

Family Relationships, Household Strategies, and Hypertension Related Factors in Southeast Asian Refugee Communities in the United States

S. KAYO ROBINSON

The University of North Carolina at Greensboro, Greensboro, North Carolina, USA

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ABSTRACT

This literature review examines existing studies on the Southeast Asian refugee community and their health outcomes, specifically focusing on hypertension risks linked to family relationships, nutrition, and involuntary migration experiences. The reviewed studies found that poor family relationships, change in diet, and experiences of transnational relocation contributed to poorer health. Other factors such as past trauma experience, on-going alienation, day-to-day stressors such as poverty, cultural assimilation, and language barriers caused chronic stress among this group. Chronic stress is linked to hypertension, a risk factor for stroke, cardiovascular disease, and death. Cortisol is a hormone released in the body during times of stress. This biological marker for stress can be analyzed through saliva, blood, urine, as well as hair samples. Hair samples show measurements of long-term exposure to cortisol. Prolonged high levels of cortisol is associated with hypertension. Health beliefs and concepts in Western medicine also play important roles in hypertension risk and behaviors. Yet, the literature review revealed few, if any, studies designed to capture and explain the complexity of these factors and their role in pathways associated with chronic disease prevalence among Southeast Asian

refugee newcomer communities. Furthermore, the national-level data available fails to adequately represent intra-group diversity when reporting prevalence for the group. These issues have important implications for planning and implementing culturally tailored health education and awareness outreach to the Southeast Asian population, and for more research aimed at alleviating persistent health and hypertension ethnic disparities.

INTRODUCTION

Existing data and previous research on Southeast Asian refugees has found that health issues such as hypertension among these groups is extremely high. These individuals are exposed to many risk factors associated with hypertension, which include change in nutrition, family relationship strains, as well as limited health care access. They also experience stress-related hypertension due to involuntary transnational relocation, and other day-to-day stressors such as cultural assimilation, on-going alienation, and language and financial barriers. The persistent high levels of stress are associated with many health issues such as hypertension. Furthermore, these population groups lack sufficient knowledge on health. They are in need of a culturally tailored health education delivered to them as well as accessible resources in order to monitor their health and keep their hypertension under control.

In this review, I will cover four ethnic groups of the Southeast Asian population; Vietnamese, Cambodian, Laotian, and Hmong. This literature review examines stress factors that contribute to the prevalence of chronic disease among these immigrant groups. It focuses on hypertension related risk factors due to psychosocial stress factors among adults in the Southeast Asian refugee community in the United States. The review reveals the hardships encountered by refugee adults which then contribute to significant health problems. It aims to reveal data on their

health outcomes, and highlight ways in which culturally tailored health education and awareness outreach can be implemented.

Overview of the Southeast Asian Refugee Population in the United States

During the period of 1975 to 1995, approximately 3 million people fled Vietnam, Laos, and Cambodia to come to the United States, mostly due to political upheavals. Of those who fled, 1.75 million were Vietnamese refugees. Since then, The United States has resettled over 1.4 million of these refugees, with the majority being from Vietnam (Yee, 2001). These individuals have come out of conflict in their native country and involuntarily relocated to the United States. According to the United Nations High Commissioner for Refugees (UNHCR, n.d.), refugees are individuals who “owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality, and is unable to, or owing to such fear, is unwilling to avail himself of the protection of that country” (Refugees: Following Across Borders section, para. 3). Southeast Asian adult refugees face many stressors during and after involuntary migration. Acculturation stress is related to many health issues, including hypertension. For many Southeast Asian refugees, hypertension is associated with significant increase in body mass index, stressors that come from financial stressors, post-traumatic stressors from past traumatic events, and change in food preparation style due to lack of availability of traditional food, causing unhealthy lifestyle among them (Yee, 2001).

Overview of Hypertension

Hypertension, also known as high blood pressure, is a noncommunicable disease that affects about one billion people worldwide (Mohan et al., 2013). According to the Mayo Clinic

(2014), an individual can have hypertension for many years without displaying any symptoms. Hypertension develops over many years and is a silent condition, meaning it often progresses undetected. If hypertension remains uncontrolled, it can lead to serious health problems such as cardiovascular disease, stroke, and death (Mohan et al., 2013). However, hypertension can easily be detected early on. Once detected, an individual can work with their physician to control it (Mayo Clinic, 2014).

HYPERTENSION PREVALENCE

Southeast Asian Hypertension Prevalence and Prevalence in Families

Approximately 35% of adults in the Southeast Asia region have hypertension (Krishnan et al., 2013). A global status report provided by the World Health Organization (WHO) indicates that among adults in the Southeast Asia region aged 25 or older, hypertension prevalence for males were 37.3%, while prevalence for females were 34.9%, making the overall prevalence rate to be approximately 36.1% (WHO, 2013, p.1). Globally, the prevalence of hypertension is significantly higher males. However, the gender gap is much smaller in the Southeast Asia region. This accounts for approximately one-third of the population, and 1.5 million deaths annually (Mohan et al., 2013).

Refugee/Immigrant Hypertension Prevalence and Prevalence in Families

There is limited data available on the prevalence of hypertension among immigrants and refugees in the United States. One study assessing the prevalence of hypertension among refugee psychiatric patients from Bosnia, Somalia, Vietnam, and Cambodia revealed that hypertension prevalence was 42% among this group, which is higher than US norms (Kinzie et al., 2008).

Southeast Asian Refugee/Immigrant Hypertension Prevalence and Prevalence in Families

There is no national data available on the prevalence of hypertension among Southeast Asian refugees and immigrants. However, the health status of these groups come from smaller samples of state or local statistics. Furthermore, many of these local statistics are outdated, not consistent, and does not accurately represent the actual number of this population living with hypertension in the United States today. A study done in central Ohio revealed that 17% of newcomer Southeast Asian refugees were hypertensive (Chen et al., 1991). Another study done in Northern California revealed that 4.8% of recent Southeast Asian refugees have hypertension (Tanji et al., 1994). Finally, a study done in Connecticut revealed that 31% of of refugees from Vietnam and Cambodia reported to having hypertension (Wagner et al., 2013).

FACTORS ASSOCIATED WITH HYPERTENSION

Change in Nutrition

Diet is a strong predictor of health outcomes. Many refugees and immigrants have changed their eating habits upon arrival to the United States. Alteration in diet and food preparation style occurs because traditional foods that they are accustomed to eating in their native country are rarely available. The standard American diet is characterized as being high in sodium, sugar, and fat. According to Yee (2001), “While cultural preferences may remain quite traditional, use of American food substitutes, alteration of healthy food preparation styles, and lack of availability of traditional foods products may change nutrition patterns that may be damaging to the health of Southeast Asian elders” (Patterns of Health Risk: Physical Health section, para. 1). A diet having high sodium intake is one of the major risk factors in developing and sustaining hypertension. There is a direct association between sodium intake and blood pressure levels (Drenjancevic-peric et al., 2011). Other factors causing alteration in diet include

the easy access and overwhelming availability of highly processed foods at an affordable price. Furthermore, healthy food options are often times more expensive compared to highly processed foods. Immigrant and refugee populations who are often times facing financial constraints are limited in their options healthy food consumption.

Family Relationship Strain

Migrating to a foreign country often causes a shift in the dynamic of Southeast Asian refugee families. “Families were traditionally very large, and some had been polygamous, so resettlement meant that family members were often separated from loved ones” (Yee, 2001,). Some individuals have lost family members or came alone leaving many of them behind. This results in a different community and social networks available to them compared to the one available to them before resettlement. Alongside a shift in the family dynamic, family cohesion and adaptability are also challenged for this population (Meredith et al., 1986). Prior to arriving to the United States, parents often exhibited power and everyone else depended on their guidance and leadership. However with the language barrier that immigrant families face, children often take the role of being interpreters for their parents and other family members because they learn English at a much quicker pace. This results in parents having to be reliant on their children to complete major tasks, which can be stressful for the entire family and have serious implications on the family relationship. As a result, family relationship strains contribute to the stress experienced by refugee adults, contributing to high levels of stress (Gerin et al., 1992), which is then linked to hypertension.

Limited Health Care Access

According to Yee (2001), among Vietnamese, Cambodian, Hmong, and Laotian older adult refugees, “the most common reason for lack of health care access was due to lack of linguistically and culturally competent health care services” (Access and Utilization section, para. 1). Many of them desire to have adequate health care delivered to them, but are unable to due to these language barriers. Hospitals have limited translators readily available, especially with the variety in distinct dialects that that are spoken by the Southeast Asians. Depending on the region that the individual is from, their dialects may vary significantly. As a result, “They can’t effectively communicate with healthcare providers, and are unable to navigate the complicated system” (Wider Horizons, n.d., Our Stories Our Health section, para 2). For example, there are three major dialects spoken in Vietnam; Hanoi, Hue, and Saigon. However, there is a population of indigenous mountain people in the Central Highlands of Vietnam who have resettled in the United States called the Degar, also known as the Montagnard. There are over forty different tribe groups among the Montagnard, and they speak distinct languages from one another which have been derived from the Malayo-Polynesian and Mon-Khmer families (Degar Foundation, 2014).

Other Factors

Transnational relocation, cultural assimilation, ongoing alienation, as well as language and financial barriers contribute to stress experienced by Southeast Asian refugee communities. These stress-inducing factors tend to be interconnected with one another, rather than existing independently. Prolonged stress has numerous negative effects on the body, one of them being elevated blood pressure. Regarding the link between stress and hypertension, Mustacchi (1990) found that, “The acquisition of hypertension by populations abandoning their traditional mode of

living has been attributed to the sociocultural stress inherent in westernization...”(p. 180). This supports notions that there is an association between stress and hypertension, especially among immigrants and refugees. They have left their home and accustomed environment, having to transition to a new lifestyle that is unfamiliar to them. This type of acculturation are often full of many trials and obstacles that are difficult to undergo.

STRESS MEASUREMENT

Biological Marker: Cortisol

Cortisol is a hormone released in the body during times of stress. This biological marker for stress can have direct influences on the central nervous system, as it affects areas of the brain that are responsible for controlling blood pressure (Hamer & Steptoe, 2012). Thus, prolonged elevated levels of cortisol are associated with hypertension. Conventional methods of analyzing cortisol in the body includes measurements through saliva, blood, and urine samples. However, these measurements do not reflect an individual’s long term exposure to cortisol. Instead, they show states of cortisol levels which fluctuate over time. A recent advancement in analyzing cortisol secretion in the body is through scalp hair samples. This method is exceedingly reliable, as it does not fluctuate with time. Hair samples reflects an individual’s trait, as it shows long-term exposure to cortisol in the body (Steutde et al., 2013). Studies have shown that measuring cortisol through hair samples is very reliable, and the measures from hair samples are correlated with measures from saliva, blood, and urine (Stalder & Kirschbaum, 2012).

IMPROVING HEALTH STATUS

Education

There is a strong need for culturally tailored health education to be delivered to the Southeast Asian refugee community, as “93.8 percent did not know what blood pressure was. For example, 85 percent of the immigrants did not know what could be done to prevent heart disease” (Chen et al., 1991, p. 304). With hypertension being an immense concern for this group, it is important that they are informed about their personal health, and how they are at a high risk for acquiring hypertension. Education can have a significant impact on reducing hypertension prevalence rates, as recognizing facts about various risk factors associated with hypertension will encourage actions to be taken towards prevention and health monitoring. For example, teaching the importance of healthy eating and exercise will help spread awareness, especially with the consequences of high sodium intake as it is associated with raised blood pressure.

Diminish Language Barriers

One of the impediments to improving health status among Southeast Asian refugees include language barrier. Seeking health care is often times an unpleasant experience for these individuals due to miscommunication with their healthcare providers, as well as the lack of cultural sensitivity displayed in hospital settings. Many do not receive the appropriate care they need because they cannot effectively express their health concerns, nor understand what their physician is telling them. Suggestions for diminishing language and cultural barriers include increasing English proficiency of this population, as well as increasing availability of translators in the medical settings (Ngo et al., 2007). Solving the issue of miscommunication can promote regular health visits and screenings, which will result in prevention and early detection of chronic health conditions.

Stress Management

Many Southeast Asian refugees are experiencing stress-induced hypertension. These stressors can be attributed to their past traumatic experiences, day-to-day experiences following their involuntary migration, and financial limitations. Many result in excessive smoking, consumption of alcohol, and use of drugs to deal with such stress (Yee, 2001). However, these stress-management methods are not ideal, as they result in long-term negative health effects. An alternative option includes providing counseling services with appropriate prescribed medications to manage stress. Family therapy may also be effective to alleviate family relationship strains in order to improve communication, as well as teach skills to cope with stress and tragedy (Mayo Clinic, 2014). Nevertheless, such interventions targeting mental health of Southeast Asian refugee groups must consider the cultural background of their clients. There are many things to consider regarding this population such as the diversity in ethnic groups, religion, beliefs, and socioeconomic status (Williams, 1985). Therapists must consider the unique population they are serving in order to effectively deliver appropriate services.

Future Research

There are currently limited studies available designed to capture and explain the pathways associated with hypertension among Southeast Asian newcomer communities. These gaps in existing studies are contributing to the delay in the improvement of their health status. As previously stated, there are no national data available on the prevalence of hypertension among Southeast Asian refugees. This lack of data contributes to their continued health disparity, as no programs are being implemented to address the existing high prevalence of hypertension. There is a strong need for national data, that accurately represents the number of individuals in diverse populations living with hypertension in the United States today. Such investigation enables these

issues to be addressed, as well as provide better understanding of health disparities existing within Southeast Asian refugee groups.

CONCLUSION

Trauma experienced by resettled Southeast Asian refugees has long-term negative effects on their health outcomes. Due to difficulties in their acculturation process, many refugees have developed high prevalence of psychosomatic morbidity and hypertension. Many factors such as nutrition, family relationships, limited health care access, and stress due to transnational relocation, cultural assimilation, ongoing alienation, as well as language and financial barriers contributed to higher rates of hypertension, among Vietnamese, Cambodian, Laotian, and Hmong refugees. Studies show that increased cortisol concentration in the body is a biological indicator of chronic psychosocial stress, which is linked to hypertension, a risk factor for stroke, cardiovascular disease, and death. There is a lack of studies and data available on hypertension among this population. Persistent health disparities require more research on ways to reduce health disparities and improve health outcomes among the Southeast Asian refugee population. Through analysis of prevalence of hypertension and what is known about hypertension among Southeast Asian refugee communities in the United States, some suggestions for improving their health status were established.

REFERENCES

- Chen, M. S. J., Kuun, P., Guthrie, R., Li, W., & Zaharlick, A. (1991). Promoting heart health for Southeast Asians: A database for planning interventions. *Public Health Reports (Washington, D.C. : 1974)*, 106, 3.)
- Degar Foundation, Inc. (2014). *Who are degar?* Retrieved from

<http://www.degarfoundation.org/who-are-degar-2>

Drenjancevic-peric, I., Jelakovic, B., Lombard, J. H., Kunert, M. P., Kibel, A., & Gros, M.

(2011). High-salt diet and hypertension: Focus on the renin-angiotensin system. *Kidney & Blood Pressure Research*, 34(1), 1-11. doi: 10.1159/000320387

Gerin, W., Pieper, C., Levy, R., & Pickering, T. G. (1992). Social support in social interaction: a moderator of cardiovascular reactivity. *Psychosomatic Medicine*, 54,3.

Hamer, M., & Steptoe, A. (2012). Cortisol responses to mental stress and incident hypertension in healthy men and women. *The Journal of Clinical Endocrinology and Metabolism*, 97, 1, 29-34. doi: 10.1210/jc.2011-2132

Kinzie, J. D., Riley, C., McFarland, B., Hayes, M., Boehnlein, J., Leung, P., & Adams, G.

(2008). High prevalence rates of diabetes and hypertension among refugee psychiatric patients. *The Journal of Nervous and Mental Disease*, 196, 2, 108-12. doi: 10.1097/NMD.0b013e318162aa51

Krishnan, A., Garg, R., & Kahandaliyanage, A. (2013). Hypertension in the south-east asia region: an overview. *Regional Health Forum*, 17-1. Retrieved from

http://www.searo.who.int/publications/journals/regional_health_forum/rhfv17n1p7.pdf

Ngo, C., Le, D.N., Abesamis-Mendoza, N., Ho-Asjoe, H., Rey, M.J. (2007). Community health needs & resource assessment: An exploratory study of cambodians in the bronx. *New York, NY: NYU Center for the Study of Asian American Health*. Retrieved from

http://www.med.nyu.edu/asian-health/sites/default/files/asian-health2/chnra_cambodian_0.pdf

Mayo Clinic. (2014). *Diseases and conditions: High blood pressure (hypertension)*. Retrieved from
from
<http://www.mayoclinic.org/diseases-conditions/high-blood-pressure/basics/definition/con-20019580>

Mayo Clinic. (2014). *Tests and procedures: Family therapy*. Retrieved from
<http://www.mayoclinic.org/tests-procedures/family-therapy/basics/definition/prc-20014423>

Meredith, W. H., Abbott, D. A., & Cramer, S. L. (1986). Family stress and cultural adaptation: Home economics needs of lao hmong refugees. *Home Economics Research Journal*, 15, 2, 90-96. doi: 10.1177/1077727X8601500202

Mohan V., Seedat Y.K., & Pradeepa R. (2013). The rising burden of diabetes and hypertension in southeast asian and african regions: Need for effective strategies for prevention and control in primary health care settings. *International Journal of Hypertension*. 2013;2013:409083. doi:10.1155/2013/409083.

Mustacchi, P. (1990). Stress and hypertension. *The Western Journal of Medicine*, 153, 2, 180-5. Retrieved from
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1002505/pdf/westjmed00108-0070.pdf>

Stalder, T., & Kirschbaum, C. (January 01, 2012). Analysis of cortisol in hair--state of the art and future directions. *Brain, Behavior, and Immunity*, 26, 7, 1019-29. doi: 10.1016/j.bbi.2012.02.002

Stedte, S., Kirschbaum, C., Gao, W., Alexander, N., Schonfeld, S., Hoyer, J., & Stalder, T. (2013). Hair cortisol as a biomarker of traumatization in healthy individuals and

posttraumatic stress disorder patients. *Biological Psychiatry*, 74, 9, 639-646. doi:
10.1016/j.biopsych.2013.03.011

Tanji, J. L., Arevalo, J. A., Paliescheskey, M., Lee, L., & Alcalde, O. (1994). Prevalence rate of hypertension among recent southeast asian refugees to northern california. *The Journal of the American Board of Family Practice / American Board of Family Practice*, 7, 2.)

United Nations High Commissioner for Refugees. (n.d.). *Refugees: following across borders*
Retrieved from <http://www.unhcr.org/pages/49c3646c125.html>

Wagner, J., Burke, G., Kuoch, T., Scully, M., Armeli, S., & Rajan, T. V. (2013).

Trauma, healthcare access, and health outcomes among southeast asian refugees in connecticut. *Journal of Immigrant and Minority Health*, 15, 6, 1065-1072. doi:
10.1007/s10903-012-9715-2

Wider Horizons. (n.d.). *Our stories, our health: Dr. patient communication* Retrieved from
<http://www.whyy.org/widerhorizons/ourstories.html>

Williams, C. L. (1985). The southeast asian refugees and community mental health. *Journal of Community Psychology*, 13, 3, 258-269. doi:
10.1002/1520-6629(198507)13:3<258::AID-JCOP2290130303>3.0.CO;2-R

World Health Organization. (2011). *High blood pressure: Global and regional overview*.
Retrieved from
http://www.searo.who.int/entity/world_health_day/leaflet_burden_hbp_whd2013.pdf?ua=1

Yee, B.W.K. (2001). Health and health care of southeast asian american elders: Vietnamese,

cambodian, hmong and laotian elders. *Curriculum in ethnographics second edition*
(southeast asian module). Retrieved from <http://web.stanford.edu/group/ethnoger/>

SUMMARY & REFLECTION: WEEKLY MEETINGS

S. Kayo Robinson

The University of North Carolina at Greensboro

Senior Honors Project: Spring 2015

Lloyd International Honors College

Our weekly scheduled meetings for the Montagnard Hypertension Research Project were held every Thursday from 11am to 1pm. The purpose of these meetings was to provide updates in terms of where each team member stood with meeting their goals, discuss relevant research articles, sharing knowledge and information pertaining to the research, setting goals for the upcoming week, as well as scheduling upcoming events/presentations. Each person took turns to share what they have done or found over the course of the week, what they are currently working on, and what they are hoping to accomplish by our next scheduled weekly meeting.

What did you learn from the experience?

Through my attendance of the weekly research meetings, I learned the skills of preparation and teamwork management. For example, the meetings began with each member debriefing and providing updates for around five minutes. This has served to teach me the skill of preparing information I was to share with the team ahead of time. Second, the meetings were helpful to manage team productivity, as well as a great opportunity to meet with others to debrief, share knowledge, and to ask questions. For example, the meetings were helpful to establish communication with one another, as each of us were encouraged to speak and participate during discussions. This was helpful in ensuring that everyone contributed equally to the research project.

What were the highlights of the experience?

The highlights of the weekly meetings includes working together with other members towards achieving a collective goal, building interpersonal relationships, as well as the diversity of the team. Despite coming from different fields, backgrounds, and varying interests, it was great to see how all of us came together on this project with an interest to serve the Montagnard refugee community. I was fascinated to witness how our different roles and skills worked together to contribute to the project. We all had different yet important contributions to the project from serving as a translator, synthesizing a literature review, to providing helpful information on effective biomarker measurement methods. For example, Research Assistants Branda Mlo, who is a Public Health student from UNCG, and Lek Siu, who is a Peace and Conflicts Study student from Guilford College, both come from the Montagnard community, and they will be serving as translators for the project. Besides serving as a translator, Branda is also

responsible for Designs, and for the development of the questionnaire on Qualtrics. Other contributions from people with different skills included other UNCG students such as Jalisa Horne and Yasmin Ali, who comes from a background in Nutrition; Krishnaveni Balakrishnan, Oyedia Akaronu, Yvonne Chimenge, Janet Sayers, and myself, who come from a background in Human Development and Family Studies, contributing in terms of generating literature reviews; Halimatou Tankari and Sana Ansari, who come from a background in Public Health; Aiperi Iusupova, a student from Guilford College who comes with a background in Chemistry and Biology, responsible for synthesizing a literature review on biomarkers.

Finally, getting the opportunity to build relationships with each of my mentors, as well as other students was the most rewarding aspect of the weekly meetings. From sharing good news, supporting one another, understanding and appreciating one another's contributions, I really enjoyed networking both on a professional and personal level. For example, I have had the opportunity of networking with Branda and Lek, who come from the Montagnard community. I have also been able to connect with students outside of UNCG, including Lek and Aiperi, who attend Guilford College. My partnership with Aiperi has been significantly rewarding to the both of us, as we have similar interests and career goals of going into the medical field. Having the opportunity to deliver presentations, as well as attend several professional conferences together has helped us tremendously. We have developed what I hope to be a lifelong friendship, and I am thankful that this research project has served as a way of crossing our paths together.

Documentation/Timesheet:

- January 22, 2015: My Senior Honors Project Proposal is due on Monday, January 26th. I am currently working on finding articles for my literature review, and begin working on my abstract to submit by the Big SURS deadline.
- January 29, 2015: Currently working on my abstract to meet the BIG SURS deadline
- February 5, 2015: I am currently working on my 250 words abstract for my review article to have it done by this weekend, and I am going to work on my bio for Dr. Morrison.
- February 12, 2015: I will be working on the 50 word abstract to submit to the BIG SURS, and will be collaborating with Aiperi Iusupova as research partners for poster presentations.
- February 19, 2015: I have submitted an abstract for the BIG SURS on behalf of myself and Aiperi. My goals for the upcoming week include working on my draft for the literature review.
- February 26, 2015: Aiperi and I will be presenting our work at AMSA's 20th Annual Poster Session & Project Exhibition. For the upcoming week I would like to continue working on preparing for the BIG SURS oral and poster presentation, as well as looking for more events and opportunities to present our work. I will also be working on my literature review.
- March 5, 2015: Aiperi and I will be presenting at North Carolina Academy of Science on March 27-28. Also, our abstract has been accepted to present at the Big South Undergraduate Research Symposium on April 10-11th. Currently working towards a new poster to present that these events. I will be working towards finishing my literature review next week during Spring Break.
- March 12, 2015: My independent literature review has been complete. Discussed possibly writing another literature review on biological markers collaborating with Aiperi. Scheduled our mandatory training session to be held on Sunday, March 22.
- March 19, 2015: Currently working on the poster for the North Carolina Academy of Science. Will begin working on the biological marker paper and collecting relevant articles. Discussed potentially working towards publication in an undergraduate journal.
- March 26, 2015: Our poster that will be presented at the North Carolina Academy of Science tomorrow has been printed. Today we reviewed some of the procedures that we learned from the training session that was held on Sunday.
- April 2, 2015: Currently working on our poster and oral presentations for BigSURS. Also working on my reflections and summary for the weekly meetings and pre-testing procedures for my Senior Honors Project. Learned how to use the offline Qualtrics survey application for conducting interviews.
- April 9, 2015: Reviewed how to collect hair samples by practicing on dolls and on other team members. Discussed final preparation steps for the upcoming BigSURS presentation that will take place this weekend.

IMAGES FROM WEEKLY MEETINGS



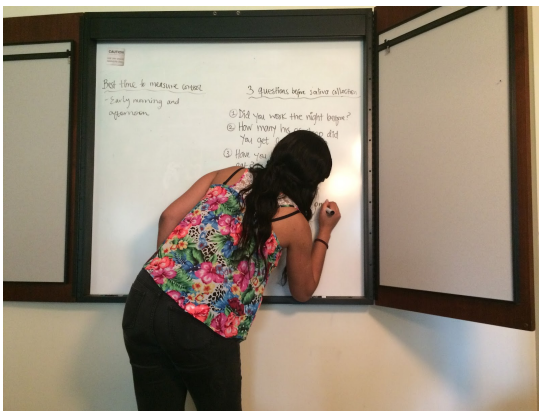
Team members during a group discussion



Dr. Morrison explains hair sample collection



Dr. Morrison with scissors - Collected hair sample - Practicing hair sample collection



Oyedia taking notes on the whiteboard



Branda and Halima during group discussion

SUMMARY & REFLECTION: PRE-TESTING

S. Kayo Robinson

The University of North Carolina at Greensboro

Senior Honors Project: Spring 2015

Lloyd International Honors College

This semester, I served as a Research Assistant collaborating in a wider research project, the Montagnard Hypertension Research Project, conducted by my faculty mentors Dr. Sudha (Shreeniwas), Dr. Sharon Morrison (PHE), Dr. Jigna Dharod (NTR), and Mr. Andrew Young (CNNC). The objective of the research project includes analyzing how risk factors for hypertension are affected by family relationships, nutrition, and health care access among Montagnard refugee adults who have transnationally relocated to the Southern parts of the United States. No data collection was conducted this semester. Instead, we have prepared for pre-testing our survey questionnaire during April 2015, prior to moving the research forward towards full data collection. During my collaboration in the research project, I have proposed to write a reflection and summary of the pre-testing procedures and experiences in receiving training (e.g., conducting household interviews, collecting anthropological measurements, and collecting clinical measurements).

As a part of the pre-testing procedure, each team member was required to attend training sessions which were conducted during our weekly meetings or scheduled separately. The areas of training received include:

- Professional Journaling and Data Collection Methods
- Use of Qualtrics Data Collection Software Offline Application
- Face-to-Face Interview techniques
- Collecting biological measures:
 - Weight measurement
 - Height measurement
 - Body Mass Index Calculation
 - Waist Circumference Measurement
 - Hip Circumference Measurement
 - Arm Circumference Measurement
 - Skinfold Measurement
 - Blood Pressure Reading and Recording
 - Obtain Scalp Hair Sample
 - Obtain Saliva Sample

The training sessions were definitely helpful, in order to ensure that all members of the research team became familiarized with the procedures of conducting interviews, collecting anthropometric measurements, and collecting clinical measurements. As someone who is a Certified Nursing Assistant interested in pursuing a career in the medical field, I found myself to be comfortable and familiar with the majority of the procedures that were introduced during the training sessions. However, there were still a lot to learn and challenges necessary to overcome, for e.g. collecting scalp hair samples and saliva samples. I am thankful to have the privilege of being a part of this project and experience, as well as for the Montagnard community who are willing to trust us and to provide their time, body, and information in order to better their health outcomes, as well as others who are facing similar problems as them.

What did you learn from the experience?

Through the training session, I learned the importance of communicating with each participant and making sure that they are aware of the procedures I am conducting prior to doing so. For example, it is necessary to thoroughly explain the procedure of measuring their skinfold measurements in the arm, as it requires using a pen to put a small mark on their arm as a point of reference. Once that is complete, the participant needs to be aware that they will feel some pressure in their arm in order for me to be able to effectively obtain an accurate measurement of their skinfold. I have learned that obtaining measurements require thorough explanations so that the participant will be comfortable and aware of what they are expected to do, as well as knowing what to expect of researchers.

What were some of the challenges?

Some of the challenges that I encountered during the training sessions include making sure to follow all of the procedures accurately in order to avoid errors, as well as becoming comfortable and self-assured in my skills to collect data. For example, obtaining blood pressure readings require strict execution of protocols in order to ensure accurate readings. The researcher must make sure that the participant is sitting with their arms relaxed on a flat surface, sitting up straight, not engaging in a conversation, with both feet flat on the ground un-crossed. Simply forgetting or failing to comply to any of these measures will result in false readings, which will then affect the results of the entire study. Another challenge I faced during the training sessions included difficulty being self-assured in my ability to collect data. For example, I found myself to be hesitant with the procedure of obtaining scalp hair samples prior to training. I was fearful of obtaining too much or too little hair, encountering a participant who will refuse to going through with this procedure, or making a mistake. However, I learned that having confidence in my own abilities is vital, as the participant will be relying on me to effectively carry out the procedure. I also realized that the purpose of the training sessions were to make sure that the skills necessary for all of the procedures would be acquired by each researcher.

IMAGES FROM TRAINING



Obtaining Weight



Obtaining Arm Circumference



Obtaining Skinfold Measurement



Obtaining Waist Circumference



Obtaining Scalp Hair Samples



Obtaining Blood Pressure Reading

RESEARCH PRESENTATIONS

S. Kayo Robinson

The University of North Carolina at Greensboro

Senior Honors Project: Spring 2015

Lloyd International Honors College

65th Annual American Medical Student Association Convention and Exposition: AMSA's 20th Annual Poster Session and Project Exhibition

Hyatt Regency Crystal City (Washington, DC)

February 26-March 1, 2015

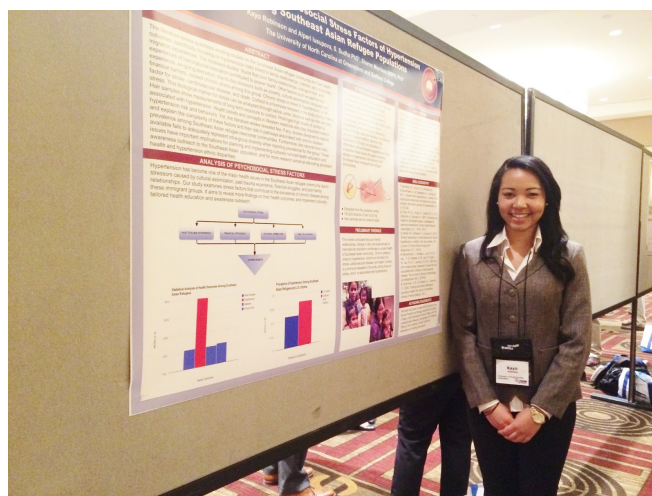
Title: *Analysis of Psychosocial Stress Factors of Hypertension Among Southeast Asian Refugee Populations*

Name: Kayo Robinson and Aiperi Iusupova

Mentor: S. Sudha PhD and Sharon Morrison MSPH, PhD

Institution: The University of North Carolina at Greensboro and Guilford College

Presentation Type: Poster



112th Annual Meeting of the North Carolina Academy of Science
Wake Forest Biotech Place (Winston-Salem, NC)
March 26-27, 2015

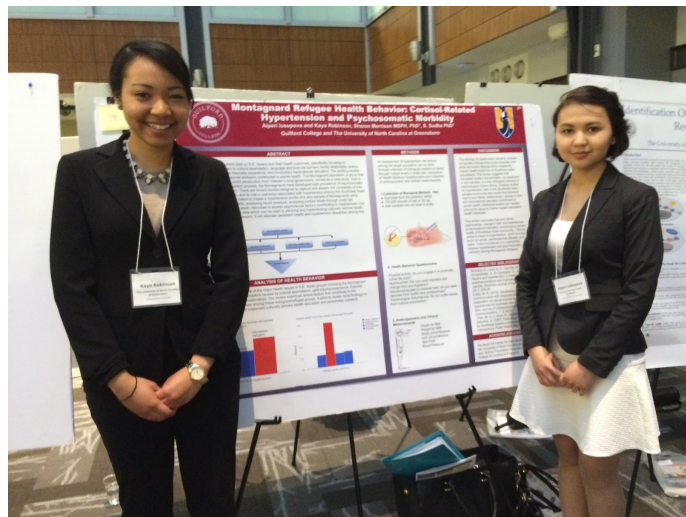
Title: *Montagnard Refugee Health Behavior: Cortisol-Related Hypertension and Morbidity*

Name: Aiperi Iusupova and Kayo Robinson

Mentor: Sharon Morrison MSPH, PhD and S. Sudha PhD

Institution: Guilford College and The University of North Carolina at Greensboro

Presentation Type: Poster



Big South Undergraduate Research Symposium

Campbell University (Buies Creek, NC)

April 10-11, 2015

Title: A Synthesis of Family Relationships and Hypertension Related Factors for Southeast Asian Refugee Communities

Name: Kayo Robinson and Aiperi Iusupova

Mentor: S. Sudha PhD and Sharon Morrison MSPH, PhD

Institution: The University of North Carolina at Greensboro and Guilford College

Presentation Type: Oral and Poster

Award: “Best Presentation BigSURS 2015” for the best presentation in our Academic Field

