FACTORs INFLUENTIAL IN RECRUITMENT TO HEALTH CAREERS IN MICRONESIAN STUDENTS

A THESIS SUBMITTED TO THE GRADUATE DIVISION OF THE UNIVERSITY OF HAWAI‘I IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF SCIENCE

IN

BIOMEDICAL SCIENCES

DECEMBER 2005

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ACKNOWLEDGEMENTS:

This study was supported by two NIH grants from National Center for Research Services: 5R25RR029321-02 and P20RR11091.

I would like to thank Ms. Nia Aitaoto for her assistance in collecting data in six different languages and translating it exceptionally well.

I am grateful to all my friends in the Master’s Program for the moral support and critical comments throughout the past year.

Finally, I would like to thank Dr. Rosanne Harrigan for her unfailing guidance and support throughout the two years of Master’s training.
ABSTRACT

Background: Micronesia is a remote region that faces severe health disparities when compared to developed countries. One method of reducing these disparities is to develop an adequate healthcare workforce.

Methods: We interviewed 32 Micronesian providers to determine the factors that helped or hindered them on their pathway to medical careers.

Results: Having a family member in healthcare and the desire to help were the primary factors responsible for students' interest in health careers. The greatest barriers were a poor educational foundation and the attractiveness of other professions. For successful completion of training, family support, financial support and personal commitment were the most important factors, while barriers included the lack of an organized career pipeline program and limited academic preparation.

Conclusions: Family, academic and guidance factors have the greatest impact upon Micronesian students' career pathways. This knowledge combined with future research may facilitate the development of healthcare recruitment and training programs.
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LIST OF ABREVIATIONS

List of Abbreviations

AHEC – Area Health Education Center
CHS-Committee on Human Subject
CNMI-Commonwealth of the Northern Mariana Islands
FSM – Federated States of Micronesia
GPA-Grade point average
HPSA-Health Professions Shortage Area
IMR-Infant Mortality Rate
IOM –Institute of Medicine
K-Kindergarten
MD-Medical Doctor
MO-Medical Officer
PAEP-Prefreshman Academic Enrichment Program
PSAT-Preliminary Scholastic Aptitude Test
RMI – Republic of the Marshall Islands
ROP – Republic of Palau
US- United States
USAPI – U.S.-Associated Pacific Islands
PREFACE

The purpose of this project is to determine the most effective methods for assisting Micronesian students in successfully pursuing careers in health sciences. The findings will provide direction for training and programs aimed at developing the health workforce in Micronesia.
CHAPTER 1: INTRODUCTION TO THE REGION

Micronesia is a group of more than 1,500 islands in the northwest Pacific Basin spread over an area larger than that of the United States. Most of these islands are either territories of, or closely affiliated with the United States and referred to as the United States Associated Pacific Islands (USAPI). The USAPI countries in Micronesia include Guam; the Commonwealth of the Northern Mariana Islands (CNMI); the Republic of Palau (ROP); the Federated States of Micronesia (FSM) which consists of the states of Chuuk, Kosrae, Pohnpei and Yap; and the Republic of the Marshall Islands (RMI). The total population of the U.S. affiliated Pacific Islands is just over 450,000 inhabitants. These developing countries have severely limited resources, particularly in the areas of healthcare.

Micronesians are considered part of the under-served Asian American and Pacific Islander minority. The people of Micronesia are characterized as low income. They have the double jeopardy of being over-represented in morbidity and mortality from both non-communicable\(^1\) and infectious diseases. Diseases rarely seen in the US, such as kwashiorkor, marasmus, Vitamin A deficiency, dengue fever, measles and cholera are prevalent in this region\(^2,3\). The World Health Organization has documented the health disparities existing in the Pacific Basin as outlined in Table 1 below.
TABLE 1: Health disparities among the U.S.-Associated Pacific Islands\textsuperscript{4,5}

<table>
<thead>
<tr>
<th>Country</th>
<th>Population</th>
<th>Life expectancy (yrs)</th>
<th>Under age 5 mortality/1000 live births</th>
<th>Fertility rate per woman</th>
<th>Per capita health expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S.</td>
<td>294,043,000</td>
<td>77.0</td>
<td>8.0</td>
<td>2.1</td>
<td>$5,274</td>
</tr>
<tr>
<td>Guam</td>
<td>163,000</td>
<td>77.8</td>
<td>12.2</td>
<td>2.7</td>
<td>$1,032</td>
</tr>
<tr>
<td>CNMI</td>
<td>78,000</td>
<td>75.7</td>
<td>7.43</td>
<td>1.3</td>
<td>$519</td>
</tr>
<tr>
<td>ROP</td>
<td>20,000</td>
<td>68.0</td>
<td>29.0</td>
<td>1.6</td>
<td>$439</td>
</tr>
<tr>
<td>FSM</td>
<td>109,000</td>
<td>70.0</td>
<td>23.0</td>
<td>4.4</td>
<td>$87</td>
</tr>
<tr>
<td>RMI</td>
<td>53,000</td>
<td>64.2</td>
<td>60.5</td>
<td>5.7</td>
<td>$248</td>
</tr>
</tbody>
</table>

As demonstrated in Table 1, these areas have life expectancies up to 12 years shorter than in the U.S., childhood mortality as much as 6 times that of the U.S., and fertility rates in the RMI of nearly 3 times that of the U.S. Health statistics such as these indicate a need for additional resources to the region.

There are many possible causes for poor health statistics in this region. One remedy for the situation is to make sure there is an adequate workforce to care for individuals. The need for more providers is demonstrated by the number of countries in the region that have a score of 25, the highest possible score, on the Health Professional Shortage Area (HPSA) calculation from the US Health Resources and Services Administration of Department of Health and Human Services (see table 2).
TABLE 2 Underservice Statistics--Primary Care HPSAs in the Pacific

<table>
<thead>
<tr>
<th>Area/Jurisdiction</th>
<th>Score (Scale of 0-25)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chuuk</td>
<td>25*</td>
</tr>
<tr>
<td>Kosrae</td>
<td>25*</td>
</tr>
<tr>
<td>Pohnpei</td>
<td>25*</td>
</tr>
<tr>
<td>Yap</td>
<td>25*</td>
</tr>
<tr>
<td>Palau</td>
<td>22</td>
</tr>
<tr>
<td>CNMI</td>
<td>18</td>
</tr>
<tr>
<td>Guam</td>
<td>5</td>
</tr>
</tbody>
</table>

*25 represents the greatest level of need.

The HPSA numbers indicate that this region is the most underserved region of all US areas. A first step therefore in improving healthcare, is to develop an adequate workforce that can care for the public health and medical needs of the population.

The one program designed to train regional medical officer physicians in Micronesia was closed due to lack of funding in 1997. Now the only training programs for health professions that exist in Micronesia are four community colleges offering 2 year nursing degrees, and one four year college offering a nursing degree. The University of Fiji offers distance Public Health training, and the University of Hilo recently began offering distance Pharmacy Technician training. However there is no regional medical school or allied health training programs.
Most of the training is therefore performed on the job, or students must travel to US or international health professions schools. The result is that students of Micronesia experience extreme challenges in both pursing health careers, and completing their training. In order to elucidate factors that would help in the goal of expanding the workforce of the region, the investigator team interviewed practicing healthcare providers to gain insight into the recruitment and training needs of future healthcare students.
CHAPTER 2: BACKGROUND

The body of literature examining health careers recruitment and retention of minority students documents many challenges and offers various ideas for program development and improvement. Factors that have been shown to positively impact the pursuit of higher education include socioeconomic factors, academic ability, cultural values conducive to education and a supportive background environment. When pursuit of science careers is examined in particular, students with higher average 8th grade math test scores were more likely to take math in high school and more likely to major in science and math in college. O'Brien et. al. found that science-mathematics self-efficacy was the factor most closely linked to career interest in science and was closely linked to academic performance as demonstrated by PSAT scores. Cooper et. al. found that math performance, particularly in early high school, was highly correlated with college preparatory GPA, eligibility and college type. Huang et. al. found that the likelihood of entering science and engineering postsecondary education was highest for students who took advanced science courses, were self-motivated to study science, and had parents with higher levels of education and high expectations for college education for their children.

Challenges in the pursuit of health science careers include the concern that ethnic minority students may be labeled as having less ability, possess low self-esteem, and are often clustered together in classes without teachers who are...
content experts. Lopez found that minority middle school students received lower grades, described lower levels of perceived ability and control than their Caucasian counterparts, and were significantly affected by stereotype threat. Maton et. al. describe the likelihood that minority students suffer academic and cultural isolation, motivational and performance vulnerability in the face of negative stereotypes resulting in low expectations for performance, non-supportive peers and discrimination.

There are even greater challenges for those minority students who decide to pursue health careers training. Bourne-Bowie documented that despite similar academic preparedness, African Americans have higher drop out rates than Caucasians while Huang found that underrepresented minority students tended to switch to other fields more often than non-minority students. Factors found to be directly related to continuation in educational programs were: financial support, program staff, research internships and mentors, existence of a program community, and strong positive expectations of their high academic potential from faculty.

Many program components have been described as effective for different ethnic groups. Harrigan et al.(2003) found that different ethic groups favored different interventions to promote success in science career education. Native Hawaiian students preferred addressing issues of low self esteem; Filipino students
described the need to confront family responsibilities and Samoan students remarked on homesickness and environmental factors\textsuperscript{19}.

Thomason and Thurber (1999) found that strategies that worked for successful training of Native American students included tailoring the admissions and training to the cultural needs of the group, beginning recruitment at an early age by recruiters who understand local cultural needs, advertising culturally appropriate programs and support services, and involving native communities in recruitment efforts\textsuperscript{20}. Just (1999) examined university retention of minorities and found that employing a diverse faculty and encouraging the maintenance of attachment to significant people from home was important\textsuperscript{21}. Salami studied the socio-personal and psychological factors impacting career choice in adolescents in Nigeria and found that the most important influences on career choice were career aspiration, sex-role stereotyping, family involvement, age and socioeconomic status, with family influence being particularly strong in this group\textsuperscript{22}. Hagedorn, Tibbetts, Moon and Lester (2004) examined the factors contributing to college retention in the Native Hawaiian Population and found that financial aid increases the chance of college completion more than any other single variable\textsuperscript{23}.

A 1999 report from Prince George's Community College in Maryland described factors that resulted in increasing recruitment and retention of minority students by 17% and 19% respectively as:
- Transitional support services for college; paid summer internships
- High school technology preparatory programs
- Career exploration workshops for 11th graders
- Academic support services for at risk students of color
- Math intervention programs
- Vocational support services
- Partnerships with 4 year colleges
- Supplemental instruction
- Tutoring
- Student support services
- Co-curricula activities programs (i.e., cultural, educational and recreational programs for minority students)\(^{24}\).

Maton et al. (2000) found that successful activities for retention of African American students include: knowledge and skill development, academic and social integration, support and motivation, and monitoring and advisement\(^{25}\).

Rami and Hansberry describe a successful nursing program for African American students that emphasizes family/community encouragement; academic training; mentoring, guidance and role modeling; ongoing support\(^{26}\). Glenn (2001) examined retention of African American male students in community colleges in Texas and found that the factors that were more common in the schools with the highest retention rates were freshman-only advising, orientation courses for
credit, monitoring of attendance for at-risk students, targeting minority groups with specific retention plans, and required tutorial and mentoring activities for certain at-risk students. Georges (2000) found that college retention rates were higher at those institutions with higher average financial aid awards and are higher at institutions traditionally oriented to a specific group, such as African Americans.

Armstrong and Thompson studied the impact of the Prefreshman Academic Enrichment Program (PAEP), a six-week math preparatory course for students who failed math placement tests before starting college. The program also included college preparation classes, regular student gatherings during the school year, a group list serve and the requirement that participants mentor for the summer program in future years. Compared to students who declined participation in the PAEP program, PAEP students had significantly higher retention rates and graduation rates (52.1% compared to 30.6%) and rates of graduation in life sciences (52% versus 21.1%). Qualitative feedback demonstrated that students reported improved self rating of mathematics ability and self confidence. Similarly, Blakely and Broussard describe the factors of a successful medical school preentry program as: intense assistance in study skills and test-taking skills, academic course work and academic and preprofessional counseling.
Finally, role models and advisors have been shown to be an important part of developing a career in science. Women who have been influenced positively by role models are more likely to believe that math, science, and engineering careers are compatible with family and marriage responsibilities and that multiple roles can be negotiated. In a mail survey of 546 female college students Nauta et. al. found that higher level career aspirations (such as planning to become a leader in the chosen field) was predicted by high self-efficacy scores and low role conflict scores. Self efficacy was predicted by years of schooling, level of ability and influence of positive role models, thus supporting the social-cognitive theory that higher level career aspirations can be predicted by a person’s beliefs about his/her ability to perform a task\textsuperscript{31}. Midlands Technical College found that 70% of student survey respondents reported that advisors were important in helping them decide on courses. Focus groups of minority students described factors most helpful to them as peer mentoring, information about academic and non-academic support services and workshops covering test taking skills, leadership development, goal setting and cultural diversity\textsuperscript{32}. 
CHAPTER 3: PURPOSE/RESEARCH QUESTION

In 1992, the US National Science Foundation convened a panel of experts to determine factors important to improving success of minority students in the sciences. This highly esteemed task force recommended: 1. Reaching out to, enriching and developing students, faculty and the community; 2. Improving instructional programs at all levels; 3. Strengthening historically black colleges and universities and minority institutions; 4. Providing special attention to graduate and postgraduate education and research programs; and 5. Creating a system of comprehensive assessment and evaluation of existing and proposed programs. These methods have been helpful to programs in the United States, however, there is no knowledge of what factors would be the most effective in the population of students from Micronesia. The current thesis examines the factors most frequently described as beneficial to and create barriers for health career recruitment and retention in Micronesians.
CHAPTER 4: METHOD

Exemption from institutional review board approval was obtained from the University of Hawaii Committee on Human Subjects (CHS No.13302). Funds for travel and data collection were obtained from the University of Hawaii Clinical Research Center through a minigrant funding process.

Survey tool: Survey questions were developed based on a comprehensive review of existing literature and results from informal discussions with teachers, providers, and students in the countries of Micronesia. The original questions were refined through team discussions and input from internal experts and community educators. We interviewed participants, usually in their primary language, to determine the most helpful factors related to pursuing health careers and completing training, as well as the barriers to the same. The questions utilized are listed in Table 3.
TABLE 3: Research questions

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>What healthcare field are you in?</td>
</tr>
<tr>
<td>2</td>
<td>How many hours a week do you see patients?</td>
</tr>
<tr>
<td>3</td>
<td>Can you describe your patients, ethnic group, employment, age range, insurance type?</td>
</tr>
<tr>
<td>4</td>
<td>Where did you grow up and where did you go to school?</td>
</tr>
<tr>
<td>5</td>
<td>What interested you in getting into the medical field?</td>
</tr>
<tr>
<td>6</td>
<td>What barriers are there (for you or others) to pursuing medical training?</td>
</tr>
<tr>
<td>7</td>
<td>What factors were the most helpful to you completing your training?</td>
</tr>
<tr>
<td>8</td>
<td>What barriers are there (for you and others) to completing medical training?</td>
</tr>
<tr>
<td>9</td>
<td>What factors do you think would help students pursue and complete training in healthcare?</td>
</tr>
<tr>
<td>10</td>
<td>Do you have any advice to students hoping to pursue careers in health field?</td>
</tr>
</tbody>
</table>

**Sample:** Participants were recruited through the Pacific Basin Medical Association, participants at Micronesian medical conferences, during visits for other medical research studies, and from the faculty and trainees of the Pacific Basin Area Health Education Centers in Micronesia (three centers exist, Palau, CNMI, Yap). Participants not practicing in Micronesia were excluded. Each participant consented verbally, and all data was kept confidential. Thirty-three Micronesian health professionals from the five jurisdictions: Palau, Federated
States of Micronesia (Yap, Chuuk, Kosrae, Pohnpei), Commonwealth of the Northern Mariana Islands, Republic of the Marshall Islands, and Guam were invited to participate.

Procedures: Interviews were conducted by two trained investigators (one a physician and one Master's trained investigator familiar with the region and the languages of the region). Each interview was conducted in person, usually in the primary language of the interviewee. Interview results were typed or written up in English for each question.

Analysis: Interview responses were tabulated. Qualitative results were clustered by themes using card sorting and negotiation between the two researchers. Responses by theme were then tabulated for frequencies and the researchers negotiated the most important participant comments for dissemination.
CHAPTER 5: RESULTS

Demographics and training: Thirty two interviews total were conducted across the region (one participant declined participation). The interviewees were nurses, physicians, medical officer physicians, medical technologists and public health workers. Of the 32 participants, 14 were physicians (MD or MO); 14 nurses; and 4 public health workers or medical technicians. The interviews were distributed over the 5 USAPIs previously mentioned. The breakdown of the individuals by country will not be shared so that confidentiality can be maintained within these small island states, territories and countries.

Interviewees were evenly balanced between males and females (16 men and 16 women). Twenty eight of the interviewees saw patients more than or equal to 20 hours a week, and four (primarily nursing and public health) spent less than 20 hours a week in direct patient care. Question 3 regarding patient demographics was difficult for all participants to answer, as there is very little insurance in the region, and the patients are primarily of the local ethnicity, “We see whoever comes.”

Of the 27 participants who answered the question regarding location of education, only 9 remained in Micronesia for all of their post secondary training. The rest completed training outside of Micronesia, to include Hawaii, Fiji, Papua New Guinea and the continental United States.
Positive forces in health careers:

In the population studied, it was expected that family encouragement would be the most important factor in pursuing healthcare careers; however this was not confirmed in this study. Instead, having a family member in healthcare was the most common answer to the question of “What interested you in a health career?”

**TABLE 4: What interested you in a health career?**

<table>
<thead>
<tr>
<th>Reason</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family member was a healthcare provider</td>
<td>13</td>
</tr>
<tr>
<td>Desire to help people</td>
<td>9</td>
</tr>
<tr>
<td>Health career opportunity opened up</td>
<td>7</td>
</tr>
<tr>
<td>Personal Experience with healthcare system</td>
<td>6</td>
</tr>
<tr>
<td>Social encouragement/mentor/role model</td>
<td>5</td>
</tr>
<tr>
<td>Desire for respect</td>
<td>4</td>
</tr>
<tr>
<td>Good in school</td>
<td>2</td>
</tr>
<tr>
<td>Interest in subject</td>
<td>2</td>
</tr>
<tr>
<td>Desire for good salary</td>
<td>1</td>
</tr>
<tr>
<td>Family Encouragement</td>
<td>1</td>
</tr>
</tbody>
</table>

As demonstrated in Table 4, the most important factor positively affecting students interested in health careers was a family member in healthcare (13/32). The desire to help people (9/32) and opportunities becoming available in healthcare training (7/32) also impacted the pursuit of health careers. Personal experiences with the healthcare system (6/32) such as having to wait for long
periods to see the doctor as a child and the desire to correct the situation, was the third most frequent answer. Social encouragement from a mentor or role model (5/32) was reported less than half as frequently as was having a family member in the profession. Finally, the desire for respect was an occasionally reported factor (4/32), but the desire for a good salary was only sited by one individual.

Help with completing training:
Although “family encouragement” was the least frequent response when participants were asked what interested them in health careers, “family support” was found to be the most important factor for completion of training as shown in Table 5.

**TABLE 5: What helped you complete your training?**

| Family Support (including image, prestige) | 26  |
| Financial support (family and government)  | 17  |
| Personal commitment (dedication, discipline and focus) | 17  |
| Social support during school (faculty, role model, counselor, colleagues) | 8   |
| Cultural aspects of the job (the fact that it is hands on) | 5   |
| Education (in Hawaii, in English)/Tutoring | 4   |
| Desire to make more money/Prestige/Respect | 3   |
| Job opening | 1   |
| Prayer/faith | 1   |
As the table shows, family encouragement (26/32) was the primary factor influencing the completion of training for the providers interviewed. Multiple participants stressed the importance of not embarrassing or disappointing the family, and to uphold the family’s image to avoid shame. Financial support (17/32) and personal commitment (17/32) were the second most frequently described factors influencing completion of training with seventeen respondents identifying these each factors as important. Social support during school in the form of faculty guidance, role modeling, counseling and colleague support was important to 8 of the 32 interviewees. Many described the difficulties of going to a new place and feeling homesick and alone, disconnected from their family and needing someone to keep them on track with their studies. Respondents reported having considered, or having friends who quit to work at McDonalds because they felt discouraged, and the pay seemed high in comparison to pay scales they had experienced.

**Barriers to pursuit:**

Study participants offered many descriptions of barriers in the pursuit of health careers which most often relate to the lack of education and early knowledge of the benefits of health careers as seen in Table 6.
TABLE 6: Barriers to pursuit of training

<table>
<thead>
<tr>
<th>Barriers to Health Science Careers</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor foundation training/limited educational opportunities/entrance exam</td>
<td>28</td>
</tr>
<tr>
<td>Other fields are more attractive (easier training, less physically demanding, better pay)</td>
<td>13</td>
</tr>
<tr>
<td>Lack of adequate counseling, mentoring, role model</td>
<td>10</td>
</tr>
<tr>
<td>Lack of funding</td>
<td>6</td>
</tr>
<tr>
<td>Lack of emotional support from family</td>
<td>5</td>
</tr>
<tr>
<td>Geographic separation from family</td>
<td>4</td>
</tr>
<tr>
<td>Desire to start a family</td>
<td>1</td>
</tr>
<tr>
<td>Lack of health careers class</td>
<td>1</td>
</tr>
</tbody>
</table>

As shown in Table 6, the factor that was seen as the greatest barrier to pursuing health science careers in Micronesia was academic preparation (28/32). Many individuals felt that they were not academically prepared for the entrance exam, others sited their lack of basic foundational training in math, science and especially English. A second barrier was the impression that other fields of work were more lucrative and less labor intensive, therefore, making them more appealing to students (13/32). The lack of role models, mentoring and career counseling was described as an obstacle to pursuit of health careers (10/32). Finally, the lack of funding was sited by six individuals, and the lack of emotional support from family was noted by five.
Barriers to completion of training:

When health care professionals were asked what barriers they felt made it difficult to complete healthcare training, structured pipeline programs, educational quality and family obligations were most commonly described (see Table 7).

**TABLE 7: Barriers to completing training**

<table>
<thead>
<tr>
<th>_barrier to completing training</th>
<th>count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of structured health careers preparation program, mentors, role models, peer support</td>
<td>16</td>
</tr>
<tr>
<td>Lack of foundation and English training</td>
<td>13</td>
</tr>
<tr>
<td>Family obligations</td>
<td>12</td>
</tr>
<tr>
<td>Lack of funding</td>
<td>7</td>
</tr>
<tr>
<td>Cultural differences/a different educational system</td>
<td>6</td>
</tr>
<tr>
<td>Poor infrastructure in country</td>
<td>1</td>
</tr>
<tr>
<td>Family separation</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 7 shows that the most common response was the lack of a structured health careers preparation program (16/32), that included mentors, tutors, role models and peer support in high school (16/32). The second greatest barrier was the lack of foundation training (13/32), especially in English. In particular, the participants felt they could not keep up with the coursework of college and graduate school. Family obligations (12/32) was the third most common barrier described by participants as a challenge. Most of these individuals felt family pressure to return home to help their families financially or pressure to have children. Lack of funding (7/32) was described as a challenge by seven
individuals. Cultural challenges (6/32) with the different educational system and learning new educational modalities were described by six people.

**For today's students:**

When asked what would help students pursue health careers and complete training, participants described improvements to the education and counseling system in the region (see table 8).

**TABLE 8: What would help students pursue training today**

<table>
<thead>
<tr>
<th>Option</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Better K-12 preparation, customized tutoring</td>
<td>16</td>
</tr>
<tr>
<td>Health Science track in high school with career counseling, mentoring, outreach network, summer internship, adds on the radio</td>
<td>12</td>
</tr>
<tr>
<td>Social support for transition to college</td>
<td>11</td>
</tr>
<tr>
<td>Better working environment/better pay/continuing ed</td>
<td>9</td>
</tr>
<tr>
<td>Family Support</td>
<td>3</td>
</tr>
<tr>
<td>Training being more community focused and in-country</td>
<td>2</td>
</tr>
<tr>
<td>More scholarships</td>
<td>2</td>
</tr>
</tbody>
</table>

As seen in Table 8, the most common response was better educational preparation (16/32). It was felt that this should include mentors and the existence of health science training tracks in high school to include components such as mentoring, counseling and outreach to community (12/32). Eleven individuals described the importance of social support for the transition to college.
and professional school. Almost a third of the interviewees felt that one thing that needs to change for more students to go into health careers was creating a better working environment for healthcare providers when they return to work after training (9/32).

**Advice to future students:**
Respondents all had ideas for students who may be thinking about health careers as described in Table 9.

**TABLE 9: Advice for students**

<table>
<thead>
<tr>
<th>Advice</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Get a strong educational foundation early</td>
<td>11</td>
</tr>
<tr>
<td>Make sure it is what you want to do</td>
<td>9</td>
</tr>
<tr>
<td>Focus/do not give up</td>
<td>5</td>
</tr>
<tr>
<td>Don’t worry about cost</td>
<td>1</td>
</tr>
<tr>
<td>Don’t get married yet</td>
<td>1</td>
</tr>
<tr>
<td>Stick together and help one and other</td>
<td>1</td>
</tr>
<tr>
<td>Tell your family “no”</td>
<td>1</td>
</tr>
</tbody>
</table>

Advice provided by interviewees for students who were considering pursuing health careers centered on insuring that they get a strong educational foundation (11/32) and to make sure that the career is what they want to do (9/32). Staying focused was also felt to be important (5/32).
Other factors mentioned included not having to worry about the cost, not getting married early, to stick together and help one another and to tell your family “no”.
CHAPTER 6: DISCUSSION

As was concluded in a previous study with Native Hawaiian, Filipino and Samoan students, the family was the single greatest factor impacting the pursuit and completion of health career training. The compiled interview results in this study demonstrate that in Micronesian populations, having a family member in healthcare had the most significant impact on fostering students to pursue a health career. The interviewees indicated that the family member was not necessarily in the same field of healthcare that they chose to pursue, but in any area of healthcare. The family member was not described as a role model or mentor, and in fact, such individuals were described as important separately from family members. While having a family member in healthcare had a great impact, family encouragement was the least mentioned enticement into healthcare. Therefore, more research is required to further delineate the impact of having a family member in healthcare on career choices.

In addition, family support was the most cited factor influencing the ability to complete health professions training, while simultaneously, family obligation was the third most common barrier to completing training. Family support was also mentioned as an important factor in support of students’ health careers training while at the same time, the respondent’s advice for future students was to say “no” to your family. In addition, lack of family support, geographic separation
from family and the desire to start a family were mentioned as barriers to pursuit of health careers.

Thus, family support is probably the single greatest positive factor impacting health workforce career choice in this population, while at the same time, it is also one of the most common barriers to health careers completion. Respondents explained that for Micronesian students, it is important to be part of a family or clan. That clan shares your identity and what you do reflects upon them. Therefore, both pride and shame are shared throughout the family unit. However, families often do not see the immediate value of pursuing a career which requires a prolonged course of study, but would prefer their youth to get jobs and help the family out in a timelier manner. Some students had to quit training to care for aging family members, and others to help run family businesses. If it was requested of them, they had little choice but to subjugate their career goals for their family. In addition, many women were pressured to start families and not pursue what is still considered by some to be 'men's work'. Families also provide some of the financial support required for training in addition to social support. If a student is to be successful, therefore, it is very important to have family support.

**Academic and social preparedness:**

The learning style of many Micronesia students follows the pattern of the
family playing a central role. Interviewees described how Micronesian students are accustomed to learning through oral histories and accomplishing tasks in a group setting. This is very different from the Western style of individual learning and written examinations. Therefore, there is a large cultural adjustment to be made when leaving the region for health professions training.

In addition, there is a special bond that is formed among Pacific Island students such that social groups are described as "surrogate" families. A great majority of those interviewed indicated that their Micronesian classmates are considered "brother" or "sister". Participants described the need for a social structure allowing for group activities of Micronesian students, positive peer pressure to study harder and complete training, and tutoring assistance to help with the adjustment to a new learning style. Local clubs, resources centers, tutors, counselors and role models are important in this and were recommended because students are more likely to complete training if they are guided, supported and helped through the educational process. This would be easier if the training program were located closer to home and utilized a learner centered culturally appropriate methodology that would maximize learning for Micronesian students.

In addition, in Micronesia, English is not the primary language and many students are learning English as a second language. Low reading proficiency and
language barriers are common when students attend Western schools. Without English skills it is very difficult for Micronesian students to learn all other subjects, including math and science. In addition, there is a lack of funding for teachers and counselors in the region. As a result, respondents described students lacking confidence and consequently not pushing themselves. Families may also tend not to push students, in contrast to the families of Southeastern Asian immigrants, who aggressively encourage children to pursue careers in medicine.34

Finally, the lack of exposure to career guidance is a common theme in Micronesia. Since there is a lack of adequate workforce, it follows that there are not enough role models. In addition, healthcare workers are described as too busy to go into schools and talk about their careers. Being overworked is also a factor discouraging students from considering healthcare a desirable field. Participants described the need for a better working environment and pay for healthcare workers, in order to increase the interest in such careers today. Study participants indicated that a strong vocational training program that began at an early age, included mentors, role models, in-school activities and special tutoring would improve interest in health careers, as would increased funding for schools, teachers and guidance counselors.
CHAPTER 7: CONCLUSIONS AND RECOMMENDATIONS

In order to meet the healthcare needs of Micronesia, a regional medical officer training program was established from 1987-1997. Supported by the United States government, this program trained 70 medical officer physicians (comparable to medical doctor degree from the United States, but which limited the practice location of graduates to the Pacific countries). It was a locally offered ladder style program that provided participants with a degree in allied health or nursing even if they didn't finish the five years of medical officer training. The program was offered in three locations in the region. The ten years of operation boosted the health workforce in the region by more than 100 individuals, a significant number for an area of 450,000 people. Program tuition was free to students, and students were recruited aggressively by teachers, government officials and healthcare workers. This five year long training program was designed to be culturally appropriate, locally based, and utilize extensive social support systems.

Since the end of the Medical Officer Training Program mentioned above, the only healthcare training programs located in the region are four associate level and one bachelor's level nursing programs, as well as the public health and pharmacy technician distance learning programs previously mentioned. These programs are country specific, not regional as was the case for the Medical Officer Training Program. The total nursing enrollments of all five schools
combined is very low, and of the students, a large proportion are immigrants from Southeast Asia who tend not to stay in the region after training, but rather seek more lucrative jobs elsewhere.

Therefore, in order to build up the necessary workforce, local students must be encouraged to enter the health workforce, they must have extensive academic preparation, be assisted with the difficult transition to distant training locations and be supported emotionally and financially throughout the process. Family factors must be given extensive attention, as well as the educational preparation that students receive.

In the group of Micronesian healthcare professionals interviewed, personal commitment was very high, and fear of failure, or bringing shame to their family was a significant motivator not usually described in US populations. Interestingly, racism was never mentioned by the participants, although cultural differences were noted. This may be due to the fact that most of the students attended schools in Hawaii, Papua New Guinea and Fiji for their post graduate training, areas that are more diverse than most schools in the United States.

Limitations of this study include the small numbers of individuals interviewed; however, many of the answers converged such that the authors believe that the results can be generalized to the region. Future research should be directed to
examine the specific influence of having a family member in healthcare or the pursuit of health care as a profession, this is not clear from the present study.
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