- ₄ Always
- ₅ Did not need an interpreter in the past 6 months

43. What type of health insurance do you have right now? (please check all that apply)

- ₀ None
- ₁ Oregon Health Plan or other Medicaid
- ₂ Medicare
- ₃ Private insurance (Blue-Cross/Blue-Shield, Prudential, Kaiser Northwest, etc.)
- ₄ Other _____

Thank you for your help!

APPENDIX 3: EXAMPLE OF PROGRAM FLYERS



華人服務中心

ASIAN HEALTH & SERVICE CENTER

波特蘭中心:
3430 SE Powell Blvd,
Portland, OR 97202
電話: (503) 872-8822

比弗頓中心:
12500 SW Allen Blvd.,
Beaverton, OR 97008
電話: (503) 641-4113

網址 www.ahscpx.org

時間：每週四上午
09:30 養身健康操
10:15晨讀十分鐘
10:25主題講座
11:30免費午餐(*60歲以上
Multnomah County 之長者)
地點：波特蘭華人服務中心



2011 四月份

4/7 健康飲食:抗老防癌
4/14世界之最:金氏世界紀錄
4/21陶冶性情:花卉博覽會
4/28健康生活:預防老年癡呆



2011 五月份

5/5溫馨母親節
5/12 健康生活：保養五官功能
5/19健康講座-心靈之旅
5/26舞動人生



波特蘭長春俱樂部

樂部

2011六月份

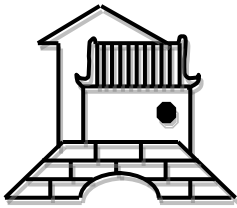
6/2 旅遊景點介紹
6/9健康新知識
6/16 簡易防癌食物製作
6/23 糖尿病患生活指南
6/30日常英語會話學習



波特蘭長春俱樂部以國語進行，不需會費，不限年齡歡迎所有人參加。

以上活動或有調動，如需查詢，請電503-641-4113 王怡伶或

503-872-8822分機222冼潔清



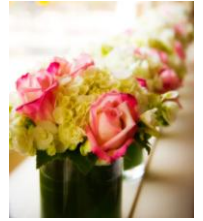
華人服務中心

ASIAN HEALTH & SERVICE CENTER

Portland Office:
3430 SE Powell Blvd,
Portland, OR 97202
Phone: (503) 872-8822
Fax: (503)872-8825

Web: www.ahscpdx.org

Beaverton Office:
12500 SW Allen Blvd.,
Beaverton, OR 97008
Phone: (503) 641-4113
Fax: (503) 872-8825



Time : Thursday Morning

09:30 Cardio Exercise

10:15 10-Minute Reading

10:25 Education Workshop

11:30 Free Lunch (*For People who lives in
Multnomah County and age of 60 or older)

Location: 3430 SE Powell, Portland, OR



APR 2011

4/7 Cancer-Fighting & Anti-Aging Diet

4/14 World Extremities:
Guinness World Records

4/21 Browsing the Pavilions of
the International Flora Expo

4/28 Living Well: The Steps to
Dementia's Prevention



MAY 2011

5/5 Mother's Day Celebration

5/12 Preventing the Deterioration of Our Senses

5/19 Health Education-

Experience a Wellness Lifestyle

5/26 Step into the World of Dancing

Portland Senior Club

June 2011

6/2 My Asia Travelogue

6/9 Health Newsfeeds

6/16 Simple Anti-Cancer Cooking

6/23 A Guide to Diabetic Living

6/30 Easy-to-Remember English

Conversation Starters



Portland Senior Club is conducted in Mandarin Chinese and is free for everyone.

The above activities are subject to change or reschedule.

For more info, please call Yi-Ling Wang at 503-641-4113 or

Vanessa Sin at 503-8728822x222

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