HAWAI'I MEDICAL JOURNAL

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Cover art by Dietrich Varez, Volcano, Hawai'i. All rights reserved by the artist.

"Volcano Information Center"

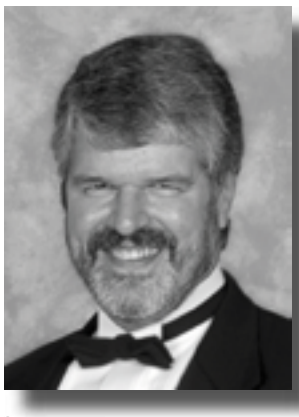
Depicting the visitor's information locale for national park and volcano town.

HE MANA'O: THOUGHTS FROM THE EDITOR

HAWAI'I MEDICAL JOURNAL

American College of Physicians: Laureate Award Speech by Ed Cadman MD, FACP, Laureate

Editor's Note:
At the Annual Meeting of the Hawai'i Chapter of the American College of Physicians, Dr. Edwin C. Cadman, former Dean of the University of Hawai'i John A. Burns School of Medicine, received the Laureate Award. I have chosen his remarks that evening as "He Mana'o: Thoughts" for this month.



S. Kalani Brady MD, MPH, FACP
Editor, Hawai'i Medical Journal

March 4, 2006

Thank you so much for this award, I humbled and honored by it.

When I came to Hawaii in November 1999, the medical school was about to be closed and was threatened with probation. All around me were downtrodden faculty, staff and students and the physicians in the community as well. My friends asked me "WHY ARE YOU GOING TO HAWAII?" I saw the opportunity at the medical school; and I wanted to a part of it. Most research-intensive medical schools can be the catalyst for the biotechnology industry and they can also elevate the health care in the region in which they reside, especially in the island State of Hawaii.

The medical school was well known for its Problem Based Learning curriculum in 1999. But many of the faculty and students realized that their medical school would not become nationally recognized unless we had a research component. We instilled enthusiasm and self-confidence in their hearts and minds. We lifted our heads up high, began smiling again, looking forward with squinted eyes to a bright future.

The Success in the Last Six Years

We are fully accreditation until 2008. The total annual revenues have doubled to $113 million, and are projected to be $120 million this year. Grants and contacts have exploded from $3.2 million to $60 million. The State contributes $22 million; but, the hospitals did more, $28 million. New departments include Geriatrics, Complementary and Alternative Medicine, and Native Hawaiian Health. The John A. Burns School of Medicine graduated a total 1,802 physicians for our State, of which there are 184 Native Hawaiians. And the most important SINGLE success is the medical school campus in Kaka'ako. All of you should be congratulated for it. It would not have happened without you and your friends' and families' support.

The Board of Regents and the legislature took the courage to believe in our dreams. I would like to thank David McClain, President, for all his support; and former President of the University, Ken Mortimer who recruited me. I want to recognize all the faculty and students and staff, who came together and developed their strategic plan for the medical school. And they had the determination and fortitude to implement it. Robert Nobriga, our former CFO, who made sense of the finances, when I couldn't.

I recruited Sam Shomaker nine months after I arrived to be the Executive Dean, I have every confidence in him; and, he is doing an excellent job as interim dean.

I want to thank Governor Ben Cayatano who did not close the medical school; and it was his idea to use the tobacco money to payoff the principle and interest of the $150 million loan.

Most importantly, I want to acknowledge Governor Lingle's tremendous support in this project and to me personally. She was always available.

The renaissance and revitalization is happening in Kaka'ako because of the medical school: there are preliminary designs for the cancer center, which will be located EWA to school. Kamehameha Schools is constructing two buildings for the biotech and life sciences industry right the across street from the medical school, and there will be another research structure on the medical school campus. And then there is an Alexander & Baldwin project, as well. These facilities and projects will bring new jobs, new dollars and higher salaries; and, the children of Hawaii can come home now.

- It is all about Greatness, not mediocrity
- It is all about Excellence, not above average
- It is all about Hardwork, not laziness
- It is all about Critical thinking, not random thoughts

Set your sights high and dream: if you don't, you will have a nightmare. I love my school, I love my State and I love you all. Keep Vision!! Thanks!!!

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Use of Provider Delivered Complementary and Alternative Therapies in Hawai'i: Results of the Hawai'i Health Survey

Rosanne Harrigan EdD, Nnenna Mbabuike MS3, Jimmy Thomas Efird PhD, David Easa MD, Terry Shintani MD, Zoë Hammatt JD, John Perez, and T. Samuel Shomaker MD, JD

Abstract

Background

Provider delivered complementary and alternative medicine (CAM) is used increasingly as a treatment option. Nevertheless, data related to the prevalence of provider delivered CAM (or PDCAM) use in diverse racial and ethnic populations is limited. The purpose of this investigation was to describe the use of provider delivered CAM in Hawaiian, Asian, and other Pacific Island populations in Hawai'i. The investigation was undertaken to test the hypothesis that a significant difference existed in the use of provider delivered CAM in Hawai'i because of the cultural diversity existing within the population.

Methods

The data were collected through the Hawai'i Health Survey (HHS). The HHS was administered by telephone among 5,000 stratified, randomly selected households, representing each of the Hawaiian Islands. Data were collected on all members of sample households. The sample population was statistically adjusted to represent the population of Hawai'i.

Results

Several factors emerged that may indicate increased use of provider delivered CAM. Most provider delivered CAM users are more educated, have incomes 200% or more above the poverty line, and reported either good or very good health status. Among respondents with poor health status, 60.4% have used provider delivered CAM. Those with a body mass index indicating that they were overweight also reported a high level of provider delivered CAM use (51.4%). Similar percentages of both women and men use provider delivered CAM, while the youngest and oldest respondents reported the least use of provider delivered CAM. Whites (60.0%) and Koreans (56.6%) reported the highest percentage of use of provider delivered CAM, while African Americans (35.5%) and Filipinos (37.1%) reported the lowest percentage. The majority of people without health insurance report provider delivered CAM use (53.7%). The highest portion of people who have used any alternative health care service is found among those whose pain severely interferes with normal work (78.3%).

Conclusions

The use of provider delivered CAM was found to be significantly greater in Hawaii compared with the mainland. Our results suggest the need for additional investigation of provider delivered CAM use in specific ethnic subpopulations.

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Background

Provider delivered complementary and alternative medicine is defined as a group of diverse medical and healthcare systems, practices, and products not considered part of conventional medicine. Complementary medicine refers to therapies used with conventional medicine, and alternative medicine denotes therapies used in place of conventional medicine. According to several studies, complementary and alternative medicine (CAM) is increasingly used as a treatment option.[1-11] The investigators sought to: 1) Describe the use of provider delivered CAM in Hawaiian, Asian, and other Pacific Island populations in Hawai'i; 2) Explore reasons for its use within the diverse population of the state; and, 3) Compare the results with those of other surveys related to provider delivered CAM therapies. Exploration of provider delivered CAM use in Hawai'i was thought to be of particular significance because of the concentration of CAM schools in the state, legislation favorable to provider delivered CAM, and the high concentration of immigrants who were thought to use provider delivered CAM. The investigation's focus was limited to provider delivered therapies, which require provider training or licensure, to assure some consistency in type of therapy used.

The National Institute of Health (NIH) has categorized complementary and alternative medicine into five areas.[12] This investigation explored provider delivered therapies within four of these five areas. **Alternative therapies** are complete systems of theory and practice that include entities such as homeopathic and naturopathic medicine. Questions on this survey explored the use of Ayruveda, Naturopathy and Curanderismo. **Mind-body interventions** attempt to increase the mind's capacity to affect bodily function and systems and include hypnosis and meditation. **Biologically based therapies** use substances found in nature for therapy, such as dietary supplements. These therapies were not explored in this investigation. **Manipulative and body-based methods** are based on manipulation

and/or movement of one or more parts of the body and include chiropractry, chelation, and massage. Finally, **energy therapies** are of two types. Biofield therapies are intended to affect energy fields that surround and penetrate the human body and include Reiki, Acupuncture and Biofeedback. Bioelectromagnetic therapies involve an unconventional use of electromagnetic fields such as pulse and magnetic fields.

Several national surveys conducted in the United States (U.S.), United Kingdom and Canada reveal that CAM use is steadily increasing. [1-11, 13] In 2002, 62% of adults in the United States were reported to have used CAM (including prayer for health) within the past 12 months, while 75% of adults reported CAM (including prayer for health) in their lifetime.[12] The reported use of CAM has grown steadily since the 1950s.

Significantly, analysis of a pre-baby boom cohort showed 3 of 10 used CAM by 30 years of age, compared with 7 of 10 in a post-baby boom cohort.[14-15] In another study in Canada and the United States, chiropractry was the most frequently used CAM therapy in both countries; use in Canada was three times higher than in the United States. A survey in London revealed that CAM may be replacing conventional medicine in some cases, causing patients to decrease their use of conventional medicine.[16] The lack of data on safety and efficacy of many CAM therapies gives rise to concern and necessitates further research on CAM.

Certain CAM therapies are more utilized than others. For example, a United States national survey reported that 43% of adults used prayer intended to improve their own health, 24.4% used prayer intended to improve another's health, 18.9% used natural products, 11.6% used deep breathing exercises, 9.6% used a prayer group, 7.5% used chiropractry, 5.1% used yoga, 5.0% used massage, and 3.5% used diet-based therapy.[13] Of the 10 most commonly used therapies, most were mind-body therapies. The same survey found that CAM was most often used to treat back pain and problems, head and chest colds, neck pain and stiffness, anxiety and depression.[13]

Many investigators suggest the reason for CAM use is dissatisfaction with conventional medicine. In one study, 28% of CAM users report having the belief that conventional medicine would not help resolve their health problem, while another study found that negative attitudes toward conventional medicine were not associated with use of CAM.[13,15] In a national survey, 79% of CAM users stated that using both CAM and conventional therapies was better than using either one alone.[16] In another study, patients with more favorable attitudes toward self-directed treatment and active behavioral involvement were somewhat more likely to choose chiropractic physicians.[17] CAM use also may result from an enthusiastic approach to exploring therapies that will reduce the unpleasant effects of disease.[18] One survey found that 54.9% of adults used CAM because they thought it would be interesting to try.

Factors have been identified that are associated with increased CAM use. In the latest national study, women were found to be more likely to use CAM, with the largest differential occurring in relationship to mind-body therapies. Excluding prayer in the same study, the youngest and oldest respondents reported the least use of CAM.[2] Another study found factors associated with frequent use of CAM included full or partial insurance coverage (as opposed to no coverage) and using CAM therapy for wellness, back pain, or neck pain.[19] A national survey found that users of both CAM and conventional medicine were more likely to be women, white, more educated, and live in the West. The same survey found that CAM users, when compared with non-users, were more likely to have poorer physical health.[20] Another study found that people with diabetes, cancer, or back or neck problems were more likely to see a CAM provider. The US Centers for Disease Control and Prevention reported that 29% of adults used CAM in 1999, with 10% consuming herbal medicine. Women, people with higher levels of education and income, and patients with chronic illnesses used CAM most often.

Most current data are limited to the general US population, but some study on CAM use has been conducted within racial and ethnic minority groups. In the latest national survey, adult African Americans were found to be more likely to use mind-body therapies, including prayer (68.3%), compared to adult Caucasians (50.1%) and Asians (48.1%). Adult Asians were found more likely to use CAM, excluding megavitamin therapy and prayer (43.1%) compared with adult Caucasians (35.9%) and African Americans (26.2%). Adult Caucasians were found more likely to use manipulative and body-based therapy (12.0%) compared with adult Asians (7.0%) and African-Americans (4.4%).[13] Another study reported only 3-9% of visits to CAM practitioners were by non-African Americans.[13] Finally, a pilot study found that African American women were less likely to see a chiropractor than Hispanic or Caucasian women.[21]

Despite studies assessing association of CAM with various factors and prevalence in countries such as the United States, United Kingdom, and Canada, little data exist regarding CAM use within Asian and Pacific Islander populations. One of the few studies assessing CAM use in Hawai'i assessed cancer patients; 36% of participants had used CAM, most frequently religious or spiritual therapy. The same study found that CAM users tend to be younger, women, Catholic, and more educated.[22] It also was reported that CAM users appear to report more symptoms and function less well emotionally than nonusers.[13] Ethnic differences in CAM users with cancer were assessed, and Japanese participants were found less likely to use CAM than other ethnic groups.[23,24]

The goal of this study was to establish the prevalence of provider delivered CAM use in the general population of Hawai'i. We also sought to identify demographic factors associated with the frequency of provider delivered CAM use. The investigation was undertaken to test the hypothesis that a significant difference existed in the use of provider delivered CAM in Hawai'i because of the cultural diversity prevalent within the population. The results were then compared with findings from past national surveys that contained information related to provider delivered CAM from the United States, United Kingdom, and Canada. [1-12]

There is increasing evidence that provider delivered CAM therapies may be effective for specific conditions.[20] However use of untested provider delivered CAM modalities may have negative consequences, such as the use of ephedra. Provider delivered CAM users document that they do not share information about their use of CAM with conventional providers. Thus, information about provider delivered CAM use in ethnically diverse populations is urgently needed.

Methods

Data Source

The data were collected using the Hawaii Health Survey (HHS).[25] This survey was developed by the Hawaii State Department of Health (DOH) to provide estimates describing current health status, access to and utilization of health care, and distribution of the population by age, sex, and ethnicity. The survey is administered by the Hawaii State Department of Health Office of Health Status Monitoring (OHSM), and has been conducted by SMS Research & Marketing Services, Inc. since 1995. SMS performs survey design, instrumentation, sampling, data collection, and processing. The analyses reported in this study reflect data collected for the year 2003. All estimates of percentages and frequencies and associated standard errors shown in this paper were generated with SUDANN, a software package designed to account for a complex sample design such as that used by the HHS.[26] The sample population is adjusted to accurately represent people in all four counties of Hawai'i, and to statistically reflect the population of Hawai'i. Though the survey population does not include those who are homeless or without a working phone, the use of census estimates of those without telephone service and the Hawai'i Homeless Study 2003 were used to interpret the results.

The estimates reported in this paper included age groups 18-24 years, 25-44 years, 45-64 years, and 65 years and over, unless otherwise noted. This allowed for comparisons with the NHIS.

Strengths and Limitations of the Data

A major strength of the data on provider delivered CAM in the HHS is that they were collected for a representative sample of the state's population. The HHS, a telephone survey, is conducted among 5,000 stratified, randomly selected households representing each of the Hawaiian Islands. The targeted population consists of more than 1.2 million civilian non-institutionalized adults residing in about 410,000 households. Residents of long-term care institutions and correctional facilities were excluded. The sample is selected each year based on a multistage cluster sample design. All questions are asked regardless of gender, despite the fact that 65% to 70% of respondents were women. The large sample facilitated investigation of other self-reported health characteristics reported on the HHS such as health behaviors, chronic conditions, injury episodes, access to care and medical insurance coverage.

The HHS has been expanded in length and content over the years to accommodate different clients, including the DOH Family Health Division, Papa Ola Lokahi, the DOH Mental Health Division, the University of Hawai'i John A. Burns School of Medicine, Queen's Health Systems, Kamehameha Schools, and others. The survey has been specifically modified to assess provider delivered CAM use among Asian Americans, Native Hawaiians, and other Pacific Islander populations in Hawai'i.[26]

The provider delivered CAM questions have several limitations. First, they are dependent on the respondents' knowledge of provider delivered CAM therapies. Second, collection of data at only two points results in an inability to produce changes that can be tracked over time, and reduces reliable estimates for provider delivered CAM use for small populations subgroups. Nevertheless, these data for the two consecutive years were consistent.

Results

Use of Provider Delivered CAM

Overall, 49.9% of adults in Hawai'i were found to use provider delivered CAM services. While the NHIS data reveal that 75% of respondents used CAM for health reasons, if this estimate is corrected for prayer use, only 25% of national respondents had used provider delivered CAM therapies. Thus, the rate of provider delivered CAM in Hawai'i is significantly higher than that reported in the NHIS. Massage therapy was the most used service (31.7%), followed by chiropractry (30.4%) and acupuncture (16.2%). Table 1, below, compares these data with the most recent national data that relates to provider delivered CAM therapies.

Table 1— Comparison of provider delivered CAM use in adults over 18 by type of therapy between Hawai'i (2003) and the United States (US) 2002

Therapy	Rate of Use in Hawai'i	Rate of Use in US
Acupuncture	16.2%	4.0%
Ayruveda	1.7%	4.0%
Biofeedback	4.3%	1.0%
Chelation	1.4%	0.1%
Chiropracty	30.4%	19.9%
Curanderismo	2.8%	1.8%
Energy Healing	6.8%	1.1%
Hypnosis	5.8%	1.8%
Massage	31.7%	9.3%
Naturopathy	10.6%	0.9%

As shown above, with the exception of Ayruveda, use of provider delivered CAM services in Hawai'i is significantly higher than rates reported in the mainland U.S. The island of Maui had the highest proportion (58.7%) of residents who had used provider delivered CAM services. Those of 1% to 24% Native Hawaiian ancestry used the highest proportion of any alternative health care services (59.9%).

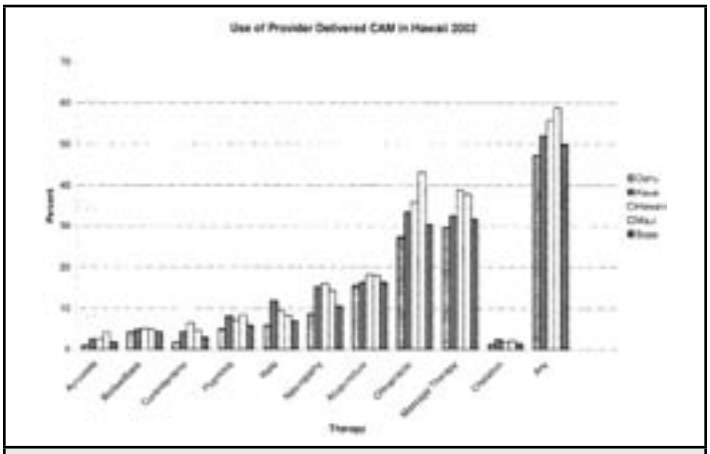

Figure 1.— Use of Provider Delivered CAM in Hawai'i 2002

Table 2a.— PREVALENCE OF ALTERNATIVE HEALTH CARE SERVICES USE

DEMOGRAPHICS		Acupuncture	Ayurveda	Biofeedback	Chelation	Chiropractic	Reiki	Curanderismo	Hypnosis	Massage Therapy	Naturopathy	Any One
		Col%	Col%	Col%	Col%	Col%	Col%	Col%	Col%	Col%	Col%	Col%
Poverty Status		9.5	7.5	11.2	14.1	10.2	10.7	16.3	13.6	10.3	7.6	10.2
0 to 100%												
100 to 185%	%	15.4	8.4	11.9	20.2	15.5	14.3	12	13.6	13.7	16.2	14.7
185 to 200%	%	1.7	4.1	0.4	--	1.4	1.8	9.4	3.2	2.6	2.5	2.1
over 200%	%	73.5	80.1	76.5	65.7	72.9	73.1	62.4	69.5	73.4	73.7	73
TOTAL	%	100	100	100	100	100	100	100	100	100	100	100
No. of persons employed	%	30	20.3	27.9	38.3	23.5	25.5	32.1	27.8	22.8	24.2	24.6
0												
1	%	33.8	43.6	37.9	27.4	36	30	34.3	30.3	35.3	36.6	35.1
2	%	29.5	35.4	32.1	33	32.3	39.3	28.4	36.4	33.6	32.2	31.7
3	%	5.7	0.6	1.8	1.2	6.4	4.3	4.6	4.1	6.3	5.2	6.6
4	%	0.4	--	0.3	--	1.2	0.9	0.6	1.4	1.4	1.3	1.2
5 or more	%	0.7	--	--	--	0.7	--	--	--	0.6	0.5	0.8
TOTAL	%	100	100	100	100	100	100	100	100	100	100	100
High cholesterol?	%	28.76	15.29	35.37	32.71	26.02	25.2	30.3	24.35	24.2	27.82	26.34
Yes												
No	%	71.24	84.71	64.63	67.29	73.98	74.8	69.7	75.65	75.8	72.18	73.66
TOTAL	%	100	100	100	100	100	100	100	100	100	100	100
Has asthma?	%	9.33	10.14	15.93	5.62	9.37	11.84	20.68	15.32	8.69	11.34	9
Yes												
No	%	90.67	89.86	84.07	94.38	90.63	88.16	79.32	84.68	91.31	88.66	91
TOTAL	%	100	100	100	100	100	100	100	100	100	100	100
Has hypertension?	%	26.95	7.46	32.93	33.6	23.31	23.49	24.05	20.36	21.84	21.77	24.59
Yes												
No	%	73.05	92.54	67.07	66.4	76.69	76.51	75.95	79.64	78.16	78.23	75.41
TOTAL	%	100	100	100	100	100	100	100	100	100	100	100
Has diabetes?	%	9.79	1.16	4.51	11.65	6.28	7.43	9.26	4.73	6.35	6.34	6.8
Yes												
No	%	90.21	98.84	95.49	88.35	93.72	92.57	90.74	95.27	93.65	93.66	93.2
TOTAL	%	100	100	100	100	100	100	100	100	100	100	100
Has arthritis?	%	21.86	18.93	27.3	9.64	18.88	21.06	23.49	15.13	17.52	16.47	16.93
Yes												
No	%	78.14	81.07	72.7	90.36	81.12	78.94	76.51	84.87	82.48	83.53	83.07
TOTAL	%	100	100	100	100	100	100	100	100	100	100	100
Smoke Cigarette?	%	15.58	20.85	17.02	5.55	15.29	14.82	16.58	19.25	15.75	16.95	15.42
Yes												
No	%	84.42	79.15	82.98	94.45	84.71	85.18	83.42	80.75	84.25	83.05	84.58
TOTAL	%	100	100	100	100	100	100	100	100	100	100	100
Smoking inside home	%	12.63	19.96	18.33	5.7	12.26	7.85	16.62	13.23	12.3	11.22	12.31
Yes												
No	%	87.37	80.04	81.67	94.3	87.74	92.15	83.38	86.77	87.7	88.78	87.69
TOTAL	%	100	100	100	100	100	100	100	100	100	100	100
Limited activity: move table, etc.	%	10.03	4.06	17.15	15.44	7.48	9.65	13.92	7.32	7.75	8.49	6.99
Yes, limited a lot												
Yes, limited a little	%	7.24	3.25	12.1	10.92	6.1	8.01	7.62	11.37	6.81	6.1	6.8
No, not limited at all	%	82.12	92.42	70.64	73.32	86.07	80.85	78.46	81.24	85.11	85.32	86
DK/NOT SURE	%	0.62	0.26	0.1	0.32	0.35	1.5	----	0.08	0.33	0.09	0.21
TOTAL	%	100	100	100	100	100	100	100	100	100	100	100
Limited activity: Climb stairs	%	6.98	2.15	14.17	16.22	5.74	8.73	8.84	4.24	5.39	5.61	5.35
Yes, limited a lot												
Yes, limited a little	%	10.22	3.22	12.22	6.65	7.39	7.15	10.8	11.84	7.56	6.59	7.59
No, not limited at all	%	82.62	94.37	73.31	76.81	86.59	83.4	80.36	83.75	86.93	87.73	86.77
DK/NOT SURE	%	0.17	0.26	0.29	0.32	0.23	0.71	----	0.17	0.12	0.07	0.27
REFUSED	%	----	----	----	----	0.05	----	----	----	----	----	0.03
TOTAL	%	100	100	100	100	100	100	100	100	100	100	100
Accomplish less due to physical health	%	22.35	22.17	33.65	32.33	19.54	26.68	39.59	19.56	19.24	21.38	18.36
Yes												
No	%	77.43	77.5	66.01	66.35	80.02	72.46	60.2	80.26	80.36	78.28	81.21
Dont know/Not sure	%	0.22	0.34	0.34	1.32	0.44	0.86	0.21	0.18	0.4	0.34	0.43
TOTAL	%	100	100	100	100	100	100	100	100	100	100	100
Limited work due to physical health	%	22.93	21.69	32.61	31.23	18.56	25.14	35.2	20.08	18.89	20.35	18.24
Yes												
No	%	76.57	77.97	67.39	67.86	81.21	73.85	62.45	78.91	80.76	78.73	81.43
Dont know/Not sure	%	0.49	0.34	----	0.91	0.24	1	2.36	1.01	0.35	0.93	0.33
TOTAL	%	100	100	100	100	100	100	100	100	100	100	100
Accomplish less due to emotional health	%	9.3	9.33	13.29	7.96	9.52	10.32	14.84	12.56	9.54	7.95	9.04
Yes												
No	%	90.6	89.96	86.33	90.81	90.34	89.5	84.56	87.15	90.32	91.78	90.84
Dont know/Not sure	%	0.1	0.7	0.39	1.23	0.14	0.18	0.6	0.29	0.14	0.28	0.12
TOTAL	%	100	100	100	100	100	100	100	100	100	100	100
Limited work due to emotional health	%	8.16	8.67	12.86	6.51	7.75	8.43	15.5	12.15	8.88	7.5	7.91
Yes	%											
No	%	91.3	91.16	85.91	92.37	91.72	90.95	84.31	87.7	90.74	91.87	91.66
Dont know/Not sure	%	0.54	0.17	1.22	1.12	0.53	0.63	0.19	0.15	0.38	0.62	0.42
TOTAL	%	100	100	100	100	100	100	100	100	100	100	100
MD seen most often		76.8	58.1	79.9	86.7	75	74.9	71.7	77.2	73.2	72.1	74.6
Yes												
No	%	23.1	41.9	20.1	13.3	24.7	24.9	28.3	22.6	26.4	27.8	25.1
DK/NOT SURE	%	0.1	--	--	--	0.3	0.2	--	0.2	0.4	0.1	0.4
TOTAL	%	100	100	100	100	100	100	100	100	100	100	100
Any HH member admitted as in-patient	%	34.7	39.1	48.7	50.2	39.9	35.8	42.4	39.5	38	39.9	38
Yes												
No	%	63.7	60.9	50.1	46	58.9	62.9	54.8	60.2	60.7	59.2	60.7

Can't Remember	%	1.6	--	1.2	3.8	1.2	1.3	2.8	0.3	1.3	0.9	1.3
REFUSED	%	--	--	--	--	0	--	--	--	0	0	0
TOTAL	%	100	100	100	100	100	100	100	100	100	100	100
Referred to a medical specialist	%	52.2	46	61.6	57.1	50.7	54.3	54	47.4	50.9	53.9	47.6
Yes												
No	%	47	54	38.2	42.9	48.7	44.7	45.8	52.5	48.9	45.7	51.9
Can't Remember	%	0.3	--	0.1	--	0.2	1	--	0.2	0.2	0.3	0.3
REFUSED	%	0.5	--	0.1	--	0.3	--	0.2	--	0	0.1	0.2
TOTAL	%	100	100	100	100	100	100	100	100	100	100	100
Went to ER or urgent care center in past year	%	19.8	22.3	28.6	19.7	18.5	21.2	21.9	18.8	17.8	19.3	17.3
Yes												
No	%	80.2	77.7	71.4	80.3	81.5	78.8	78.1	81.2	82.2	80.7	82.7
TOTAL	%	100	100	100	100	100	100	100	100	100	100	100
When was the last physical exam	%	72.7	75.7	80	78.2	74	78.1	71.7	76.5	72.9	70.9	73.1
Less than 2 yrs ago												
More than 2 yrs ago	%	27.3	24.3	20	21.8	26	21.9	28.3	23.5	27.1	29.1	26.9
TOTAL	%	100	100	100	100	100	100	100	100	100	100	100
Doctor prescribed medication for condition that lasted more than a year	%	43.8	29.4	48.7	50.9	36.7	44.4	46	38.7	35.4	37.7	36.2
Yes												
No	%	55.3	70	50	49.1	62.6	54.5	53.6	60.2	64.3	62.2	63.4
Can't Remember	%	0.9	0.6	1.3	--	0.6	1.1	0.3	1.1	0.3	0.1	0.4
REFUSED	%	--	--	--	--	0	--	--	--	0	0	0
TOTAL	%	100	100	100	100	100	100	100	100	100	100	100
Doctor prescribed medication for short-term condition	%	29.8	25	26.6	29.7	29.4	31.1	46.4	28.6	31.4	29.2	30.1
Yes												
No	%	69.5	75	72.1	70.3	69.8	68.9	53.4	70.3	68.2	70.7	69.3
Can't Remember	%	0.7	--	1.3	--	0.7	0	0.1	1.1	0.4	0.1	0.6
REFUSED	%	--	--	--	--	0	--	--	--	0	0	0
TOTAL	%	100	100	100	100	100	100	100	100	100	100	100
# of times filled medical prescriptions	%	85	83.7	93.1	94.3	83.1	76.3	79.5	83.5	79.5	80.3	82.9
every time												
most of the time	%	10.9	9.3	5.2	3.8	11.4	18.8	14.6	13.5	12.8	16.4	11.4
missed few times	%	1.1	3.8	0.7	0.8	1.5	1	1.9	2.3	2	1.4	1.6
not too often	%	2	1.7	0.4	0.3	1.6	3.1	3.1	0.1	2.7	1	1.8
never	%	0.9	1.6	0.6	0.8	1.1	0.4	0.9	0.6	1.8	0.7	1.5
Can't remember	%	0.1	---	---	---	1.2	0.4	---	---	1.2	0.3	0.8
Refused	%	0.1	---	---	---	0.1	---	---	---	0	---	0.1
Total	%	100	100	100	100	100	100	100	100	100	100	100
Use Native Hawaiian Health Care System?		6.7	3.4	1.2	10.3	11.9	11	10.2	11.2	12.5	11.7	8.9
1	%											
2	%	93.3	96.6	98.8	89.7	88.1	89	89.8	88.8	87.5	88.3	91.1
Total	%	100	100	100	100	100	100	100	100	100	100	100
Lomilomi												
1	%	31.1	40.6	31.1	29	24.1	49.1	55.2	28.5	28.7	39.8	23.4
2	%	68.5	59.2	68.6	70	75.7	50.7	44	71.2	70.6	60.1	76.2
3	%	0.5	0.2	0.3	1	0.1	0.2	0.9	0.2	0.7	0	0.4
Total	%	100	100	100	100	100	100	100	100	100	100	100
Ho'oponopono		9.1	16.6	13.2	12.3	6.2	14.2	22.1	7.7	6.9	11.6	6.2
1	%											
2	%	90.3	82.9	86.1	86.3	93.3	84.5	74.1	89.7	92.1	87.5	93.1
3	%	0.6	0.5	0.7	1.4	0.4	1.3	3.7	2.5	0.9	0.9	0.7
Total	%	100	100	100	100	100	100	100	100	100	100	100
La'au Lapa'au		11.1	14.5	9.9	15	7.6	15	26	9.7	7.8	17.5	6.8
1	%											
2	%	87.7	85.5	89.7	84	91.8	84.7	72.9	90.1	91.3	82.3	92.5
3	%	1.3	--	0.5	1	0.6	0.3	1.1	0.2	0.9	0.2	0.7
Total	%	100	100	100	100	100	100	100	100	100	100	100
Used Other traditional Hawaiian health practice		4.2	10.1	7.3	12.3	3.7	7.1	21.3	4.5	4.8	5.2	3.8
1	%											
2	%	95.6	89.7	92.3	86.5	96.2	92.6	77.6	95.3	95.1	94.7	96.1
3	%	0.2	0.2	0.4	1.2	0.1	0.3	1	0.3	0.1	0.2	0.1
Total	%	100	100	100	100	100	100	100	100	100	100	100

Table 2b.— PREVALENCE OF ALTERNATIVE HEALTH CARE SERVICES USE

		Any Medical Service	Acupuncture	Ayurveda	Biofeedback	Chelation	Chiropractic	Reiki	Curanderismo	Hypnosis	Massage Therapy	Naturopathy
		Row %	Row %	Row %	Row %	Row %	Row %	Row %	Row %	Row %	Row %	Row %
Ethnicity		60	21.6	3.6	7.6	2	39.2	9.4	4.7	9	40.1	16.3
White						%						
Black/ African American	%	35.5	11.3	--	2.3	--	20.9	0.5	1.4	0.8	24.8	5.3
Japanese	%	44	14.6	0.1	3.2	1.6	24.5	6.2	1.2	3.3	25.9	6.3
Chinese	%	50.5	19.5	--	3.1	1.9	20.3	2.9	0.9	0.8	26.5	10.7
Filipino	%	37.1	5.1	0.5	0.9	0.8	21.4	3.6	0.3	2.4	24.1	7.3
Korean	%	56.6	18.5	--	--	--	36.6	10.8	--	8.8	43.4	--
Samoan/Tongan	%	45	19	--	--	--	26.3	--	--	--	31.8	--
Other One Ethnicity	%	39.6	15.4	0.4	2.7	0.2	26.7	2.4	1.7	9	19.6	7.8
Mixed (except Hawaiian)	%	50.7	15.8	2.1	3.8	2.1	29.3	8.3	4.5	6.5	32	8.3
Hawaiian/Part Hawaiian	%	47.7	14	1.5	3.1	0.4	31.4	6.7	2.5	6.2	31.1	10.5
Don't know/Refused	%	55.4	25.8	1.5	6.8	1.3	37.8	2.8	4.4	2.4	36.1	6.6
Group Total	%	49.9	16.2	1.7	4.3	1.4	30.4	6.8	2.8	5.8	31.7	10.6
Anyone active in military service	%	37.6	5.1	--	1.4	1.4	21.4	3.6	0.5	4	21.6	9.7
Yes												
No	%	50.9	17.1	1.8	4.6	1.4	31.2	7.1	3	5.9	32.6	10.7
Group Total	%	49.9	16.2	1.7	4.3	1.4	30.4	6.8	2.8	5.8	31.7	10.6
Years in Hawaii		50.1	14.1	2.7	4.8	2.4	28.9	7.5	4.2	7.3	35.8	13.2
10 or less												
11 to 20	%	53.4	19.3	3.1	5.9	1.5	33.9	8.6	4.5	7.8	35	12.8
More than 20, not lifetime	%	50.9	21.5	1.8	4.9	0.7	31.8	6.3	3.5	5.3	32	10
Lifetime	%	48.3	13.7	0.7	3.4	1.3	29.6	6.3	1.2	4.6	28.6	9
No Data	%	30.2	0.8	--	--	--	13.7	--	--	16.5	30.2	--
Group Total	%	49.9	16.2	1.7	4.3	1.4	30.4	6.8	2.8	5.8	31.7	10.6
Highest Degree completed	%	48.5	11.2	0.6	1.3	0.8	31.7	3.1	1.2	3.9	31.3	5.7
Some high school												
High School Graduate	%	45	13.1	0.6	3.1	1.3	30.7	5	1.1	4.3	25.6	6.8
Some college or Associate degree	%	48.9	13.1	0.8	2.9	1.1	29.2	6.4	3.1	5.1	32	12.4
Baccalaureate degree or more	%	54.8	21.4	3.4	6.8	1.8	30.9	9.1	4.1	7.8	36.7	13.2
No data	%	28.1	21.4	--	--	--	24.3	--	--	--	8.7	--
Group Total	%	49.9	16.2	1.7	4.3	1.4	30.4	6.8	2.8	5.8	31.7	10.6
No. of persons employed	%	20.7	1.5	5.1	2.3	30.4	7.4	3.8	6.8	30.6	10.8	51.9
None	%											
One or two	%	15.5	2	4.6	1.3	31.4	7.1	2.6	5.8	33	10.9	50.2
three or four	%	10.9	0.1	1	0.2	25.3	3.9	1.6	3.5	27	7.6	42.8
5 or more	%	10.3	--	--	--	19.3	--	--	--	19.8	4.9	39.8
Group Total	%	16.3	1.7	4.3	1.4	30.4	6.8	2.8	5.8	31.7	10.5	49.8
Household Income		49.1	17.3	1.3	4.7	2.2	30.4	8	3.6	7	30.6	10.6
less than $25,000												
$25,000 to $49,000	%	47.3	16.1	1.6	3.2	1.3	28.8	3.9	2.4	5.6	29.4	9.9
$50,000 to $74,000	%	54.1	14.9	1.4	4.4	1.2	34.7	7.6	3.3	5.6	34.2	11.7
$75,000 or more	%	49	16.8	2.2	4.9	1.2	28.5	7.7	2.1	5.2	32.4	10.1
Group Total	%	49.8	16.3	1.7	4.3	1.4	30.4	6.8	2.8	5.8	31.7	10.5
Household size	%	54.7	22.2	2.2	6.6	2	34.1	8.6	3.5	7.5	34.8	13.5
one or two												
three	%	50.1	11.9	2	2.3	0.9	29.2	6	2.6	4.9	32.8	9.2
four	%	45.3	11.5	1.3	3	0.9	26.6	5.1	1.3	4.9	28.5	5.4
five	%	42.1	9.1	0.3	2.1	1.2	28.2	4.5	3	4.4	27.4	10.5
six or more	%	38.8	10	0.2	0.9	0.4	22.3	4.2	1.4	1.3	23.2	7
Group Total	%	49.8	16.3	1.7	4.3	1.4	30.4	6.8	2.8	5.8	31.7	10.5
Poverty Status	%	47.3	14.4	1.1	4.5	1.7	28.7	6.8	4.1	7.2	30.3	7.3
less than 100%												
100 to 199%	%	46.4	15.4	1.2	3	1.6	28.6	6.1	3.3	5.5	28.7	11
200 to 399%	%	49.2	15	1.2	3.9	1.3	30.6	5.4	2.4	4.9	30	11.3
400 to 599%	%	49.6	16	2.2	4.3	1.1	30.4	7.2	2.2	6.4	33.7	9
600% or more	%	56.3	21	3	6.6	1.6	33.2	9.8	2.8	6.1	37	12.3
Group Total	%	49.8	16.3	1.7	4.3	1.4	30.4	6.8	2.8	5.8	31.7	10.5
Health insurance status	%	49.6	16.3	1.6	4.1	1.4	30.4	6.7	2.6	5.5	31.4	10.4
Has Health insurance												
No Health insurance	%	53.7	16.9	3.2	5.8	0.7	32.3	9.2	5	9.6	36.5	13.6
DK/NS	%	39.3	16.2	1.3	19.6	20.9	25.1	1	1.3	1.3	26.5	2.3
REFUSED	%	40.3	5.4	3.6	5.9	3.1	23.5	4.3	2.1	7.6	30.2	4.7
Group Total	%	49.8	16.3	1.7	4.3	1.4	30.4	6.8	2.8	5.8	31.7	10.5
General health status	%	47.9	15.6	2.1	4.3	1.1	28.9	7.2	3.1	5.2	34.3	11.2
Excellent												
Very Good	%	50.8	16.6	2.2	2.8	1.3	30.9	6.2	2.1	5.2	31.1	11.8
Good	%	47	14.4	1.1	4.5	1.6	28.8	6.2	2.4	5.9	28.7	7.7
Fair	%	56	19.2	1.1	6.7	1.6	35.6	7.4	4	7.7	33.2	11.9
Poor	%	60.4	25.6	1.2	9.1	2.4	35.3	13.1	6	8	44.7	16.8
DON'T KNOW	%	14.6	12.6	2.1	4.1	--	9.1	6.5	--	--	11.2	6.5
Body Mass Index	%	49.3	15.2	3.6	3.2	0.8	31	11	2.4	3.4	29.8	11.4
underweight												
normal	%	48.5	16.6	2.2	4.6	1.6	29.7	6.6	2.6	5.7	31.4	11.5
over weight	%	51.4	14.7	1.2	3.6	1.5	31.4	6.2	2.9	6.1	31.4	10.2
obese	%	50	18.4	1	5.2	1	30.5	7.3	2.9	5.8	33.6	8.9
Has arthritis?	%	62.1	26.1	2.4	8.6	1	41.9	10.5	4.7	6.5	41.2	12.7
Yes	%											
No	%	47.9	14.7	1.6	3.6	1.5	28.7	6.2	2.5	5.7	30.3	10.2
Limited activity:move table, etc.	%	65.6	30	1.3	13.6	4	43.2	11.9	7	7.9	45.3	16.5
Yes, limited a lot												
Yes, limited a little	%	49.1	17	0.8	7.9	2.2	27	8.1	2.9	9.2	31.5	9.1
No, not limited at all	%	48.9	15.3	1.8	3.5	1.2	29.9	6.3	2.5	5.4	30.9	10.3
DK/NOT SURE	%	73.4	70.2	3.1	3.1	3.1	73.4	70.2	--	3.1	73.4	6.4
Limited activity: Climb stairs	%	68.2	28.6	0.9	14.9	5.6	45.6	14.3	5.9	6.1	41.8	14.5
Yes, limited a lot												
Yes, limited a little	%	55	24.5	0.8	7.7	1.4	32.7	7	4.3	10.1	35	10.1
No, not limited at all	%	48.6	15.1	1.8	3.6	1.2	29.6	6.4	2.5	5.4	31.1	10.4
DK/NOT SURE	%	34.9	7.4	1.2	3.3	1.2	18.6	12.6	--	2.6	10.2	2
REFUSED	%	100	--	--	--	--	100	--	--	--	--	--
Accomplish less due to physical health	%	62.5	24.6	2.5	10	3	41	12.2	7.2	7.7	41.4	15.4

Yes												
No	%	47.6	14.8	1.5	3.3	1.1	28.6	5.8	2	5.5	30.1	9.7
DK/NOT SURE	%	52.7	8.9	1.4	3.6	4.6	33.2	14.3	1.4	2.6	31.6	8.9
Limited work due to physical health	%	63.8	25.9	2.5	10	3	39.7	11.9	6.6	8.1	41.8	14.8
Yes												
No	%	47.4	14.6	1.5	3.4	1.1	28.9	5.9	2	5.3	30	9.7
DK/NOT SURE	%	69.3	33.8	2.4	--	5.4	29.9	28.3	27.1	24.7	46.2	41.4
Accomplish less due to emotional health	%	59.3	19.6	2.1	7.4	1.5	38.5	8.9	5.2	9.4	39.2	10.9
Yes												
No	%	49.1	16	1.7	4.1	1.4	29.8	6.6	2.5	5.5	31.2	10.5
DK/NOT SURE	%	23.3	6.3	4.6	6.5	6.7	16.1	4.6	6.3	6.5	17.1	11.3
Limited work due to emotional health	%	60.8	20.9	2.3	8.5	1.4	36.5	8.7	6.5	10.8	43.2	12.2
Yes												
No	%	49	15.9	1.7	4	1.4	30	6.6	2.5	5.4	30.9	10.4
DK/NOT SURE	%	57.6	24.2	0.8	14.5	4.3	43.5	11.5	1.4	2.4	33.1	18
Pain interferes with normal work	%	44.8	13.5	1.6	3.1	1.2	26.5	5.8	2	5	27.5	8.6
Not at all												
A little bit	%	55.4	18.6	1.7	4.2	1.7	33.9	6.8	3.5	5.6	34.2	12.9
Moderately	%	61.3	21.4	2.1	10	1.4	42.3	10.3	3	12.1	45.2	17.5
Quite a bit	%	74	28.6	3	10.4	2.3	49.5	15.9	8.9	6.3	49.8	13.8
Extremely	%	78.3	42.4	2.4	13.3	2.7	52.1	11.8	8.7	10.1	66.6	22.7
Felt peaceful and calm	%	46.6	15	1.6	3.6	1.2	28	6	2.4	5.1	29.3	9.2
All or most of the time												
Some of the time	%	54.8	18.7	1.9	5.7	1.6	33.7	8.3	3.5	5.7	36.9	13.9
little or none	%	63.5	20.7	1.8	6.6	2.5	42.1	9.5	3.6	11.2	39.3	13
not sure, refused	%	46.2	9.1	0.7	0.7	--	34.3	1.7	1	18.2	17.9	2.8
Had lot of Energy	%	46.6	14.8	1.7	3.3	1.1	28	6.3	2.4	4.8	30.1	9.4
All or most of the time												
Some of the time	%	54.1	16.9	1.7	5.4	2	33.9	6.8	3.2	6.6	33.6	12.6
little or none	%	62.2	27.4	1.4	9.1	2.2	38.9	11.8	4.6	10.7	39.3	13.3
not sure, refused	%	43.4	11.2	--	8.4	--	30.6	0.7	0.4	8.4	33.2	0.4
Felt down-hearted and blue	%	46.5	18.9	0.2	2.6	2.3	26.2	7.3	3.5	5.7	34.1	7.7
All or most of the time												
Some of the time	%	60.5	21.5	1.8	6	1.8	34.4	8	4.3	6.3	39	12
little or none	%	48.1	15.4	1.7	4.1	1.2	30	6.6	2.5	5.6	30.5	10.4
not sure, refused	%	83.7	3.7	--	--	29	19.2	--	4.7	31.2	49	4.8
Problems interfere with social activities	%	55.1	17.9	1.1	8.2	2.3	33.1	11.3	6.6	6.5	35.7	13
All or most of the time												
Some of the time	%	66.1	22.7	2.8	6.4	2.4	39	11.5	6.2	8.5	45.1	14.8
little or none	%	48.1	15.5	1.6	4	1.2	29.6	6.2	2.2	5.4	30.3	10.1
not sure, refused	%	50	23.2	--	--	12.2	18.6	8.9	8.9	18.4	31.7	1.1

Relationship of Provider Delivered CAM and Demographic Characteristics

Provider delivered CAM use also was analyzed according to **age**. Massage therapy is used by approximately 30% of those between 35 to 54 years and 22.9% of those 75 or older. Those >45 years of age or older had the highest proportion of overall provider delivered CAM use (54.9%).

As for **gender**, female and male use was comparable (51.2% and 48.4%, respectively). Massage was the provider delivered CAM therapy used most by both men (30.4%) and women (33.0%).

Provider delivered CAM use also was assessed in relation to **marital status,** and **households with children**. Married people used provider delivered CAM more frequently than unmarried couples, widows, or those who were divorced, separated, or never married. Massage therapy was used most among those who were married (30.5%). Chiropractry was used most among those who were separated, widowed, or divorced (38.4%). All provider delivered CAM therapies and specifically massage therapy were used most among those with no children under 18 (33.5%).

Use of PDCAM by Selected Characteristics

The use of PDCAM in Hawaii in relationship to selected factors is summarized in Table 2 A and B

PDCAM Use and Military Service

• Massage therapy was the most frequently used service by those who answered "yes" to being active in military service (21.6%).

PDCAM Use and Duration of Time in Hawai'i

• Massage therapy was the most frequently used service among those who had lived in Hawai'i for 10 years or less (35.8%).

• Chiropractry was the most frequently used service (29.6%) among those who had lived in Hawai'i for a lifetime.

• The largest percentage of CAM users had been in Hawai'i for 11 to 20 years

PDCAM Use and Ethnicity

• Massage therapy was the CAM used most frequently by Koreans (43.4%).

• Chiropractry was used most frequently by those who identified their ethnicity as Hawaiian/Part Hawaiian (31.4%).

• Caucasians had the highest percentage of people using any provider delivered CAM therapy (60.0%) and African Americans had the lowest percentage (35.5%).

PDCAM Use and Education

• Chiropracty was used most frequently by those who had some high school or less (31.7%) or were high school graduates (30.7%)

• Those who had a baccalaureate degree or more constituted the highest percentage of people who had used any CAM service (54.8%).

PDCAM use and Economic Status

• Massage therapy was the CAM therapy used most across all income groups, except for those with a household income of $50,000 to $74,999 where was the CAM therapy used most (34.7%).

• The highest proportion of people who had used any type of provider delivered CAM (54.1%) were those with a household income of $50,000 to $74,999.

• Massage therapy was the type of CAM used most frequently across all poverty status levels, with the exception of chiropractry.

• Those 200% to 399% below the poverty level used chiropractry the most frequently (30.6%).

• The majority of CAM users had incomes exceeding 200% of the poverty line.

• Respondents who had one person employed in the household were the majority of users for all alternative health services.

PDCAM Use and Household Size

• Massage therapy was the most used therapy across all household sizes, except those with a household size of five, where chiropractry was the most used service (28.2%).

• The highest proportion of people who had used any CAM service were those with a household size of 1-2 (54.7%) and 3 (50.1%).

• Hypnosis therapy was the most frequently reported CAM service used by respondents living in household with 0 (30.6%), 1-2 (33%), 3-4 (27.0%), and >5 (19.8%) persons employed.

PDCAM Use and Health Insurance

• Massage therapy was the most frequently used CAM service by both people with health insurance (31.4%) and those without health insurance (36.5%).

• The highest portion of people who had used any CAM were people without health insurance (53.7%).

PDCAM Use and Health

• Most CAM users did not have high cholesterol, asthma, diabetes, arthritis, and did not smoke.

• Ayurveda had the highest portion of users who did smoke cigarettes (20.9%) and smoked inside the home (20.0%).

• Most CAM users were active, able to physically accomplish what they wished, and reported emotional health.

• Biofeedback had the highest proportion of users who reported activity limitations (e.g., moving a table) (17.2%) followed by users of chelation (15.4%).

• Massage therapy was the CAM service used most across all general health status and body mass index levels.
• Those with a body mass index indicating that they were overweight used massage and chiropractry the most, at equal rates (31.4%).
• Those reporting a poor health status constituted the highest proportion of people who had used any CAM (60.4%), as did those who had body mass index indicating that they were overweight (51.4%).
• Those with arthritis made up the highest proportion of people who had used any CAM service (62.1%).
• Massage therapy was used most frequently by those who reported limited activity (move a table, etc), accomplished less due to physical health, limited work due to physical health, accomplished less due to emotional health, limited work due to emotional health, had pain interfering with normal work, feeling peaceful and calm, having a lot of energy, feeling down-hearted and blue, and having problems interfering with social activities.
• CAM users saw a physician often (74.6%), did not have any household member admitted as an in-patient (60.7%), did not go to the emergency room (ER) or urgent care center in past year (82.7%),
• Had physical exam less than two years ago (73.1%), did not have a doctor who prescribed medication for a short-term condition (69.3%), and filled medical prescriptions every time (82.9%).
• Did not report being referred to a medical specialist (51.9%). Most users of CAM services did not have a doctor who had prescribed medication for a condition that lasted more than a year (63.4%)

PDCAM Use and Use of Native Hawaiian Healing Practices
• Most users of CAM did not use the Native Hawaiian Health Care system (91.1%), did not use Lomilomi (76.2%), Ho'oponopono (93.1%), La'au Lapa'au (92.5%), or use other traditional Hawaiian health practices (96.1%).

Discussion

There are marked differences in provider delivered CAM use rates in Hawai'i compared to recent data based on the NHIS.[13] In Hawai'i, factors associated with increased use of provider delivered CAM include:

- the majority of CAM users are better educated
- more than 2/3 have incomes exceeding 200% of the poverty line
- the highest percentage of users have either very good (31.6%) or good (29.2) health status
- among respondents with a poor health status, 60.4% have used CAM
- among respondents that are overweight, 51.4% have used CAM
- women (52.1%) use CAM in greater frequency compared with men (47.9%)
- the youngest and oldest respondents have the least use of CAM
- Caucasians have the highest percentage of use of provider delivered CAM therapy (60.0%), while Filipinos have the lowest percentage (37.1%)
- people without health insurance constituted the highest portion of people who have used any CAM (53.7%)
- the highest portion of people who have used any alternative health care service is found among those whose pain extremely interfered with normal work (78.3%)

These findings are not consistent with national data suggesting that additional investigation of ethnic factors associated with CAM use is warranted. The use of provider delivered CAM in Hawaii is significantly greater than CAM use reported on the mainland, and several factors appear to emerge. These factors need further exploration, and the potential health implications and economic consequences of CAM use should be assessed.

Conclusions

As described, the Hawai'i Health Survey has revealed that provider delivered CAM use differs significantly between Native Hawaiian, Asian and other Pacific Island populations in Hawai'i, as well as from use rates reported on the mainland. In fact, CAM use rates in Whites differ significantly from rates reported in the mainland United States. Additional data is needed to consider both the basic and broader implications of these findings. Further investigation of correlates of CAM use in Hawaiian, Asian and other Pacific Island populations is urgently needed. Such investigation would benefit from systematic assessment of use of CAM therapies that do not require provider delivery, such as prayer and use of herbal products. Investigations also are needed to explore the possibility of relationships between CAM use and health outcomes. Ethnic factors associated with CAM use should also be considered in light of health disparities in diverse populations. Hawai'i offers unique opportunities, given the diversity of its population, the existence of CAM schools, and the prevalence of CAM use, for studying factors related to CAM use as it occurs in diverse populations.

*See **HEALTH SURVEY** p. 151*

Age Associated Risks of Recreational Scuba Diving

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Abstract

The effect of aging on risk for development of decompression illness in divers has often been reported as an incidental finding in epidemiological analyses of diving accidents. No previous publications have specifically attempted to quantify or qualify those risks if present. This study demonstrates that aging increases risk for injury overall, serious injury in particular, and lessens recovery potential.

Introduction

Aging has long been believed to increase risk for developing decompression illness in scuba divers. As many as 11 reports have indicated that age represented a risk factor, while three others have suggested otherwise.[1] In a previously published study conducted at the Hyperbaric Treatment Center (HTC) at the University of Hawaii's John A. Burns School of Medicine, which had assessed the efficacy and outcomes of the unique treatment tables employed there,[2] it had been noted that older divers who had suffered significant injury seemed to have less favorable outcomes. As a result of this incidental finding, there was an interest to investigate the interaction of aging and decompression illness to determine whether there was an association between age and susceptibility to decompression illness, as well as recovery from decompression illness. This study attempted to more fully elucidate age-related risks associated with scuba diving accidents and to qualify their nature and quantify their impact.

Methods

A chart review of 889 cases treated for Decompression Illness (DCI) at the HTC between 1983 and 2003 was undertaken in 2004. During a previous review, all cases had been scored by a single investigator with a pre-treatment as well as a post-treatment functional impairment score based upon physical findings and limitations to the conduct of activities of daily living (ADL) at the time of presentation and at the time of discharge respectively. This allowed for assessment of improvement resulting from recompression therapy. Cases were then grouped according to age decades, 20 years or less, 21-30, 31-40, 41-50, 51-60, and 61 and above. The percentage of the study population represented by each age group was determined. These data were then compared with the same age groupings of injured divers as reported by the Diver's Alert Network (DAN) at Duke University for the years 1987-2002 from their database. Both of these data sets were compared to the average percentages in each of the same age groups for all US divers certified by the Professional Association of Diving Instructors (PADI) for the period of time spanning that of the HTC study cohort to determine whether there was any disproportionate representation of injury in any age group. The percentage of HTC cases that failed to achieve complete functional recovery for each group was then determined to assess age related recovery potential. Finally, the percentage of HTC cases in each age group who presented with serious/severe injury was determined as well as the percentage of those cases that were left with residuals.

Results

The number of HTC cases and their percentage of the total population are depicted in Table 1.

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Table 1.— Percent HTC cases by age group (n=889)

Age group	# HTC cases	% HTC cases	% with residuals
20 yrs or less	47	5.2%	6.3%
21-30	293	31.8%	3.8%
31-40	318	35.8%	6.2%
41-50	156	17.5%	8.9%
51-60	60	6.7%	13.3%
61 yrs or more	15	1.6%	33.3%

The percentage of cases in the DAN database for years 1987-2002 for the same age groups as the HTC study population were 3.3%, 21.7%, 35.7%, 23.3%, 8.7%, and 2.0% respectively. Table 2 compares both the HTC and DAN injury percentages to the percentage of PADI certified US divers in the same age groups.

Table 2.— Percent HTC and DAN cases vs. Number PADI certified divers by age group

Age group	% HTC cases	% DAN cases	% PADI divers
20 yrs or less	5.2%	3.3%	17.7%
21-30	31.8%	21.7%	41.0%
31-40	35.8%	35.7%	25.3%
41-50	17.5%	23.3%	12.5%
51-60	6.7%	8.7%	3.0%
61 yrs or more	1.6%	2.0%	0.7%

There were 250 HTC cases (28.1%) that were classified as serious. Table 3 demonstrates the numbers and percentages of serious HTC cases as well as the percent that had residuals in each age group.

Table 3.— HTC serious cases and percent with residuals by age group

Age group	# HTC serious cases	% serious cases	% with residuals
20 yrs or less	15	31.9%	20%
21-30	62	21.1%	19.3%
31-40	83	26%	21.6%
41-50	49	31.4%	30.6%
51-60	27	45%	29.6%
61 yrs or more	9	60%	44%

Of the total number of cases classified as mild/moderate severity, only 0.5% failed to achieve full functional recovery.

Discussion

There are few published data in the literature that address the age associated risks of scuba diving aside from that done annually by the Diver's Alert Network in the *Report on Recreational Diving Injuries and Fatalities*.[3] Several studies have intimated that age is a risk factor, but none have attempted to quantify that risk. This study was undertaken to determine whether such risk exists, attempt to develop a "sense" of the magnitude of any age associated risk as well as to define at what age risks may become significant.

A reasonable place to begin to tackle these questions was in first determining how many divers there are in each of the selected age groupings. PADI has trained about 70% of US recreational divers. Using their statistics,[4] the percentage of the total population of PADI certified divers in each of this study's age groups could be estimated. It would seem logical that if this is the actual distribution of divers by age group, that accidents randomly occurring to divers might be similarly distributed. This would presume that all certified divers are in fact actively div-

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Aphasia Awareness Among the Honolulu Chinese Population

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Abstract

Chinese residents of Hawai'i were surveyed regarding their knowledge about aphasia. Only 14 of 85 respondents had heard the term aphasia, and only three were able to provide acceptable suggestions for facilitating communication with people who have aphasia. These findings highlight the need for community education about aphasia to facilitate community re-entry for Chinese survivors of stroke and aphasia.

Introduction

Cerebrovascular accident (CVA), more commonly called a "stroke," is the third leading cause of death in the nation, ranking behind heart disease and cancer. There are 700,000 new or recurrent strokes each year (American Heart Association, 2004).[1] Approximately 500,000 of those are initial strokes, and 200,000 are recurrent strokes. Many stroke survivors are left with devastating disabilities, including aphasia. Aphasia, the loss of language that masks a person's communicative competence, can impede community re-entry for people with aphasia. Knowledge about aphasia and ways to best communicate with people who have aphasia may greatly enhance community re-entry for aphasic stroke survivors. Available literature however, reveals low levels of knowledge among the community at large. For example, Simmons-Mackie, Code, Armstrong et al. (2002)[2] conducted an international survey in regional shopping centers in three countries: Exeter, England; Louisiana, California, USA, and Sydney, Australia. Close to a thousand people were surveyed and were asked if they had heard of the word "aphasia". Knowledge of aphasia was also probed for those who answered affirmatively. Results of the survey were that there was limited awareness of aphasia and knowledge of aphasia across the four regions that were sampled. While 13.6% of the total participants said they had heard the term aphasia, only 5.4% met the criteria of having some basic knowledge of aphasia. According to their report, some participants demonstrated their knowledge of aphasia by offering some interesting definitions such as "an oriental insect problem affecting people throughout Asia," or "I don't want to get too technical—but in lay terms it's *floppy*" (Simmons-Mackie, N., Code, C., Armstrong, E., Stiegler, L., & Elma, R., 2002).[2] The findings of this study demonstrate the need for increased public awareness.

Elman and her co-authors[3] conducted research in 1999 to compare aphasia with other communication disorders and health conditions with lower or similar incidence rates in the United States. These disorders and health conditions included: Parkinson's disease (1 million); stuttering (2.5 million); multiple sclerosis (350,000); autism (125,000); and muscular dystrophy (250,000). The study was conducted to determine whether aphasia had been represented as adequately as the other disorders or conditions in the top 50 United States newspapers. The researchers found that aphasia had been discussed in these newspapers less frequently than other less commonly occurring disorders. Only 352 newspaper stories had used the word "aphasia" during a five year period just prior to the research, as compared to 1,000+ newspaper stories identified for each of the other disorders/conditions during the same time period (Elman, Ogar, & Elman, 2000).[3]

The infrequent use of the word "aphasia" in the print media may partly explain why the public is unaware of aphasia. The consequence of such a lack of public awareness is detrimental. Without the basic knowledge of the disorder, people from the general public are not likely to understand the impact and devastation of aphasia to individuals and their families who suffer from it. A resulting lack of empathy for people with aphasia may make it challenging for people with aphasia to reintegrate into society. Elman and her co-authors reported that grants and funding for research and services are correlated to the familiarity with a disorder. There was a significant difference in the number of grants given by the 1,000 largest foundations in the United States from 1994-1997 for aphasia, Parkinson's, multiple sclerosis, and muscular dystrophy; with aphasia research receiving the lowest amount ($202,700) and multiple sclerosis receiving the highest amount ($4,201,153). The researchers explained that since the majority of the money donated to the charitable foundations were from individual donors, it was more difficult to raise funds because most people were not aware of aphasia (Elman, Ogar, & Elman, 2000).[3]

Stroke prevalence in the Chinese Population

With previous studies of stroke prevalence and aphasia awareness, the notion that the general public lacks awareness and knowledge of aphasia has been well established. However, studies about aphasia in diverse populations are so limited that it is unclear if these populations follow the same trend in awareness and knowledge of aphasia. According to US Census Bureau (2004),[4] there are an estimated 13.1 million Asian Americans or Asian in combination with other race(s) residing in the United States, which makes up about 5% of the total population. Since the 2000 Census, this ethnic group has increased 9%, the highest growth rate of any ethnic populations. The US Census Bureau (2004) also reported that 2.7 million Asian American residents are Chinese (excluding Taiwanese) or Chinese in combination with other race(s), making Chinese the largest Asian group. The California Department of Health Services conducted a survey in seven states that had the largest Asian American and Pacific Islander populations (California, Hawaii, Illinois, New Jersey, New York, Texas, and Washington) in 1990. The survey results indicated that the Chinese subgroup as a whole had the third highest death rate from stroke (8.4%; 33.2/100,000 population), following Japanese and Filipino subgroups (California Department of Health Services, n.d.).[5] Asian populations (particularly the Chinese population, which makes up the largest Asian subgroup) are the fastest growing ethnic groups in the nation. Given the prevalence of stroke among people of Asian ancestry, there is an immediate need for more research relating to stroke and aphasia awareness in these diverse populations (US Census Bureau, 2004).[4] This study was developed to investigate the awareness and knowledge of aphasia among Chinese American residents of Honolulu.

Methodology

Description of Survey and Questionnaire

A short survey was developed for this research. The survey (Appendix A) was developed by Wallace, based on work reported earlier by Simmons-Mackie, Code, Armstrong, Stiegler, & Elman (2002).[6] The survey was administered to each respondent using a face-to-face interview format. The Wallace survey first probed whether the respondent was familiar with the term "aphasia". Thus, question one asked "*Have you ever heard of aphasia*?" If the respondent's answer was positive, they would then proceed with the rest of the questionnaire which queried the following areas:

1. how the participant first heard about aphasia
2. level of knowledge about aphasia
3. level of knowledge about how to help someone with aphasia

Surveyors and Survey Setting

The surveys were conducted during two separate health related events that were attended predominately by individuals from the Honolulu Chinese community. The surveys were administered by two graduate students of Speech-Language Pathology who had background knowledge of aphasia, training on how to conduct ethnographic interviews, and fluency in Mandarin and Cantonese Chinese (to accommodate monolingual Chinese speaking respondents).

Description of Participants

Eighty-five participants were surveyed; 25 men (29.4%) and 60 women (70.6%). The average age of the total participants was 55.9 (SD = 17.97). All participants were Chinese by self report; 27 were bilingual in both English and Chinese languages, and 58 monolingual Cantonese (N-56) and monolingual Mandarin Chinese (N=2). Forty-nine percent of the respondents had a high school or lower level of education, 13% had some college education, and 38% had a college degree or beyond.

Results

General Awareness of the Term Aphasia

Fourteen (16.47%) out of the total 85 participants responded "yes" to question one, "Have you ever heard of aphasia?" Seventy-one (83.53%) of the participants responded "no" to the question one, indicating that they had not heard the term aphasia. There was a significantly greater number of participants who had not heard of aphasia (P^2=38.22; df=1; p<.05). Figure 1 graphically presents the percent of participants who had and those who had not heard the term aphasia. Question 2 inquired about how the respondents learned about the term aphasia. Seven of the 14 participants reported that they had heard about aphasia because one of their relatives was diagnosed with the disorder. Two other participants identified newspapers or magazines as their source of knowledge about aphasia. In terms of the education level of the 14 participants who had heard the term aphasia, eight of them had a college degree or higher. The remaining six participants had less than college level of education.

Knowledge of Aphasia Characteristics

None of the 14 participants who answered "yes" to question 1 ("Have

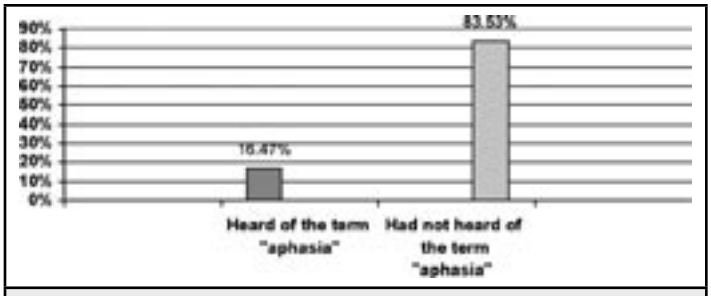

FIGURE 1.— Percent of all participants (those interviewed in Chinese or English) who had or had not heard of the term "aphasia".

Table 1.— Criteria for having some basic knowledge of aphasia characteristics.

3. Check all the areas that a person with aphasia might have trouble with:			
	Yes	No	Not Sure
a. Pronunciation or speech?	X		
b. Grammar or putting ideas into words?	X		
c. Understanding what people say?	X		
d. Thinking or general intelligence?		X	
e. Remembering words they want to say?	X		
f. Reading?	X		
g. Writing?	X		

APPENDIX A

APHASIA AWARENESS QUESTIONNAIRE

Age ____ Female ____ Male ____ Race/Ethnicity _____
Highest Grade in School _____ Occupation _____

1. Have you ever heard of aphasia? (*If no, stop here. If yes, proceed.*)
   - ❑ Yes
   - ❑ No
   - ❑ Not sure

2. How did you first hear about aphasia? (*Please check only one.*)
   - ❑ On radio or television
   - ❑ Newspaper or magazine
   - ❑ Relative or friend has/had aphasia
   - ❑ Work
   - ❑ Other _____

3. Check all the areas that a person with aphasia might have trouble with:

	Yes	No	Not Sure
a. Pronunciation or speech?	❑	❑	❑
b. Grammar or putting ideas into words?	❑	❑	❑
c. Understanding what people say?	❑	❑	❑
d. Thinking or general intelligence?	❑	❑	❑
e. Remembering words they want to say?	❑	❑	❑
f. Reading?	❑	❑	❑
g. Writing?	❑	❑	❑

4. What causes aphasia?

5. A. Is there anything you could do to help a person with aphasia if they have difficulty understanding you?
   Yes ____ No____ What could you do?

   B. Is there anything you could do to help a person with aphasia if they have difficulty talking with you?
   Yes ____ No ____ What could you do?

you ever heard of aphasia?") demonstrated a basic knowledge of aphasia. In order to earn credit for having a basic knowledge of aphasia, respondents needed to answer correctly to all parts of question 3 (refer to Table 1).

Knowledge Level About How to Effectively Communicate with Someone Who Has Aphasia

For question 4 *("What causes aphasia?")*, only six out of the 14 participants who reported to have heard of aphasia were able to identify the cause of aphasia correctly. Most participants (11 out of 14) who reported to have heard the term aphasia were able to suggest acceptable ways to communicate with someone who had difficulty understanding language (question 5a). However, only three out of these 14 participants were able to provide acceptable ways to communicate with someone who had difficulty speaking (question 5b).

Discussion

This study investigated aphasia awareness among the Chinese population in Honolulu. Results demonstrated that there were significantly more Chinese residents of Honolulu who had not heard of the word "aphasia" than those who had (P^2=38.22; df=1; p<.05). This result (16.47% had heard of aphasia) agrees with the findings of the Simmons-Mackie, Code, Armstrong, et al. (2002)[9] international study, where 13.6% of the respondents had heard of the term aphasia. Our sampling was well balanced in terms of education level; 49% with high school or below education level and 51% with some college education or above. Education level did not appear to provide an advantage in terms of level of awareness about aphasia.

Maa & Zeine (2004)[7] found in their study that American-born Chinese respondents had a better general knowledge of stroke factors than the immigrated Chinese respondents. Most first generation Chinese Americans/recent immigrants are from different countries such as the People's Republic of China, Hong Kong, Taiwan, Singapore, Vietnam, etc. where health care services, public health education and awareness might not be considered as important as they are in the United States. Often, these recent immigrants have different educational backgrounds and different beliefs toward health issues. The philosophical views of health issues in Chinese culture are a combination of fatalistic and deterministic beliefs (Tung, 2000)[8]. Chinese patients may deny their illnesses or view them as related to personal carelessness or weakness, or as a result of external forces over which they have no control. The influence of Buddhist beliefs, which emphasize "dignity" prohibit Chinese patients from discussing or even admitting their illnesses, may bring shame upon their families (Tom, 2004)[9]. These views toward health issues among Chinese immigrants may lead to withdrawal and resignation when faced with major illnesses such as stroke or aphasia.

Second or third generation Chinese Americans, on the other hand, are less familiar with traditional Chinese health beliefs. Although these beliefs are sustained across generations, they occur at a much less conscious and overt level. Therefore, second generation/American-born Chinese Americans are more likely to be health conscious, accepting of modern medical practice, and aware of health issues. Though data regarding the time of immigration to the United States was not collected for study participants, the English speaking Chinese respondents (who were likely to have been second and third generation) demonstrated slightly higher level of knowledge about

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Department of Anatomy, Biochemistry and Physiology, JABSOM

Scott Lozanoff PhD, Professor/Chair
Anatomy and Reproductive Biology
John A. Burns School of Medicine
and
W. Steven Ward PhD, Interim Director,
Institute for Biogenesis Research

The Department of Anatomy, Biochemistry and Physiology, JABSOM, is a new department that represents the amalgamation of three former departments, Anatomy and Reproductive Biology, Biochemistry and Biophysics, and Physiology. These departments joined as a result of a re-organization plan that took effect January 1, 2004. The rationale was clear. The three departments were in a state of personnel attrition, yet these basic medical science disciplines were critical to the first year of the medical curriculum as well as undergraduate and graduate education. Amalgamation would hasten educational integration and focused research. The three groups were diverse in their teaching, research, and service missions and a successful merger required time, cooperation, and cohesion. The new department achieved various milestones and is positioned to contribute significantly to JABSOM's Kaka'ako initiative.

The mission of the department is to create knowledge and understanding of disease mechanisms through the study of reproductive and developmental biology, through the use of experimental biomedical systems. The vision of the department is to achieve national and international recognition in research and to excel in the areas of anatomy, biochemistry and physiology instruction. The department is home to twelve tenure track and six non-tenure track faculty, six postdoctoral fellows and fifteen graduate students. The department is supported by four administrative assistants and six technicians. In addition, the department administers the "Willed Body Program" that is the only unit to accept body donations in the State of Hawaii (Lozanoff, 2004; Sharp et al, 2006). Cadavers are received for the purpose of medical education and research. Annually, the department assists medical students in conducting a memorial service for donor families.

The physical domain of the department includes approximately 4000 square feet of research and education space in the Kaka'ako complex, and 15,000 square feet in the Institute for Biogenesis Research on the Manoa campus. Office space for the undergraduate teaching program is in the Biosciences Building on the Manoa campus. The research program concentrates on reproductive and developmental biology with a secondary focus on cardiovascular research. Extramural funding is derived primarily from NIH grants of two R01; three R01 subcontracts; three R03; one R21; and two INBRE funded investigators. This research funding profile highlights an emerging junior faculty on the cusp of significant R01 funding in the immediate future. The department houses the Institute for Biogenesis Research initiated in 2000 as a result of Dr. Ryuzo Yanagimachi's landmark discoveries in *in vitro* fertilization, cloning, and mouse transgenesis. Research studies involve a variety of topics including telomerase form and function, sperm development and capacitation, improved methods of transgenesis, cloning and *in vitro* fertilization, stem cell production and epigenesis, body plan formation, and mesenchymal-epithelial transformation.

Of particular note is the newly reviewed departmental graduate program in medical and molecular physiology. Students are required to complete two courses in medical physiology while simultaneously completing human gross anatomy courses with a cadaveric dissection component that provides direct integration of these two basic medical science disciplines. The rationale is that students will have a sound knowledge base in these subjects that will enable them to teach undergraduate, graduate or medical students upon graduation. During the second year, students may enroll in additional elective courses in cell and molecular biology while pursuing research in externally funded laboratories.

The instructional component of the department is diverse. Undergraduate physiology courses include six traditional lecture/laboratory based classes which enroll approximately 1200 students per year. Biochemistry includes three undergraduate courses. The Department contributes to the medical PBL curriculum by providing tutors to all units and many lectures within the Basic Science Foundation Series (BSF). A significant laboratory component for BSF is provided in the Gross Anatomy, Neuroanatomy, and Histology portions of the medical school curriculum.

The department also supports numerous educational components such as a state-of-the-art Anatomical Training Laboratory. This facility includes a morgue with storage capacity for both embalmed and frozen cadaveric material for medical education and residency training. In addition, a Plastination Laboratory provides durable anatomical material for laboratory sessions. A series of continuing education programs have been developed and implemented for medical and allied medical professionals from local, national and international groups, particularly with an Asian and Pacific focus. Numerous faculty collaborations have been established with universities in Japan, China, Taiwan, and Southeast Asia.

The Department of Anatomy, Biochemistry, and Physiology represents a new, integrative approach for these basic medical science disciplines at JABSOM. The newly amalgamated department contributes significantly and extensively to the mission of the medical school and anticipates continued and focused success. Currently the faculty is establishing long range goals. These include: focus and intensification of the research mission; further development of

the Medical and Molecular Physiology Graduate Program; continued faculty development aimed primarily in support of the junior faculty; maintaining the undergraduate teaching program; expanding the Anatomy Training Center as an important community outreach hub; and, continuing to provide quality PBL tutors, BSF lectures, and laboratory experiences for medical students.

References

1. Lozanoff S (2004) The JABSOM willed body donation program: A unique medical education experience. Hawaii Medical Journal, 63:243-244.
2. Sharp IC, Kuroyama M, Lozanoff S (2006) Willed body donation discrepancies between Asian and Caucasian populations in Hawaii between 1967 and 2004. Submitted to Clinical Anatomy.

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aphasia than non-English speaking respondents (who were more likely to have been first generation).

Among the 14 participants who reported to have heard of aphasia, none of them were able to demonstrate a basic knowledge of aphasia. During the survey interviews, a few of these participants who had heard of aphasia said that paralysis, cognitive deficits, hearing impairments and blindness were some of the symptoms of aphasia. These responses highlight the lack of understanding about aphasia that is prevalent among the general public.

Chinese residents of Honolulu who were sampled for this study had low exposure to the term aphasia and low levels of knowledge about aphasia characteristics and how to help people with aphasia to communicate. These results highlight the need for community education and outreach efforts to enhance awareness and knowledge about aphasia.

References

1. American Heart Association. New stats show heart disease still America's No. 1 killer, stroke No. 3. Available at: http://www.americanheart.org/presenter.jhtml?identifier=3018015. Accessed July 8, 2004.
2. Simmons-Mackie, N., Code, C., Armstrong, E., Stiegler, L., & Elman, R. (2002). What is aphasia? Results of an international survey. Aphasiology, 16 (8), 837-848.
3. Elman, R., Ogar, J., & Elman, S. (2000). Aphasia: Awareness, advocacy, and activism. Aphasiology, 14, (5/6), 455-459.
4. U.S. Census Bureau. Asian Pacific American Heritage Month: May 2004. Facts for Features. April 19, 2004. Available at: http://www.census.gov/PressRelease/www/releases/archives/facts_for_features_special_editions/001738.html. Accessed July 11, 2004.
5. California Department of Health Services. (n.d.). Heart Disease & Stroke Among Asian Americans & Pacific Islanders in California & the U.S. Available at http://66.102.7.104/search?q=cache:uK8vCzEDVhEJ:www.dhs.ca.gov/ps/cdic/cdcb/Chronic/CHDSP/documents/CVDinAsian.pdf. Accessed July 11, 2004.
6. Simmons-Mackie, N., Code, C., Armstrong, E., Stiegler, L., & Elman, R. (2002). What is aphasia? Results of an international survey. Aphasiology, 16 (8), 837-848.
7. Maa, G., Zeine, L. (2004). Stroke Perceptions Among Chinese Americans and Native Americans. Available at: http://www.asha.org/NR/rdonlyres/E4783344-8B47-4D73-BDE0-DAE32907EABB/0/369Handouts.ppt. Accessed July 24, 2004.
8. Tung, May Pao-may. (2000). Chinese Americans & their Immigrant Parents: Conflict, Identity, & Values. NY: Haworth Clinical Press.
9. Tom, Linda Ann S.H. 2004. Health & Health Care for Chinese-American Elders. Available at: http://www.stanford.edu/group/ethnoger/chinese.html. Accessed July 11, 2004.

HAWAI'I MEDICAL JOURNAL

Physical Activity in Youth

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Physical Activity in Youth

Prevalence of overweight is at a record high among children and adolescents.[1] Over the past two decades in the United States, the prevalence of overweight has nearly tripled among adolescents and those who are overweight are likely to become overweight adults.[1,2] Sixteen percent of children and adolescents in the United States, roughly 9 million aged 6-19 years, are estimated to be overweight.[1] Youth physical inactivity has been declared a public health burden for our society[3,4] and there is a strong need for research identifying successful interventions. There are many detrimental aspects for a child who is overweight, they are affected both physically and mentally thus impacting their present and future quality of life.[5] Maintaining weight loss has been associated with increasing physical activity and eating a nutritious diet.[5] Childhood and adolescence is a time when many aspects of health behavior are established and are likely to persist into adulthood and physical activity should be encouraged at this time in order to help establish a healthy lifestyle early on.[6]

Epidemiology of Childhood Obesity and Need for Physical Activity in Youth

Healthy People 2010

Healthy People 2010 comprises a set of objectives for the nation to achieve in the first decade of the century.[7] These issues and goals were built on the best scientific knowledge, obtained through a large scale consultation process with major researchers, and are designed to be measured over time.[7] One of the 28 goals of Healthy People 2010 is to improve health, fitness, and quality of life through daily physical activity.[7] Three major issues regarding youth and physical activity have been the focus of the Healthy People 2010 goals for physical activity in children and adolescents. The first is that a large percentage of children are not meeting the recommended guidelines for participation in physical activity.[8] Studies have found that less than 50% of children are sufficiently active.[8] The second finding is that participation in physical activity decreases as age or grade in school increases.[8] The third issue is that a considerably smaller portion of girls than boys are sufficiently active.[8] The Healthy People 2010 goals call for more research, programs, and interventions to be implemented in order to address these issues. Some of the physical activity aspects Healthy People 2010 hopes to increase are: 1) the amount of children and adolescents engaging in 30 minutes or more of moderate physical activity (MPA) on five or more days a week; 2) the proportion of schools that require daily physical activity for all students; and 3) the amount of students who spend at least 50% of their physical education class being physically active.

Benefits of Physical Activity

Physical activity is a healthy method of substantially reducing the risk of many chronic diseases.[1] In children and adolescents, physical activity has been positively associated with cardio respiratory fitness, HDL cholesterol, bone mass, and psychological well-being.[6,9,10] Physical activity has been inversely associated with: obesity in children; elevated blood lipids; and cigarette smoking.[6,8] Studies have shown that students who participate in physical activity programs may experience improved psychological health, concentration, enhanced mathematical skills, and better reading and writing scores.[11] Youth who participate in sports have also shown higher levels of confidence, stronger self-images, reduced disruptive behavior, and lower levels of depression.[12]

Correlates of Physical Activity in Youth

Many studies have looked at correlates of physical activity, although conflicting research has been shown. A "correlate" has been defined as reporting a statistical relationship between physical activity and another factor, as opposed to a "determinant," which is used to indicate a cause and effect relationship.[13] Identifying correlates of physical activity will assist investigators in developing appropriate interventions for children and adolescents.[6,14] Our current understanding of these correlates is reflected in a review by Sallis et al.,[6] which established a small set of consistent correlates. In children ages 3-12, positive correlates of physical activity consisted of; sex (male), race (white), parent overweight status, physical activity preference, intention to be active, previous physical activity, healthy diet, program and facility access, and time spent outdoors.[6] In adolescents older than 12, positive correlates consisted of; sex (male), race (white), achievement orientation, intention, perceived physical competence, previous physical activity, community sports, sensation seeking, parent support, support from significant others, sibling physical activity, direct help from parents, and opportunities to exercise.[6] A study involving 20,000 adolescents ages 12-20 enrolled in the National Longitudinal study of Adolescent Health found that moderate to vigorous activity was highest for Asian and non-Hispanic white boys and lowest for non-Hispanic black and Hispanic girls.[5] This needs to be kept in mind when developing and implementing physical activity research and interventions.

Current Best Practice of Youth Physical Activity

Interventions

Recreational, school-based physical education and sport programs are ideal ways to facilitate both fitness and the acquisition of motor skills for a lifetime of activity. Modifying curriculum and policies may help to increase the amount of moderate or vigorous activity and increase the amount of time students are active during PE classes. If children do not get enough activity in school hours, they do not compensate by being more active outside of the school setting, thus schools may be the main venue for children to get a sufficient amount of physical activity.[15] Although school based interventions are very difficult to coordinate due to the extensive collaboration that is needed, they have been shown as the best way to influence physical activity in children.[16] Researchers, public health professionals, school staff, and officials need to work together in a collaborative manner in order to make the best intervention possible.[16]

Sports, Play, and Active Recreation for Kids (SPARK)

The SPARK physical activity program is an effective intervention program that has been thoroughly researched and is now widely spread to practice. This successful program focuses on the development of healthy lifestyles, motor skills, knowledge, and social and personal skills in children and adolescents.[11] SPARK now has programs for elementary, middle, and high schools as well as after school, early childhood, and lifelong wellness programs.[11] The SPARK objectives are to encourage children to 1) enjoy and seek out physical activity, 2) develop and maintain acceptable levels of physical fitness, 3) develop a variety of basic movement and manipulative skills so they will experience success and feel comfortable during present and future physical activity pursuits, and 4) develop the ability to get along with others in movement environments.[11] At this stage in the SPARK program's existence, it offers curricula, assessment and evaluation, staff development, equipment, and follow-up/support for schools that have implemented the program. The program is dedicated to helping create lifelong wellness through the spread of their program.

Fun 5

Following a successful Fun 5/SPARK pilot in 13 elementary after-school (A+) programs,[17] the Hawaii State Department of Education, Hawaii Medical Service Association, University of Hawaii, and community organizations are disseminating Fun 5 statewide.[18] Seventy-two sites (over 7000 students), including 12/13 pilot sites, participated in the first dissemination year. Fun 5 includes: the SPARK-Active Recreation program; promotion of healthy eating focusing on fruit and vegetables; semester booster sessions; monthly newsletters and ongoing evaluation. Participating sites were asked to provide parent consent, complete and return surveys that included physical activity and fruit and vegetable consumption indicators. Samples for each time point were: baseline (T1; n=273, 58% female; 15 sites); midpoint (T2; n=215, 53% female; 16 sites); and endpoint (T3; n=175, 57% female; 12 sites). Analyses revealed significant increases in strenuous activity (T1=160.16+/-125.96min/wk; T3=192.6+/-140.4min/wk; p<.05), moderate activity (T1=113.54+/-108.87 min/wk; T3=148.18+/-128.7min/wk), fruit consumption (T1=3.39+/-2.2 servings/day; T3=4.3+/-2.7 servings/day; p<.05), and vegetable consumption (T1=2.8+/-2.2 servings/day; T3=3.8+/-2.8 servings/day; p<.05). No significant changes were observed for mild or sedentary activity. With increasing childhood obesity and related risks, and decreasing Physical Education, after-school programs become a real opportunity to promote physical activity and healthy nutrition.

Discussion

Progress has been made with physical activity promotion in children, but there is still a great deal that needs to be done. The studies that are being conducted and research that is applied and put into practice continue to create awareness of the benefits of physical activity as well as influence people to live healthier lifestyles. The SPARK program has spread all over the nation and it has changed much of the thinking regarding the best methods for encouraging physical activity in youth. It has also helped to make physical education a time to teach social skills and influence self efficacy. Research based programs such as Fun 5/SPARK need to be monitored on and supported by district and school administrators to ensure that the program continues to be taught at a high quality level. Also, physical activity should be presented in a way that is enjoyable and encouraging for all children to want to participate. The Fun5/SPARK program strives to include and influence everyone to participate and enjoy activity, and it keeps kids active throughout the specified times. Because school-based programs have been shown to be the most effective strategies for increasing physical activity, more of

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References

1. Astin JA. Why patients use alternative medicine: results of a national study. JAMA 279(19):1548-53. May 20, 1998
2. Bausell RB, Lee WL, Berman BM. Demographic and health-related correlates to visits to complementary and alternative medical providers. Med Care 39(2): 190-6. Feb. 2001.
3. Druss BG, Rosenheck RA. Association between use of unconventional therapies and conventional medical services. JAMA 282(&):651-6, Aug. 18, 1999.
4. Eisenberg DM, Kessler RC, Foster C, et al. Unconventional medicine in the United States. Prevalence, costs, and patterns of use. N Engl J Med 328(4):246-52. Jan. 28, 1993.
5. Eisenberg DM, Davis RB, Ettner SL, et al. Trends in alternative medicine use in the United States, 1990-1997: results of a follow-up national survey. JAMA 280(18):1569-75. Nov. 11, 1998.
6. Landmark Healthcare, Inc. The Landmark Report on Public Perceptions of Alternative Care. Landmark Healthcare Inc., Sacramento, CA. 1998.
7. Mackenzie ER, Taylor L, Bloom BS, et al. Ethnic minority use of complementary and alternative medicine (CAM): A national probability survey of CAM utilizers. Alternative Therapies in Health and Medicine 9(4):50-56. 2003.
8. Ni H, Simile C, Hardy AM. Utilization of complementary and alternative medicine by United States adults: Results from the 1999 National Health Interview Survey. Med Care 40(4):353-8 Apr. 2002.
9. Oldendick R, Coker AI, Weiland D, et al. Population-based survey of complementary and alternative medicine usage, patient satisfaction, and physician involvement. Southern Medical Journal 93(4):375-81. 2000.
10. Paramore LC. Use of alternative therapies: Estimates from the 1994 Robert Wood Johnson Foundation National Access to Care Survey. J Pain Symptom Manage 13(2):83-9. Feb. 1997.
11. Rafferty AP, McGee HB, Miller CE, Reyes M. Prevalence of complementary and alternative medicine use: State-specific estimates from the 2001 Behavioral Risk Factor Surveillance System. Am J Public Health 92(10):1598-1600. 2002.
12. National Center for Complementary and Alternative Medicine: What is Complementary and Alternative Medicine? National Institutes of Health, 2002.
13. Barnes PM, Powell-Griner E, McFann K, Nahin RL: Complementary and alternative medicine use among adults: United States, 2002. Advance data from vital and health statistics; no 343. Hyattsville, Maryland: National Center for Health Statistics, 2004.
14. Kessler RC, Davis RB, Foster DF, Van Rompay MI, Walters EE, Wilkey SA, Kaptchuk TJ, Eisenberg DM. Long-term Trends in the Use of Complementary and Alternative Medical Therapies in the United States. Ann Intern Med 2001;135:262-268.
15. McFarland B, Bigelow D, Zani B, Newsom J, Kaplan M. Complementary and Alternative Medicine Use in Canada and the United States. Am J Public Health 2002;92:1616-1618.
16. Sharples FM, van Haselen R, Fisher P. NHS patients' perspective on complementary medicine: a survey. Complement Ther Med 2003;11(4):243-248.
17. Wolsko PM, Eisenberg DM, Davis RB, Ettner SL, Phillips RS. Insurance Coverage, Medical Conditions, and Visits to Alternative Medicine Providers: Results of a National Survey. Arch Intern Med 2002;162:281-287.
18. Eisenberg DM, Kessler RC, Van Rompay MI, Kaptchuk TJ, Wilkey SA, Appel S, Davis RB. Perceptions about Complementary Therapies Relative to Conventional Therapies among Adults Who Use Both: Results from a National Survey. Ann Intern Med 2001;135:344-351.
19. Sharma R, Haas M, Stano M. Patient Attitudes, Insurance, and Other Determinants of Self-Referral to Medical and Chiropractic Physicians. Am J Public Health 2003;93:2111-2117.
20. Thorne S, Paterson B, Russell C, Schultz A. Complementary/Alternative Medicine in Chronic Illness as informed self-care decision making. International Journal of Nursing Studies 2002;39:671-683.
21. Cherkin DC, Deyo RA, Sherman KJ, Hart LG, Street JH, Hrbek A, Cramer E,Iliman B, Booker J, Mootz R, Barassi J, Kahn JR, Kaptchuk TJ, Eisenberg DM. Characteristics of Visits to Licensed Acupuncturists, Chiropractors, Massage Therapists, and Naturopathic Physicians. J Am Board Fam Pract 2002;15:463- 472.
22. Factor-Litvak P, Cushman L, Kronenberg F, Wade C, Kalmuss D. Use of Complementary and Alternative Medicine Among Women in New York City: A Pilot Study. J Altern Complement Med 2001;7:659-666.
23. Gotay CC, Hara W, Issell BF, Maskarinec G. Use of Complementary and Alternative Medicine in Hawaii Cancer Patients. Hawaii Med J 1999;58:94-98.
24. Maskarinec G, Shumay D, Kakai H, Gotay CC. Ethnic Differences in Complementary and Alternative Medicine Use Among Cancer Patients. J Altern Complement Med 2000;6:531-538.
25. Shah BV, Barnwell BG, Hunt PN, LaVange LM. SUDANN user's manual, release 5.50. Research Triangle Park, North Carolina: Research Triangle Institute. 1991.
26. http://www.state.hi.us/doh/stats/surveys/hhs.html

UPCOMING CME EVENTS

Date	Specialty	Sponsor	Location	Meeting Topic	Contact
May 2006					
5/4-5/6	Multi	Department of Native Hawaiian Health, John A Burns School of Medicine, University of Hawai'i	JW Marriott Ihilani Resort & Spa Ko Olina, O'ahu	He Huliau - A Turning Point: Eliminating Health Disparities in Native Hawaiians & Pacific Peoples Cardiovascular Disease 2006	Tel: (808) 587-8563 Web: http://www.hawaiiexport-center.hawaii.edu/
5/20-5/21	OPH	Hawaii Ophthalmology Society	Halekulani Hotel, Honolulu	22nd Annual HOS Spring Update	Tel: (808) 521-3535 Web: http://www.hawaiieyemds.org
5/22-5/24	Multi	Stanford University School of Medicine	Mauna Lani Bay Resort, Kohala Coast	Complex Cardiovascular Patient Management	Tel: (650) 724-7166 Web: www.cme.stanfordhospital.com
5/29-6-3	OBG	University of California, Davis	Maui Prince Hotel, Maui	Women's Health Conference for Obstetrician-Gynecologist and Primary Care Providers	Tel: (916) 734-5390 Web: cme.ucdavis.edu
June 2006					
6/11-6/15	C	University of California, Davis	Fairmont Orchid, Kohala Coast	Update of the Management of Thromboembolic Disorders	Tel: (916) 734-5390 Web: cme.ucdavis.edu
6/15-6/18	GS	University of California, San Francisco	Kahala Mandarin Oriental, Honolulu	UCSF Innovations in Medical and Surgical Care Conference	Tel: (415) 476-5808 Web: www.cme.ucsf.edu
6/22-6/24	OBG	American College of Obstetricians and Gynecologists	Fairmont Orchid, Kohala Coast	The Art of Clinical Obstetrics	Tel: (800) 638-8444 x2540 Web: www.acog.org
6/25-6/27	Multi	John A Burns School of Medicine, University of Hawai'i	Hawai'i Convention Center, Honolulu	2nd Annual Hawai'i BioScience Conference: The Molecular Basis of Disease	Web: www.hibiosci.org
July 2006					
7/23-7/29	OS	Department of Orthopaedic Surgery, Kaiser Honolulu	Grand Hyatt Resort, Poipu, Kauai	14th Annual Update in Orthopaedic Surgery, Hawai'i 2006	Tel: (808) 432-2243
7/23-7/27	ORS	North American Spine Society	Ritz-Carlton, Kapalua, Maui	Spine Across the Sea	Tel: (877) 774-6337 Web: www.spine.org
August 2006					
8/17-8/18	Multi	St. Francis Medical Center -- Liliha	St. Francis Medical Center -- Liliha	Medical Malpractice: Understanding the Law, Managing the Risk	Tel: (808) 547-6140
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10/20-10-22	Multi	Hawai'i Medical Association	Hawai'i Convention Center, Honolulu	2006 Annual Meeting; Leading the Way: Building on 150 years of Service	Tel: (808) 536-7702 Web: www.hmaonline.net
10/22-10/27	U	Western Section of the American Association of Urology	Hyatt Regency Resort, Maui	82nd Annual Meeting	Tel: (714) 550-9155 Web: www.wsau.org
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ing consistent with that distribution. That in fact may not and probably is not the case. We need better denominator data such as the total number of dives per diver in each age group before we can more confidently draw any rational conclusions as to the true incidence of injury in any age group. However, it is not unreasonable to conclude that any measure of injury rate which exceeds the known proportion of divers in a particular age group would be unexpected and highly suggestive for significance. Thus beginning at age 31 in both the HTC and DAN data sets there is an injury rate distribution ranging from 1.4 to 2.9 times greater than the age population percentage of certified divers in which the injuries occurred. Between ages 31-50 the range is 1.4 to 1.8 times greater and between ages 51-61+, the range is 2.2 to 2.9 times greater. This suggests that as divers age, their risk for injury increases and becomes more pronounced after age 40 based on this study (Table 2).

Data from Table 1 based upon the HTC cases shows that with advancing age, an injured diver is at increasingly greater risk for incomplete recovery and again this starts to be more pronounced after age 40 and that risk significantly increases at age 50 and older. Fully one-third of those over age 60 failed to achieve full functional recovery in the HTC population. More ominous was the finding that as one reached the age of 50, there was greater likelihood of sustaining a serious injury along with a markedly increased risk for incomplete recovery (Table 3).

Conclusions

This study clearly demonstrates that as divers age, there is some increased risk for decompression illness. Furthermore, it suggests that they are at greater risk for serious injury. If injured there is greater risk for incomplete recovery, and if seriously injured they are at substantial risk for incomplete recovery. Consequently, older divers should become increasingly more conservative with their diving practices, limiting depth and total dive times in order to reduce and limit these risks.

References

1. Bove A. Diving medicine. Philadelphia: 3rd ed. Saunders Pub.1997: 156
2. Smerz R, Overlock R, Nakayama H. Hawaiian Deep Treatments, Efficacy and Outcomes, 1983-2003. *Undersea and Hyperbaric Medicine* 2005 Sep-Oct; Vol. 32: 5; 363-373
3. Vann RD, Denoble PJ, Uguccioni DM, et al. Report on decompression illness, diving fatalities, and project dive exploration: DAN's annual review of recreational scuba diving injuries and fatalities based on 2003 data. Durham: Diver's Alert Network, 2004:46-77.
4. PADI Americas. PADI diver statistics. Available at http://www.padi.com. Accessed December 23, 2005.

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these should be researched, implemented, and maintained throughout the nation. These programs should explore policy changes, provide good physical and social environments for physical activity, and create a sequential curriculum to build physical activity skills as a child progresses in school. They should also provide extracurricular physical activity programs, community based sports programs, and include parents in the physical activity program. Evaluation should go hand in hand with implementation of physical activity programs and instruction. When research based programs start to be disseminated to practice, funding for the maintenance of the program should be a strong consideration.

For more information about the Cancer Research Center of Hawai'i, please visit its website at www.crch.org.

References

1. Centers for Disease Control and Prevention. Physical activity and good nutrition: Essential elements to prevent chronic diseases and obesity. Available at: http://www.cdc.gov. Accessed March 1, 2006.
2. Field AE, Austin SB, Taylor CB, et al. Relation between dieting and weight change among preadolescents and adolescents. Pediatrics. 2003,112:900-906.
3. Centers for Disease Control and Prevention. Increasing physical activity: A report on recommendations of the Task Force on Community Preventive Services. MMWR Morb Mortal Wkly Rep. 2001,50:1-14.
4. Dishman RK, Motl RW, Saunders RP, et al. Factorial invariance and latent mean structure of questionnaires measuring social-cognitive determinants of physical activity among black and white adolescent girls. Prev Med. 2002,34:100-108.
5. Gordon-Larsen P, Adair LS, Popkin BM. Ethnic Differences in Physical Activity and Inactivity Patterns and Overweight Status. Obes Res. 2002,10:141-149.
6. Sallis JF, Prochaska JJ, Taylor WC. A review of correlates of physical activity of children and adolescents. Med Sci Sports Exerc. 2000,32:963-975.
7. U.S. Department of Health and Human Services (USDHSS). Healthy People 2010: 22 Physical Activity and Fitness. Available at: http://www.healthypeople.gov/Document/HTML/volume2/22physical.htm. Accessed March 1, 2006.
8. U.S. Department of Health and Human Services (USDHSS). Physical activity and health: Report of the Surgeon General. Atlanta, GA: Centers for Disease Control and Prevention, 1996.
9. Tergerson JL, King KA. Do Perceived Cues, Benefits, and Barriers to Physical Activity Differ Between Male and Female Adolescents? J Sch Health. 2002,72:374-380.
10. Trost SG, Pate RR, Dowda M, et al. Psychosocial correlates of physical Activity in white and African-American girls. J Adol Med. 2002,31:226-233.
11. SPARK. (2004). SPARK coordinated health. Available at: http://www.sparkpe.org/csh.jsp. Accessed March 1, 2006
12. Dowling C. Getting Them Out of the Doll Corner. The Frailty Myth. New York: Random House Trade Paperbacks; 2000: 84-112.
13. Bauman AE, Sallis JF, Dzewaltowski DA, Owen N. Toward a better understanding of the influences on physical activity: the role of determinants, correlates, causal variables, mediators, moderators, and confounders. Am J Prev Med. 2002,23:5-14.
14. Trost SG, Pate RR, Ward DS, Saunders R, Riner W. Correlates of objectively measured physical activity in preadolescent youth. Am J Prev Med. 1999,17:120-126.
15. Zask A, Van Buerden E, Barnett L, Brooks LO, Dietrich UC. Active school playgrounds-myth or reality? Results of the "Move It Groove It" project. Prev Med. 2001,33:402-408.
16. McKenzie TL. School-based interventions to promote physical activity in children. InFarpour-Lambert N, Stussi C, Kriemler S, eds. Children and Exercise XXIII: Physical Activity for Health. Proceedings of the 23rd International Meeting of the European Pediatric Work Physiology Society, Gwatt, Switzerland, September 22-25, 2005;1-9.
17. Nigg CR, Battista J, Chang JA, Yamashita M Chung RS. Physical Activity Outcomes of A Pilot Intervention Using SPARK Active Recreation in Elementary After School Programs. J Sport Exerc Psychol. 2004,26: S144-S145.
18. Nigg CR, Hottenstein C, Yamashita M, Inada M, Paxton R, Chung RS. First year dissemination results: Fun 5 – a physical activity and nutrition program for elementary after school programs. Ann Behav Med. 2006,31:S92.

HAWAI'I MEDICAL JOURNAL

❖ HIT ME AGAIN, DOC. I THINK I'M GETTING A HEADACHE.

Five years ago our Hawaii legislature enacted a medical marijuana law. To date, 3,000 people have registered to make use of the drug. One hundred sixty-four physicians signed up to certify that their patients need marijuana to control pain and the side effects of other therapy, but only a few doctors, mostly from the Big Island, actually write the certificate (a recommendation, not a prescription) for patients. Eight doctors account for 80% of the patients for whom they certify need. It is a Catch-22, because while patients can legally buy pot, vendors cannot legally sell it! Many doctors are reluctant to confront the legalities which could ensue. None of the eight physicians who have signed most of the certifications have been accused of wrongdoing, but investigators are casting a suspicious eye. One of the Honolulu certifying doctors admits that people do show up with exaggerated claims of illness just to legally use the drug. As might be expected when a different green substance is involved, last September the *Hemp and Cannabis Foundation* of Portland, Oregon, began sending physicians on monthly trips to Honolulu to certify patients at $250 a pop. Purely altruistic motives, of course.

❖ HERE'S THE CAR KEY AND YOUR BRAILLE PAD. DRIVE CAREFULLY!

Illinois' public schools are required to offer a class in driver's education for sophomore students. What a great idea! While the state law does not mandate the course for graduation, several hundred public schools, including Chicago, have chosen to make it a diploma requirement. Not such a great idea. It means that dozens of visually handicapped and blind students in Illinois, who will never operate a motor vehicle, must study and pass the written test to receive a diploma . The affected students and their parents have complained. "Why do I have to memorize what a stop sign looks like when I will never see one?" said a young woman who feared she might fail the ten week course. "It defies logic that a blind student should be required to take this class," said Meta Minton, a spokesperson for the Illinois State Board of Education. Logic in a bureaucracy? There's a novel idea.

❖ EVERY MAN HAS A PLAN THAT WILL NOT WORK.

Worldwide, the most important infectious cause of blindness is trachoma, the viral disease caused by *Chlamydia trachomatis*. Scarred conjunctiva with lid distortion and corneal abrasion due to wild lashes, results in erosion of epithelium, infection, opaque corneae and loss of sight. World Health Organization (WHO) guidelines call for three annual mass medication distributions, especially in children age one to five years, the group known to have the highest prevalence of chlamydial infection. However, this often proves difficult because of a high variance in villages, poor record-keeping and monitoring, and transient populations. As a possible remedy WHO provided a single mass distribution of azithromycin for selected groups age one to five in Ethiopia with cooperation of the government, to determine if the disease could be controlled. Good thought, but despite initial effectiveness, the condition gradually returned over the following 24 months demonstrating that continued follow up care is necessary for control.

❖ HE'S SO FAT HE HAD TO GET GROUP INSURANCE.

To state that America's population of over-weight and obese people is an increasing problem is putting it mildly. Now many orthopedic surgeons are refusing to perform knee and hip replacement on obese people. These patients are more challenging at surgery, more likely to develop post-operative pneumonia and bed sores, need more time in the hospital and rehabilitation centers, and are less likely to have a good result. Yet these are the very patients who need the surgery most. It's yet another Catch-22. Surgeons say, "Hey, lose 60 (or 100) lbs and we'll talk about it." But the lack of mobility makes it impossible to exercise and drop the pounds, so patients go home and have a beer or eat a chocolate bar until they feel better. In Britain, because of the excess cost, some hospital units have been instructed to deny surgery to patients with body mass index (BMI) beyond a specified limit. Surgeons in the United States do the same, although it is informal and not defined. Weight disorders are very largely a matter of personal health responsibility, and this kind of public health leadership is sadly wanting in this nation of almost 300 million.

❖ AS GOD IS MY WITNESS...

In California, two obstetricians refused to perform artificial insemination on a patient. She brought a suit citing sexual discrimination because she is a lesbian. The doctors stated that they refused, not because of her sexual orientation but that their religious beliefs preclude them from performing the procedure on any unmarried woman. The original trial court ruled against the doctors citing discrimination, but the appellate court over-ruled the trial court. Apparently, the woman had filed the suit before the anti-discrimination act which expressly bans both marital status and sexual bias. The doctors won this lawsuit, but no longer can let religious bias interfere with similar cases.

❖ NO OTC FOR BCP PER GOP.

Last August, Susan Wood, director of FDA's Office of Women's Health resigned when the scientific evaluation study recommended that Plan B (the morning after pill) should be offered over the counter, and the White House trumped that recommendation. Religious factions on the Republican right pressured the Administration to not permit OTC sales of the medication, since their belief is that it would encourage teen-age sexual intercourse. While that issue is arguable, it has been established that Plan B is effective 90% of the time in avoiding unwanted pregnancy, which surely can reduce the frequency of abortion (what part of avoiding pregnancy do Bible-thumpers not understand?). Recently three women filed a law suit against Wal-Mart for refusing to stock Plan B. In response, the Massachusetts Pharmacy Board has directed that Wal-Mart pharmacies must stock the medication, and Wal-Mart is considering changing its policy nationwide. Previously, only Illinois required pharmacies to stock Plan B. This medication is the same as well-established birth control pills. Why is there a controversy?

❖ UNDER ANY PLAN A FEW SHARKS WILL MILK THE SYSTEM.

Judge Janis Graham Jack couldn't take it any more and frankly accused the doctors of "manufacturing claims for money." The doctors refused to appear voluntarily, so they had to be subpoenaed when challenged by Congress to testify in the disgraceful Texas silicosis/asbestos fraud. They took the Fifth Amendment. With assembly line diagnosis of phony claims, the doctors were paid millions of dollars by X-ray screening companies which were working for plaintiff attorneys. One doctor had diagnosed disease in 51,048 patients (one day recording 515 new patients); another physician claimed 30,329 diagnoses. One physician who did testify, stated that he signed claims for 3,600 patients, but then admitted he did not know the criteria for making the diagnosis. He revealed that the language for his report was a standard paragraph supplied by a Texas law firm. Many attorneys would only pay for services when provided with a positive diagnosis of silicosis or asbestosis. These docs must have studied with the Redding, California, Tenet Hospital-Moon cardiac team.

❖ AVOID A ROAD BLOCK. SEEK HELP ELSEWHERE.

If H&R Block is your tax preparation firm, you might want to reconsider. The company admitted to a mere $32 million under-reporting income for years 2004 and 2005. No one is shouting fraud or malfeasance, but it is pretty difficult to establish confidence for your clients when forced to admit multi-million dollar "accounting errors." Stock value immediately dropped by 9% to $23.01, and earnings for the years must be restated downward. Of course, the really big hit may come if Leno and Letterman give the issue late night attention, as seems likely. Why would anyone trust a tax consultant who can't prepare his own return?

ADDENDA

❖Scientists claim that 40,000 parasites and 250 types of bacteria are exchanged with a typical French kiss (what is typical?).

❖At Duke University, researchers found that monkeys will forego a food reward in order to view female monkeys' backsides (who thought up that study?).

❖In 2003, a mere 20% of American men remained in the work force at age 65.

❖Woodrow Wilson's face appears on the $100,000 bill; probably not in your wallet today.

❖Nowhere in nursery rhymes does it state that Humpty Dumpty is an egg.

❖Sign in a women's rest room: "If it has tires or testicles you're going to have trouble with it."

ALOHA AND KEEP THE FAITH — rts■

Contents of this column do not necessarily reflect the opinion or position of the Hawai'i Ophthalmological Society and the Hawai'i Medical Association. Editorial comment is strictly that of the writer.

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