Cardiovascular Health Training for Community Health Workers Serving Native Hawaiians

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Background:

Native Hawaiians and Pacific People living in Hawai`i, in comparison to other ethnic groups, have highest rates of cardiovascular disease (CVD).[1] They also have higher rates of mortality due to CVD.[2] Trends similar to those observed in Hawai`i are seen in the continental United States where cardiovascular disease disproportionately affects certain minority populations such as non-Hispanic Blacks, American Indians and Alaskan Natives.[3] These facts come as no surprise as coronary heart disease, followed closely by stroke and other components of CVD, is the leading cause of death within the United States of America and globally as well.[4]

Table 1: Demographic Characteristics of Heart 101 Participants, 2010

	n= 46 Count (%)	n= 30, completed data Count (%)
Gender		
Male	15 (32.61)	9 (30)
Female	31 (76.39)	21 (70)
Age		
19-30 years	8 (17.39)	5 (16.67)
30-50 years	18 (39.13)	12 (40.0)
Over 50 years	20 (43.48)	13 (43.33)
Experience in Healthcare (Yr)		
0-1 years	5 (10.87)	3 (10.0)
1-2 years	2 (4.35)	0
2-5 years	7 (15.22)	5 (16.67)
5 or more years	32 (69.55)	22 (73.33)

The multidimensional aspect of CVD requires that patient care be provided by a variety of sources. One component of a successful multidisciplinary approach is the use of community healthcare workers (CHW). Though CHW are often hired with little to no formal health education or clinical experience, the use of CHW in clinics and other health agencies have proven to be an effective resource for proper self-management of many chronic conditions, including hypertension.[5] Minority populations may especially benefit from the use of CHW because CHW are able to serve as guides, translators, and case managers for health education and services.

In Hawai'i, CHW are used extensively in community health centers (CHC) and throughout the Native Hawaiian Healthcare System (NHHS). A needs assessment of 19 CHC and the NHHS identified the training of CHW about chronic conditions, such as heart disease and diabetes, as a top priority. To address this need, the Center for Native and Pacific Health Disparities Research at the University of Hawai`i's John A. Burns School of Medicine facilitated the development and implementation of "Heart 101," a cardiovascular health education seminar. The has been taught three times in the State of Hawaii and will soon begin on the Continental U.S. A total of forty-six individuals have attended the training seminars thus far.

Methods:

Heart 101 is a 5-hour long seminar taught by a multidisciplinary team. It is delivered in three modules and typically taught over two days. The curriculum combines a PowerPoint guided lecture with interactive class games, group discussions, and role-play scenarios.

A student workbook is also supplied to each participant.

The initial curriculum was developed by a Native Hawaiian health educator with a Masters Degree in Public Health who formerly was a community health worker. The content and teaching strategies were reviewed and refined by a team of NHPP health professionals including a cardiovascular nurse and internal medicine physician. Effort was made for the curriculum to be culturally relevant to the target audience and the populations they serve. Specific culture-based aspects were: 1) language: recognizing and using native or heritage language, 2) context: structuring the class in culturally appropriate ways, and 3) content: making learning meaningful and relevant through culturally grounded content and assessment.[6] Other teaching strategies were incorporated for seminars developed for this target audience.[7]

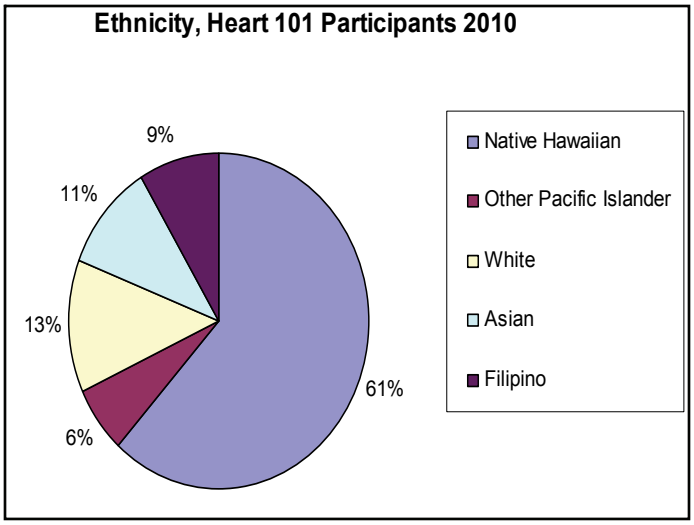

Figure 1: Ethnic Composition of Heart 101 Participants, 2010

For this evaluation, the pre- and post-seminar knowledge test results of the 46 participants from all three sessions held in January, April and May 2010 were examined. Only the thirty participants who fulfilled all of the training requirements were included in the analysis of changes of knowledge. Sixty-three percent of seminar participants identified CHW or outreach worker as their current work position. Medical assistants and other health professionals, traditional practitioners, managerial staff and health educators were among the most frequently specified job positions of the remaining 37%. Nearly two-thirds of the participants were women (Table 1). Healthcare workers who participated in the training workshops were also more likely to identify as a Native Hawaiian (61%) (Fig.1).

To asses the level of knowledge gained by participants, a cardiovascular disease knowledge test was given before the seminar, at the very end of seminar, and will be given at six months post-seminar. All three tests are identical in content and consisted of 16 multiple-choice selected from the Coronary Heart Disease Knowledge Test—developed and validated by the University of New Mexico Wellness Center and Southwest Cardiology Associates.[8] Each participant was then assigned a unique ID# and pre- and post-seminar test scores were analyzed using JMP software, a SAS-based statistical analysis software program. Paired t-tests compared differences in the mean values for baseline (pre-seminar) and post-seminar tests to adequately measure knowledge gained from the training (Table 2).

Figure 2: Community Health Workers during Post-Test

In addition to the knowledge test a satisfaction survey, comprised of an evaluation form and a performance rating, was also administered. The evaluation form included four free-response questions to examine what was most and least enjoyable about the seminar, how the seminar should

be improved and what information (if any) should be added. Answers were categorized and tallies of the most frequent answers were assessed. The performance rating section asked participants whether or not they agreed, were not sure, or disagreed with nine questions assessing the communication abilities of the educators, length, and content scope/complexity of the seminar.

Results:

Test scores revealed a significant improvement between the average pre-seminar test scores and post-seminar test scores, 11 and 14.77 respectively ($p<0.0001$). This is an increase of 34.3% in the average test scores. The satisfaction survey showed that the majority of participants enjoyed the seminars and found the seminars to be informative, understandable and engaging. When asked what they liked best about Heart 101, the most popular answers were good information, information was presented well and that they really enjoyed the games and group activities.

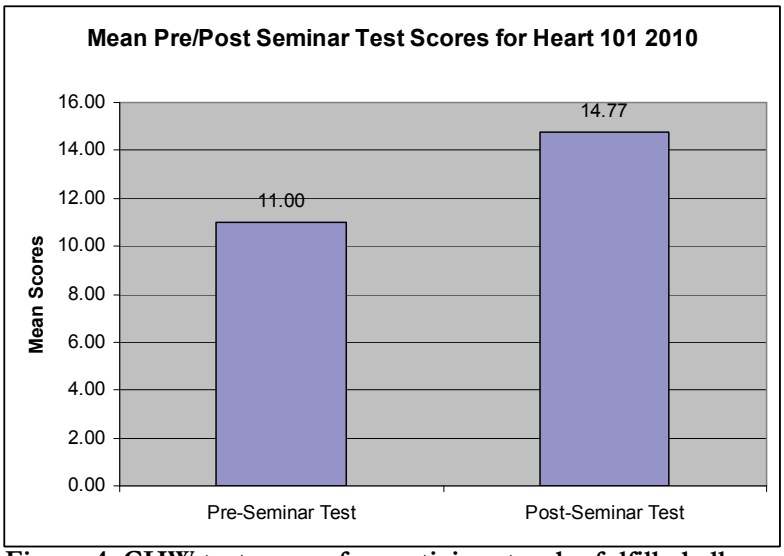

Figure 4: CHW test scores for participants who fulfilled all seminar training requirements

Table 2: CHW test scores for participants who fulfilled all seminar training requirements

n=30	Total
Mean Pre-seminar Score	11
Mean Post-seminar Score	14.77
Mean Difference (SD)	3.77
P-Value	< 0.0001

One participant stated a common theme of the responses that the material was presented by "local presenters in a local style; sharing interesting info that can easily be understood." The most frequent complaint about the seminar was that the time allotted was too short. Participants also noted that they would appreciate more information on alternative/traditional treatments and how to better help patients without insurance.

Discussion:

This evaluation has shown Heart 101 to be an effective tool for educating CHW in cardiovascular health knowledge. Heart 101 provides training participants with a sufficient foundation for continued growth in their cardiovascular health knowledge, and offers CHW the skills to build on their ability to deliver cardiovascular self-care and management information to NHPP patients.

Based on instructor and participant feedback, we believe that the success of Heart 101 can be attributed to the training's culturally relevant curriculum, team teaching approach, and interactive class activities. These three teaching strategies seem to provide non-traditional students with a cardiovascular health education that is conducive to their learning preferences. The program's incorporation of practical knowledge, group cohesion, and emphasis on personal connections to the disease seem to foster strong student engagement.

A significant limitation to this evaluation was the lack of a control group. The benefit of having a control group could further validate whether or not our curriculum is the superior method for educating the targeted population and could lead to an evaluation of the actual clinical application of the knowledge gained. In addition, while a total of forty-six CHW participated in three separate Heart 101 training workshops held on O`ahu, Maui and Hawai`i Island throughout the first half of the 2010 year, only thirty could be evaluated with data comparing pre- and post- seminar tests. Twelve participants were given a defective form of the test and four others were excluded because either a post-test was not completed or a consent form was not obtained.

Further study is currently being done to test retention of cardiovascular health information at six months post-seminar. Participants are being sent identical forms of the knowledge test via email and physical mailings. It is our belief that participants will retain the knowledge they gained during the Heart 101 seminars as previous analysis of CHW training in chronic disease (Diabetes 101) have shown to be successful.

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