Building Capacity for Caregiver Education in Yap, Micronesia

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Abstract

The US Affiliated Pacific Islands have an urgent need for family caregiver education to prevent caregiver burnout and strengthen the existing culture where seniors are cared for at home by their families. The Pacific Islands Geriatric Education Center conducted a 32-hour family caregiver train-the-trainer workshop in partnership with the Yap Department of Health Services and the Yap Area Health Education Center (AHEC) from October 16 - 20, 2017. Twenty-seven participants including community health workers, peer educators, health assistants, nurses, and physicians were trained as instructors. Confidence in caregiving increased following the training and feedback was extremely positive. Competence in geriatric syndromes was improved after attending the workshop (P<.001). Lessons from the field revealed an immense value of adding home visits to the training practicum as well as the need to translate caregiving handouts into the outer island languages. Yap AHEC is committed to offering this course as part of caregiver education at the hospital and in the community.

Keywords

Micronesia, Yapese, caregiving, AHEC, educational program, family caregivers

Introduction

Yap is one of four states in the Federated States of Micronesia (FSM). These states were part of the United States Trust Territory of the Pacific Islands.[1] Yap State stretches from 6–10 degrees north latitude to 137–148 degrees west longitude and encompasses 500,000 square miles of area in the Western Caroline Islands. It consists of 78 islands, however only 22 are inhabited. Yap State includes Yap Proper, Ulithi, Woleai, and other atolls east of Yap. According to the 2000 FSM Census data, the population of Yap was 11,241 with 7,391 in Yap proper and 3,850 in the outer islands.[2] The population consists of 49.1% Yapese mainlanders, 36% outer islanders, and 4.8% Asians. Elderly population aged 75 years and above comprises 2% of the population.

Prior to colonization, Yap contained chiefdoms which consisted of sociocultural systems characterized by hierarchical social rankings. Bilineal descent determined social position, inheritance, kinship, residence, and land tenure. In a subsistence economy, women tended to the taro patches and yam gardens while the primary role of men was fishing. *Tabinaw* commonly referring to Yapese household, is the most basic concept of Yapese leadership and sociopolitical organization. Primary food and space goes to the oldest male followed by the oldest female, and on down through the hierarchy of the family.[3] Yap is known for its stone money or *Rai*, which are large doughnut-shaped carved disks of calcite measuring anywhere from 1 -12 feet in diameter.[4] Their value is based on the stone's size and history.

In traditional times, Yapese did not have specialized medical practitioners. In every family there were members who had knowledge of magic associated with controlling weather, warfare, or fishing and had knowledge with regard to health and disease. These magicians gained prestige based upon the effectiveness of their knowledge in curing those who were ill or in aborting or controlling potential natural disasters. Yap Memorial Hospital in the capital of Colonia is the only hospital in Yap. Due to limited transportation, residents living on the outer islands rely on the 17 outer island dispensaries and traditional practitioners.

All of the long-term care in Yap is provided by families. Filial piety is an important cultural value. Concepts of nursing homes, assisted living, care homes, or foster homes are non-existent. Yap has a high proportion of individuals with disabilities needing assistance with daily living. The 1,922 people with disabilities in Yap represented 16.9% of its population.[5] The islands of Yap, particularly the outer islands, continue to support one of the world's best traditional palliative care systems involving the immediate family, more distant relatives, and in many cases, the entire community.[6] However, there is concern that this system is weakening and one of the many suggestions for improvement includes regular home visits by a healthcare team combined with practical at home teaching.[6]

The Yap State Department of Health Services, through key informant interviews, identified a lack of skills and basic knowledge on caregiving for the elderly and disabled. There is difficulty in discharging persons from the hospital as families are ill equipped to care for them at home. There is an urgent need for additional training on caregiving for the elderly and disabled. This common need is also seen on other islands in Micronesia such as Palau.[7]

The Pacific Islands Geriatric Education Center (PIGEC) at the John A. Burns School of Medicine, University of Hawai'i has a mission to promote training in geriatric education in the Pacific Islands to improve healthcare for the elderly and homebound. The goal is to support families in the acquisition of specific skills related to healthcare of the elderly and disabled. The objective of this project was to develop a family caregiver training program for Yap.

Methods

A Family Caregiving Certificate train-the-trainer workshop was conducted from October 16 - 20, 2017 at Yap Memorial Hospital. This workshop was modeled on prior successful training that was developed and implemented in Palau. In 2013, the Palau Ministry of Health, Palau Area Health Education Center (AHEC), Palau Community College (PCC), and PIGEC collaboratively designed the core curriculum of a Family Caregiving Certificate. Resources available in developed countries are not available in developing countries, and so the curriculum had to be tailored to the islander population. This Family Caregiver Certificate taught at PCC included 8 modules covering basic caregiving topics and skills. Since its inception, the Palau AHEC has coordinated a total of 37 postgraduate and undergraduate courses in general practice and public health in Palau, Yap, and the Republic of the Marshall Islands.[8]

The core curriculum of the Family Caregiving Certificate is divided into four main competencies: caregiver health literacy, mental health, hands-on training, and the field practicum. The training covered topics such as activities of daily living, common medical problems, wound care, proper use of durable medical equipment, managing difficult behaviors, and caregiver burnout (Table 1). The workshop integrated local culture and included: role play, the teach-back method, hands-on demonstrations, as well as field trips.

A train-the-trainer model was adopted by PIGEC. The workshop was designed collaboratively by Yap AHEC, Yap Department of Health Services, and PIGEC. The planning committee members requested home visits for the field practicum and standardized geriatric assessment tools were taught and utilized at the home visits. Another priority identified was to conduct community outreach during evening sessions at local churches.

Descriptive statistics with means and percentages were used to provide a description of the sample. A pre-post test containing 28 multiple-choice questions was administered to assess knowledge of core geriatric topics. To assess changes in knowledge and confidence to teach specific geriatric skills, values from the pre- and post- questionnaires were compared using paired t-tests. Data was analyzed using SAS version 9.1.3 (Cary, North Carolina).

Table 1. Core Curriculum of the Family Caregiving Certificate

Session	Module	Learning Objectives and Rationale
1	Normal Aging Cultural Aspects of Caregiving	• Understand the general principles in caring for the elderly. • Strengthen the cultural aspects of caregiving in Yap. • Increase knowledge on the physical changes associated with aging.
2	Gait and Transfer Training Fall Prevention	• Learn strategies to prevent falls at home. • Training on gait and transfers techniques. • Proper use of durable medical equipment such as canes, walkers, and wheelchairs.
3	Pain and Symptom Management Managing Difficult Behaviors	• Understand the WHO approach to pain management. • Learn non-pharmacological approaches to managing difficult behaviors. • Improve communication with persons who have dementia.
4	Activities of Daily Living – Part 1	• Learn the importance of proper hygiene. • Increase confidence in performing activities of daily living. • Competence in giving a bed bath.
5	Activities of Daily Living – Part 2	• Understand the importance of oral care and dental hygiene. • Learn dietary recommendations for chronic diseases. • Describe strategies to improve appetite.
6	Wound care and Bedsore Prevention Common Medical Problems	• Increase knowledge on prevention of bed sores. • Learn signs and symptoms of a heart attack and stroke. • Understand common medical problems affecting the elderly.
7	Relieving Family and Caregiver Stress	• Describe stress management strategies. • Recognize signs of caregiver burnout. • Increase knowledge of community resources available for the elderly and disabled in Yap.
8	Field Trip	• Practicum to provide trainees a real world experience. • Hand-on skills check and assessment. • Opportunity to work in an interdisciplinary team.

Results

Twenty-seven participants were trained as instructors and the training was 32 hours in duration. Participants included health assistants, community health workers, nurses, and physicians. The majority were Yapese, with 2 Kosraen, 1 Fijian and 1 German. Caregiving handouts were translated into Yapese and outer island languages. Demographic characteristics of the 27 participants are described in Table 2. Twelve were nurses, 8 were community health workers, 2 were peer educators, 1 was a physician and 2 were other professionals. Twenty-two participants were women and 5 were men. The majority were in the age range of 50 – 59 years with less than 10 years of experience.

Self-rated competency of the participants with regards to skills about common geriatric syndromes before and after participating in the workshop is shown in Table 3. Competency in geriatric syndromes was significantly improved after attending the workshop. Topics such as dealing with gait and fall prevention, pain and symptom management, activities of daily living, oral care, and nutrition had statistically significant improvements ($P<.001$) in scores.

Table 2. Demographic Characteristics of Workshop Participants (n = 27)

No.	Variable	Frequency (%)
1.	**Gender**	
	Male	5 (18.51)
	Female	22 (81.49)
2.	**Ethnicity**	
	Yapese	23 (85.2)
	Kosraen	2 (7.4)
	German	1 (3.7)
	Fijiian	1 (3.7)
3.	**Age**	
	20-29	3 (11.1)
	30-39	5 (18.6)
	40-49	7 (25.9)
	50-59	9 (33.3)
	60 or older	3 (11.1)
4.	**Health Profession**	
	Community Health Worker	8 (29.6)
	Health Assistant	1 (3.7)
	Peer educator	2 (7.5)
	Nurses	12 (44.4)
	Physicians	1 (3.7)
	Other professionals	3 (11.1)
5.	**Education**	
	High School Graduate	5 (18.6)
	Some College	12 (44.4)
	College Graduate	10 (37.0)
6.	**Years of Experience**	
	<5	9 (33.3)
	5 to <10	8 (29.6)
	10 to <15	4 (14.8)
	15 to <20	1 (3.7)
	20 to <30	5 (18.6)

Table 3. Differences in Knowledge Summary Scores Before and After Attending the Family Caregiving Certificate Train-The-Trainer Workshop (N = 23)

Training Module	Pre-Training Mean ± SD	Post-Training Mean ± SD	Change Mean ± SD	*P*-value[a]
Normal Aging	3.5 ± 0.67	3.6 ± 0.95	0.04 ± 1.06	.85
Gait and Fall Prevention	1.9 ± 0.98	3.3 ± 0.88	1.39 ± 1.08	<.001
Pain and Symptom Management	3.1 ± 0.92	3.8 ± 0.42	0.65 ± 0.83	**.001**
Activities of Daily Living	2.7 ± 1.01	3.4 ± 0.50	0.70 ± 0.97	**.002**
Oral Care and Nutrition	3.1 ± 0.79	3.9 ± 0.63	0.78 ± 1.00	.001
Common Medical Problems	3.8 ± 0.39	4.0 ± 0.21	0.13 ± 0.34	.83
Relieving Caregiver Stress	3.6 ± 0.65	3.9 ± 0.34	0.22 ± 0.60	.09
Overall Summary Scores	21.9 ± 2.63	25.8 ± 2.30	3.91 ± 2.81	**<.001**

[a] *P*-value based on paired t-tests

Table 4. Participant Satisfaction Survey After Attending the Family Caregiving Certificate Train-The-Trainer Workshop (N = 24)

Question No.	Training Evaluation	Mean ± SD[a]
1.	Handouts	4.5 ± 0.59
2.	Translations	4.0 ± 0.75
3.	Demonstrations	4.7 ± 0.46
4.	Audiovisuals	4.6 ± 0.65
5.	Content of the modules	4.8 ± 0.44
6.	Educational materials	4.6 ± 0.50
7.	Trainer's knowledge of the manual	4.8 ± 0.41
8.	Trainer's teaching skills	4.8 ± 0.41
9.	Activities such as role plays	4.5 ± 0.38
10.	Overall quality of the training	4.8 ± 0.38

[a] Likert scale of 1-5, where 1 = poor, 2 = fair, 3 = good, 4 = very good, 5 = excellent

Participants were very pleased with the overall quality of the workshop, with a mean score of 4.8 based on a 1-5 Likert scale (Table 4). Some of the comments were: "*All the topics are very useful and beneficial to my work,*" and "*Teachers were encouraging, inspiring and motivating all the time*." The self-rated confidence to teach geriatric topics pre workshop was 3.34±0.97 and post workshop was 3.64±0.58 showing significantly improved scores (*P*=.025) after attending the workshop (not shown in table). Participants felt it was important to improve caregiver training on Yap (3.96 out of 4). The participants were eager to implement family caregiver training on their islands and plan to teach caregivers at the hospital, on boats, churches, homes, clubs, dispensary, and women's meeting houses.

In addition, there were 4 evening sessions held on weekdays in the community churches to perform outreach and education to Yapese family caregivers. Over 125 family caregivers received education on the proper use of cane and crutches, signs and symptoms of heart attack and stroke, and ways to recognize and reduce caregiver stress and burden.

Discussion

Aging has been a main feature of population trends of the 20th century, with most elderly people living in developing countries.[9] By 2050, nearly 1.2 billion of the expected 1.5 billion people age 65 or older will reside in today's less developed regions.[9] Strengths of this study included that the training was well attended and very well received. PIGEC is one of the first organizations to bring formal caregiver education and training to health professionals in this region. There has been a well documented need for continuing education of health workers in the US Affiliated Pacific Islands.[10]

One of the lessons learned from the field was the immense value of health professional visits to the Yapese homes. On the final day of training, participants and faculty were divided into 4 teams according to geographic zones. Standardized home visit geriatric assessment tools such as medication reconciliation, home safety, and falls checklist were provided to the teams. This brought the week-long training into culmination in the home, where participants could provide caregiver education and receive mentoring at the same time. Community health workers and public health nurses are at the front lines of the delivery of healthcare across the islands. A survey of zone nurses in Fiji revealed that nurses had little awareness of geriatric assessment procedures.[11] This was similar for Yap too, hence the planning committee had requested for standardized home visit geriatric assessment tools.

A small sample size and lack of availability of culturally appropriate standardized questionnaires were some of the limitations of this study. While there are disease specific family questionnaires available, validated tools to assess general family caregiver knowledge and skills in caring for the elderly are limited. The PCC pre-post test containing 28 multiple-choice questions was used to assess knowledge of core geriatric topics. The caregiver handouts were translated into Yapese, but not into all of the outer island languages such as Satawalese and Ulithian.

Geriatric medicine skills and confidence to teach scores of the participants improved significantly after attending the workshop. Although the proportion of the aging population has dramatically increased in developing countries, there is limited data on the availability of geriatric care and skills of the healthcare workforce especially in the Pacific Islands. This article contributes to the literature by presenting an update on caregiving in Yap. This training curriculum is similar to the Italian caregiver educational program, which has been structured in lessons to analyze the deepening of chronic diseases related to different areas of medical interventions and in practical sessions guided to support the family in the acquisition of skills and competencies for the care management of patients at home.[12]

While the participants incorporated caregiver education into their work and communities, there has been no formal 32-hour course offered due to lack of funds. The administration and leadership at the Department of Health Services in partnership with Yap AHEC is committed to offering this course as a part of caregiver education at the hospital. PIGEC has recently been awarded another Geriatrics Workforce Enhancement Program (GWEP) grant and will partner with Yap AHEC in 2020 with the common goal of building an age-friendly health system in FSM. This will be accomplished by teaching and evaluating the curriculum, which includes principles of the 4Ms (Medication, Mentation, Mobility and what Matters).[13] Yap AHEC, either though in-person sessions or using video recordings, will disseminate this course to the other islands in Micronesia.

Conclusion

The culture of Yap honors and respects its elderly population. With empowerment of caregivers through family caregiver training programs, better care for the elderly and disabled can be envisioned. Reduction in caregiver stress and burden will facilitate smooth transitions of care from the hospital back to the community. Yap AHEC is committed to offering the Family Caregiving Certificate at Yap Memorial Hospital and in the community.

Conflict of Interest

None of the authors identify a conflict of interest.

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References

1. Central Intelligence Agency. The World Factbook: Federated States of Micronesia. https://www.cia.gov/library/publications/the-world-factbook/geos/print_fm.html. Accessed October 26, 2019.
2. Yap Branch Statistics Office, Division of Statistics. Yap State Census Report. 2000 FSM Census of Population and Housing. http://pacificweb.org/wp-content/uploads/2018/05/2000-Yap-Census-Report_Final.pdf. Accessed 27 July 2019.
3. Lingenfelter, SG. *Yap: Political Leadership and Cultural Change in an Island Society.* Honolulu: University Press of Hawaii; 1975.
4. Gillilland CLC. *Stone Money of Yap: A Numismatic Survey*. Smithsonian Studies in History and Technology; 1975.
5. FSM Office of Statistics, Division of Statistics. Summary analysis of key indicators from the FSM 2010 census of population and housing. http://prism.spc.int/images/census_reports/FSM_2010_Census_Indicators_Final.pdf. Accessed October 26, 2019.
6. Maskarinec GG, Yalmadau K, Maluchmai MR, et al. Palliative care and traditional practices of death and dying in Wa'ab (Yap Proper) and in the Outer Islands of Yap. *Hawaii Med J*. 2011;70(11 Suppl 2):27-30.
7. Fernandes R, Osarch S, Bell CL et al. Aging and caregiving in the Republic of Palau. *J Cross Cult Gerontol.* 2013;28(2):167-180.
8. Dever G, Finau SA, Kuartei S, et al. The Palau AHEC – academizing the public health work plan: capacity development and innovation in Micronesia. *Pac Health Dialog.* 2005;12(1):110-7.
9. Kinsella K, Phillips DR. Global aging: the challenge of success. *Population Bulletin*. 2005;60(1):1-44. Population Reference Bureau, Inc.
10. Chen TH, Buenconsejo-Lum LE, Palafox NA. Pacific basin health worker training in the United States-Affiliated Pacific Islands: needs assessment and priorities for a continuing health care professional development program: executive summary. *Pac Health Dialog.* 2007;14(1):15-21.
11. Naduva A. Geriatric assessments during health promotional home visits by zone nurses of the Suva subdivision, Fiji. *Pac Health Dialog.* 2007;14(2):23-28.
12. Pennacchini M, Petriccione A, Sisto A, et al. Family caregiver education: an Italian experience. *Clin Ter.* 2014;165(5):e357-61.
13. Institute for Healthcare Improvement. http://www.ihi.org/Engage/Initiatives/Age-Friendly-Health-Systems/Pages/default.aspx. Accessed July 28, 2019.