



Marshallese Mobile Screening Clinic Project (MMSCP)

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Research Article

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Abstract

Objective: To improve clinical outcomes and health access by providing community health education and wellness screening to the under-represented Marshallese population in Hawaii.

Methods: Three student pharmacists and a faculty member formed the Marshallese Mobile Screening Clinic Project (MMSCP) team. The team traveled to specific churches and community events to offer health education and screenings. Marshallese interpreters helped the participants to complete questionnaires and consent forms before they began the screening process. Student pharmacists then conducted Hemoglobin A_{1c}, blood pressure and cholesterol tests and the results were interpreted to the participants.

If a participant was diagnosed with symptoms of diabetes, abnormal blood pressure or cholesterol levels were identified, they were referred to the Diabetes Education Program at Hilo Bay Clinic for medical treatment. Student pharmacists collaborated with Hilo Bay Clinic professionals to educate those patients on the importance of medication use and adherence. A follow up plan every three months would help to monitor clinical outcomes.

Results: Results from the initial evaluation of the MMSCP project were positive. Thirty-four participants received free health care screenings during the first six months of the project of which 59% requested a formal referral to Hilo Bay Clinic for health services. Half of the total participants did not receive any health care services regularly prior to this project. Demographic data revealed that 50% of the participants were above the age of 40.

Conclusion: The MMSCP project is able to empower the Marshallese to lead healthier lives and seek out medical care

at the onset of illness when it is most treatable. This project is a clear example of how creativity, partnership, and careful planning can allow pharmacists and student pharmacists to have a direct impact on an underserved population's access to health care.

Keywords: Marshallese, Health Screening, Medication Adherence, Referral, Health Education

Introduction

Due to the unique panorama of Marshallese history, culture, geography and political relationship with the United States, the Marshallese immigrant integration on the Hawaiian Islands is complex and multi-faceted. Many factors contribute to the resistance found on the part of numerous Marshallese people to attain medical attention in Hawaii for their pressing health care needs. According to the 2012 U.S. Census Bureau, Native Hawaiian and Other Pacific Islanders (NHOPI) represent the original people of Hawaii, Guam, Tonga, Samoa, Polynesia, Micronesia, Melanesia, Australia, and New Zealand. In the state of Hawaii, the NHOPI population is approximately 363,000 as compared to 1.2

million NHOPI people nationwide.¹ Of the NHOPI population, the Marshallese people are of particular importance to Hawaii and the United States due to the Compact of Free Association (COFA) act that attempts to provide some compensation and retribution to the Marshallese people who suffered from the consequences of the 67 atomic tests performed by the United States on their homelands. The exposure to radioactivity, a result of the atomic tests, was equal to 1.7 times that of the



Hiroshima detonation. As a result of the COFA act, the Marshallese population has grown in Hawaii from 2500 people in 1997 to 3000 people in 2003.² Based on the 2003 U.S. Census, 88.6% of the Marshallese population that resides in Hawaii migrated to Hawaii after the establishment of the COFA act.²

Many of the Marshallese people attempt to take advantage of the COFA treaty benefits by migrating to Hawaii for better medical care, access to education, and greater job opportunities. Upon arrival in the Hawaiian Islands, Marshallese people are faced with financial hardships as they quickly learn that the cost of living is much higher than in the Republic of the Marshall Islands (RMI). Many immigrants to Hawaii resort to living with other family members or alternatively move into homeless shelters. In 2014, the median household income for a Marshallese family was \$18,500 as compared to the median household income in Hawaii which approximated \$69,592.00.³ Like much of the rest of the United States, the state of Hawaii is also facing a shortage of employment opportunities, making it more difficult for immigrant Marshallese people to find jobs. In 2010, a Hawaii newspaper reported that Hawaii spends \$120 million on medical insurance, education, and other benefits for the Marshallese population of which only \$11 million is reimbursed by the federal government.⁴

Many Marshallese families opt out of obtaining medical care for fear of increasing their financial burdens. Furthermore, due to previous lack of access and little health care education, many Marshallese people are unaware of the severity and the consequences of untreated medical conditions, thereby making the obtainment of treatment an insignificant priority. However, obtaining medical treatment for those that need it should be of great priority because many Marshallese people in the RMI are at high risk for diabetes and diabetes-related complications. In addition, Marshallese living in the RMI has a 20% prevalence of diabetes in people 20 years of age or older compared to 8.3% and 4% for the United States and the world, respectively.⁵ The rapid industrialization, increased

calorie diet, and sedentary lifestyle occurring in the RMI may account for the large disparity between Pacific Islanders and the rest of the United States.⁶⁻⁷ Thus, before immigrating to Hawaii, this population may be predisposed to having diabetes.

When the Marshallese elected to care for their health conditions, they commonly choose to turn to traditional practices such as prayer, social interaction, massage, and traditional medicine because these are common practices in the RMI. When they have no other choice but to seek medical attention if it is available, obtaining culturally appropriate treatment becomes a significant barrier. Language barriers worsen the problem, which may prevent health care providers from completely understanding and treating the population's medical problems. In Hawaii, this barrier may be worsening as the percentage of English speaking Marshallese decreased from 17.8% to 6.8% from 1997 to 2003, respectively.² Overcoming these barriers is difficult for health care providers since the Marshallese are a relatively new population to Hawaii and little is known about their culture. When compounded by language and cultural barriers, it becomes extremely difficult for health care providers to diagnose and treat these patients in a normal health care setting.

The Marshallese Mobile Screening Clinic Project (MMSCP) was designed to provide health education and wellness screening to the under-represented Marshallese population in Hawaii. The project aimed to increase awareness about prevalent disease states affecting this minority population, identify members of the community at risk for diabetes, hyperlipidemia and hypertension, provide wellness/lifestyle counseling, and provide referrals to accessible, health care services offered at reasonable costs. The MMSCP project team consisted of three University of Hawaii at



Hilo, Daniel K. Inouye College of Pharmacy (DKICOP) student pharmacists and one DKICOP faculty member. The team traveled to specific churches and community events to offer free blood pressure, cholesterol, and diabetes screenings. Through the use of Marshallese interpreters, student pharmacists provided wellness counseling and referrals for patients to the Hilo Bay Clinic for treatment. If abnormal A_{1c} was noted, DKICOP student pharmacists referred patients to the Hilo Bay Clinic's Diabetes Education program⁸. Additionally, the MMSCP project aimed to discover effective strategies for providing care and increasing treatment adherence within this population whose cultural beliefs surrounding healthcare diverge significantly from the contemporary, western medical paradigm.

Material and Method

The MMSCP primary project goals were to identify Marshallese patients who suffered from symptoms of diabetes that required interventions, educate Marshallese patients on their health conditions, as well as the American health care system, and to provide culturally sensitive information, utilizing both the Marshallese and English languages. To accomplish these primary outcomes, the mobile clinic offered free screenings that included Hemoglobin A_{1c} tests. These were used to identify patients who might have diabetes or pre-diabetes but were unaware of their conditions due to the lack of access to medical care.

Secondary goals included addressing hypertension and hyperlipidemia, conditions that were commonly associated with diabetes, through the use of blood pressure and cholesterol screenings. Preliminary data indicated that participants might have isolated hypertension or hyperlipidemia in the absence of the signs and symptoms of diabetes.

To achieve the primary and secondary goals, mobile clinics organized through church pastors and leaders in the Marshallese communities, were held at local churches throughout the community. Marshallese interpreters were able to help participants to complete questionnaires and consent forms, and to answer any questions or concerns that participants might have before they began the screening process. Student pharmacists would then conduct

Hemoglobin A_{1c}, blood pressure and cholesterol tests and interpreted the help of Marshallese interpreters to communicate with the participants. Participants were encouraged to maintain a healthy lifestyle, making lifestyle modifications, or to see a health care provider if abnormal laboratory values were noted.

Once participants with symptoms of diabetes were identified, they were referred to the Diabetes Education program at Hilo Bay Clinic where participants could access to medical treatment provided by the health care team through the weekly diabetes education classes. MMSCP team members worked alongside with the Hilo Bay Clinic health care professionals to educate participants on the disease process, healthy eating, exercise, medication use and adherence, drug monitoring, and short-term and long-term complication management. Participants with symptoms of isolated hypertension or hyperlipidemia were also encouraged to attend classes to learn how to prevent diabetes along with learning how to manage their disease conditions and to maintain a healthy lifestyle. Classes were held in both English and Marshallese languages in hopes of reaching a greater portion of the participants along with making them felt comfortable when attending those classes.

When participants attended the weekly classes, MMSCP team members assisted participants in monitoring their weight, blood sugar, and blood pressure. Following the diabetes education class, participants were also able to seek medical attention from the Hilo Bay Clinic health care team if they experience any health complications even if they are irrelevant to their chronic conditions. Student pharmacists were able to collaborate with Hilo Bay Clinic health care professionals to modify medication therapy as well as educating patients on the importance of medication adherence,



which was a common problem in the Marshallese population. A follow up visit with the participants every three months to obtain Hemoglobin A_{1c}, blood pressure, and cholesterol tests was essential to monitor the participants' symptoms of diabetes, hypertension, and hyperlipidemia. This would be an effective way of monitoring participant's the clinical outcomes or medication adherence. Thus, participants with positive test results might provide testimonials as positive role models for those who were nonadherence to treatment therapy.

Results and Discussion

Thirty-four participants were screened at three local Marshallese churches during 3 separate community events. The age range for majority of the participants was between 21-60 years of age with 47% of them was male and 53% was female. Economic status among the participants was low income with 91% of them earning less than \$25,000.00 per year. Only 3% of the participants had earned a bachelor degree with majority of them not even completed a high school education. Table 1 showed the demographic data and characteristic of the Marshallese participants in the MMSCP project.

Table 1. Demographic Data and Characteristics

Demographic Characteristic	Total Sample (N=34)	Percentage
Age	< 20	8 23%
	21- 40	9 27%
	41- 60	11 32%
	> 60	6 18%
Gender	Male	16 47%
	Female	18 53%
Income	< \$25K	31 91%
	\$25K-\$55K	2 6%
	> \$55K	1 3%
Education	Less than High School	15 44%
	High School Graduate	11 32%
	Some college but no Degree	7 21%
	Bachelor Degree	1 3%
	Graduate Degree	0 0%

From Table 2, results from the initial evaluation of the MMSCP project were positive. Of the thirty-four people received free health care screenings, 59% requested formal referral to Hilo Bay Clinic services.

From the study, 30 participants had health insurance, but only 50% of the participants received regular health care services. 64% of the participants were newly identified as possibly having diabetes, hyperlipidemia, or hypertension. However 59% of the participants requested referral to Hilo bay Clinic for follow up treatment.

Table 2. Health Care Screening Data

		Total Sample (N=34)	Percentage
Health Insurance	Yes	30	88%
	No	4	12%
Received health care regularly prior MMSCP	Yes	16	50%
	No	16	50%
Requested referral to Hilo Bay Clinic following MMSCP	Yes	20	59%
	No	9	26%
	Unsure	5	15%

Thus, results from this initial evaluation of the MMSCP project were telling. Many Marshallese were unaware of their health status, which also contributed to the high prevalence of the long-term complication of type 2 diabetes mellitus among this population. Their willingness to be referred to Hilo Bay Clinic might increase awareness and education regarding their health which might decrease the health disparity among this population. These preliminary health screening data would add to the understanding of disease prevalence and aid healthcare providers in providing appropriate and timely therapy to this population. Outcomes of the initial results reaffirm the vital need for continued screening

MMSCP was committed to aid the Marshallese population in overcoming barriers that could prevent culturally appropriate healthcare. The goal to empower the Marshallese to lead healthier lives and to seek out medical care at the



onset of illness was imperative. Broadening the scope of screening to include other under-represented Pacific Islander populations would provide a greater representation of prevailing needs. This project was an example of how creativity, partnership, and planning can allow pharmacists and student pharmacists to directly impact an under-represented population's access to culturally appropriate healthcare.

Due to the positive participant response, the three churches who hosted the MMSCP had invited the MMSCP team back for future screenings at three month intervals. Further informal feedback was solicited by the MMSCP team, and carried out via a culturally appropriate, yet informal method of feedback, referred to as "talking story" by island residents. MMSCP team members took time to speak directly with the participating church pastors and interpreters about their understanding of the participant's experience. From this initial feedback the MMSCP project received positive reviews from the participants who expressed to their church leaders that they had a very agreeable experience with the MMSCP team members. Although some participants felt uncomfortable about the screening tests, those that were more familiar with the health care team were able to orient their unfamiliar family and friends to the process. These family members were able to highlight the experience of obtaining health care as well as communicating the benefits of obtaining free screening tests that could often be very expensive, as a positive one. Due to a number of factors, the participants were very appreciative of the MMSCP project and were very eager for these screening services to continue in the future. Based on the experiences of the initial phase of the MMSCP, a more formalized program evaluation plan has been designed for the next academic year.

The MMSCP was a prime example of student pharmacists working to meet the overarching goals established by Healthy People 2020. Through their collaboration across numerous sectors (i.e. education, non-profit clinics, and religious community centers) the MMSCP had promoted specific health education to a targeted population in order to enable individuals to make informed health decisions, an imperative called for by Healthy People 2020. In establishing this project, students

had identified an under-represented population and defined a mission and vision for the project. They had also mobilized the community by establishing collaborations with community partners who could be an asset to ensuring the success of the project. The project was currently in its initial implementation stages; however, steps had been established and laid out for its continued expansion and growth including evaluation and assessment strategies for improvement. Through its interventions, the MMSCP also be able to develop in the Marshallese people, and DKICOP student pharmacists, a greater understanding of healthcare consumerism. By empowering the Marshallese to lead healthier lives and seek out medical care at the onset of illness when it is more easily treatable, the MMSCP project aimed to, save thousands of dollars for their patients and also for the state of Hawaii. Furthermore, DKICOP student pharmacists were also able to serve as a resource for this population, when needed, pointing them towards state and federal resources, pharmaceutical company programs, and other non-profit cost saving plans that could make health care more accessible.

Conclusion

This student-initiated, engaged service learning innovation was a clear example of how creativity, partnership, and careful planning could allow pharmacists and student pharmacists to have a direct impact on an under-represented population's access to and attitude towards health care.

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Declaration

This project was accepted as a poster presentation at the American Pharmacist Association (APhA) Annual Meeting & Exposition, March 9-12, 2012 in New Orleans, Louisiana, USA. Also, part of the preliminary data was accepted as an oral presentation at the 12th Asian Conference on Clinical Pharmacy, July 7-9, 2012 in Hong Kong SAR, China.

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AUTHORS' CONTRIBUTIONS

Authors contributed equally to all aspects of the study.

PEER REVIEW

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CONFLICTS OF INTEREST

The authors declare that they have no competing interests.