Reading Notes to fill out when reading course and outside reading materials for assignment

Note Taking Sheet: Reading # _3___

_____Course ENCOURSE NAM_____EN202-01_____Section _____01

With many sources to read and evaluate, you need a way to keep track of the material you may use in your research paper. You need to record where you have looked, what you have found, and how to find each piece of information again (this is for your bibliography).

Directions: Fill in the information below, and keep with all of your resources. This will help you when it is time to write both your outline, paper, and annotated bibliography.

1. Author'  s Name: Claudia M Campbell[1] and Robert R Edwards[*]
2. Author'  s Credentials [1]Department of Psychiatry & Behavioral Sciences, Johns Hopkins University School of Medicine, 5510 Nathan Shock Drive, G Building, Suite 100, Baltimore, MD 21224, USA

   [*]Author for correspondence: Department of Anesthesiology, Perioperative & Pain Medicine & Psychiatry, Harvard Medical School, Pain Management Center, Brigham & Women's Hospital, 850 Boylston Street, Suite 302, Chestnut Hill, MA 02467, USA; Tel.: +1 617 732 9486; Fax: +1 617 732 9050; gro.srentrap@sdrawderr
3. Publisher [or title of organization]: National Institutes of Health, Pain Manag.
4. Heading of Section [title of reading]: ***Ethnic differences***

in pain and pain management

5. Year Written: 2013

6. Pages: 16

7. Website URL:
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3654683/

Main Ideas/Points	Important Quotations	Supporting Details	Relevance to Your Assignment

For example, the experience of pain differentially activates stress-related physiological responses across various ethnic groups, members of different ethnic groups appear to use differing coping strategies in managing pain complaints, providers' treatment decisions vary as a function of patient ethnicity and pharmacies in predominantly minority neighborhoods are far less likely to stock potent analgesics.	Disparities in the effects of and responses to pain treatment have also been found (see [4] for detailed review). For example, we have found ethnic differences in response to multidisciplinary pain treatment.	Indeed, ethnic identity, part of a person's self-concept derived from one's social group membership, has recently been shown to partially account for ethnic differences observed in experimental pain responses [20].	Links perception of pain to overall idea of reporting and discussing pain with health care providers. Provides the social perspective through analysis of multiple minority groups for pain perception, conceptualization, and general reporting.

In this article, is it possible that any of the authors might have a bias about the subject matter? No___ provide examples if needed.

Is the article timely or a bit outdated ? It is slightly outdated, as it is not from the last 2 years.

Was it published in a reputable source? Yes

It is an academic source.

Other important information :

Reading Notes to fill out when reading course and outside reading materials for assignment

Note Taking Sheet: Reading # ___4_

_____Course ENCOURSE NAM_____EN202_____Section _____01

With many sources to read and evaluate, you need a way to keep track of the material you may use in your research paper. You need to record where you have looked, what you have found, and how to find each piece of information again (this is for your bibliography).

Directions: Fill in the information below, and keep with all of your resources. This will help you when it is time to write both your outline, paper, and annotated bibliography.

1. Author'﷽ s Name: Beverly T. Rodrigues, Venkat N. Vangaveti, and Usman H. Malabu *

2. Author'﷽ s Credentials Department of Diabetes and Endocrinology, The Townsville Hospital and College of Medicine and Dentistry, James Cook University, 100 Angus Smith Drive, Douglas, QLD 4814, Australia

*Usman H. Malabu: ua.ude.ucj@ubalam.namsu

Academic Editor: Nikolaos Papanas

3. Publisher [or title of organization]: Hindawi Publishing Corp.

4. Heading of Section [title of reading]: ***Prevalence and Risk Factors for Diabetic Lower Limb Amputation: A Clinic-Based Case Control Study***

5. Year Written: 2016

6. Pages: 17

7. Website URL: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4942664/

Main Ideas/Points	**Important Quotations**	**Supporting Details**	**Relevance to Your Assignment**
Diabetes and the diabetic foot ulcer (DFU) have made their mark in society, with the prevalence of diabetes being four times higher than all cancers combined [1]. Increased life expectancies have contributed significantly to this exponential rise, with diabetes now contributing to 9% of global mortality,equatingto4milliondeathsperyear[2,3].			
			Relevance to Your

Main Ideas/Points	Important Quotations	Supporting Details	Assignment
Despite previous alert to the importance of early detection and management, prevention practices remain poor, with inconsistent patient follow-up and management compliance [17, 18]. As a result, subjects with DFU maintain poorer quality of life, with higher baseline depression rate, and 5-year mortality rates of up to 74% [19]. Existing studies have identified Indigenous ethnicity and presence of microvascular complications as contributing factors to poor DFU outcomes	The most significant con-tributing factors were diabetic retinopathy, CABG surgery, Charcot's foot, and Indigenous ethnicity.	In this study, Indigenous Australians were found to be at greater risk of diabetic LLA, which is in keeping with others' observation [20, 26]. Further-more, whilst there was a marginal difference in amputation between ischaemic and nonischaemic cohorts in the overall group, amputations related to ischaemic ulcers were more than double amongst the Indigenous subgroup.	Provides comparative data for an indigenous population in the Australasian region that suffers high LLA prevalence

		Essentially, the prevalence of amputation amongst our subjects stood at comparatively higher numbers and occurred predominantly amongst Indigenous subjects with ischaemic ulcers. orrespondingly, we have found Indigenous ethnicity to be amongst the strongest contributing factors in our cohort, who were almost twice as likely to undergo an amputation. The higher prevalence of amputations in the group of Indigenous Australians could be attributed to a genetic predisposition or to a socioeconomic	

		status that drives the patients to present late for clinical care. This result is supported by previous Australian data stating that Indigenous Australians are known to develop diabetes and its associated metabolic complications at a younger age [24, 34]	

In this article, is it possible that any of the authors might have a bias about the

subject matter? No___ provide examples if needed.

Is the article timely or a bit outdated ? No

Was it published in a reputable source? Yes

It is an academic source.

Other important information :

Reading Notes to fill out when reading course and outside reading materials for assignment

Note Taking Sheet: Reading # __5__

_____Course NAME_____EN202_____Section _____01_____

With many sources to read and evaluate, you need a way to keep track of the material you may use in your research paper. You need to record where you have looked, what you have found, and how to find each piece of information again (this is for your bibliography).

Directions: Fill in the information below, and keep with all of your resources. This will help you when it is time to write both your outline, paper, and annotated bibliography.

1. Author'[illegible] s Name: Mayo Clinic Staff
2. Author'[illegible] s Credentials Staff
3. Publisher [or title of organization]: Mayo Foundation for Medical Education and Research (MFMER)
4. Heading of Section [title of reading]: **Amputation and diabetes: How to protect your feet**
5. Year Written: 2017
6. Pages: N/A
7. Website URL: https://www.mayoclinic.org/diseases-conditions/diabetes/in-depth/amputation-and-diabetes/art-20048262

Main Ideas/Points	Important Quotations	Supporting Details	Relevance to Your Assignment
The good news is that proper diabetes management and careful foot care can help prevent foot ulcers. In fact, better diabetes care is probably why the rates of lower limb amputations have gone down by more than 50 percent in the past 20 years.	More than 80 percent of amputations begin with foot ulcers. A nonhealing ulcer that causes severe damage to tissues and bone may require surgical removal (amputation) of a toe, foot or part of a leg.	The best strategy for preventing complications of diabetes — including foot ulcers — is proper diabetes management with a healthy diet, regular exercise, blood sugar monitoring and adherence to a prescribed medication regimen.	Good supportive data for the variables of education and services, which are being used in my research. Provides an argument for the relevance and how they can help.
Main Ideas/Points	**Important Quotations**	**Supporting Details**	**Relevance to Your Assignment**
Inspect your feet daily. Check your feet once a day for blisters, cuts, cracks, sores, redness, tenderness or swelling. If you have trouble reaching your feet, use a hand mirror to see the bottoms	**Don't go barefoot.** To prevent injury to your feet, don't go barefoot, even around the house.	**Don't remove calluses or other foot lesions yourself.** To avoid injury to your skin, don't use a nail file, nail clipper or scissors on calluses, corns, bunions or warts. Don't use chemical wart	Concrete examples for the relevance discusses above.

of your feet. Place the mirror on the floor if it's too difficult to hold, or ask someone to help you.		removers. See your doctor or foot specialist (podiatrist) for removal of any of these lesions.	

In this article, is it possible that any of the authors might have a bias about the subject matter? No__ provide examples if needed.

Is the article timely or a bit outdated ? No

Was it published in a reputable source? Yes

It is not an academic source.

Other important information :

Note Taking Sheet: Reading # __6__

_____Course NAME_____EN202_____Section _____01_____

With many sources to read and evaluate, you need a way to keep track of the material you may use in your research paper. You need to record where you have looked, what you have found, and how to find each piece of information again (this is for your bibliography).

Directions: Fill in the information below, and keep with all of your resources. This will help you when it is time to write both your outline, paper, and annotated bibliography.

1. Author'[illegible] s Name: by *Marcia Carteret, M. Ed*.
2. Author'[illegible] s Credentials *M. Ed*.
3. Publisher [or title of organization]:

Dimensions of Culture®
Cross-Cultural Communications for Healthcare Professionals

4. Heading of Section [title of reading]: Cultural Aspects of Pain Management
5. Year Written: 2011
6. Pages: N/A
7. Website URL: http://www.dimensionsofculture.com/2010/11/cultural-aspects-of-pain-management/

Main Ideas/Points	Important Quotations	Supporting Details	Relevance to Your Assignment

• We are apt to believe that our reaction to pain is “normal” and anything substantially different is “abnormal”. For example, a doctor or nurse raised in a family that encouraged stoicism may not know how to react to a patient who responds to pain with loud verbal complaints and may even discount such “overly expressive” reactions	• Rigid use of generalizations leads to cultural stereotyping which in turn can lead to serious inaccuracies. Any individual’s experience of pain will manifest itself in emotional and behavioral responses particular to his or her culture, personal history, and unique perceptions.	• We can make the broad generalization that expressive patients often come from Hispanic, Middle Eastern, and Mediterranean backgrounds, while stoic patients often come from Northern European and Asian backgrounds.	• Good background information and support for differing pain reactions and behaviours

In this article, is it possible that any of the authors might have a bias about the subject matter? Yes___ provide examples if needed. Possibly, because of the author's cultural background

Is the article timely or a bit outdated ? Yes

Was it published in a reputable source? Yes

It is not an academic source.

Other important information :

Reading Notes to fill out when reading course and outside reading materials for assignment

Note Taking Sheet: Reading # _2___

_____Course ENCOURSE NAM_____en202-01_____Section _____-01_____

With many sources to read and evaluate, you need a way to keep track of the material you may use in your research paper. You need to record where you have looked, what you have found, and how to find each piece of information again (this is for your bibliography).

Directions: Fill in the information below, and keep with all of your resources. This will help you when it is time to write both your outline, paper, and annotated bibliography.

http://web.b.ebscohost.com/ehost/detail/detail?vid=0&sid=1e86f64c-a489-4afe-8b52-4a47b3aa9c4a%40sessionmgr101&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#AN=95697407&db=aph

- Zaidi, G., Zafar, N., Noor-ul-Huda, Zubair, R., Farooq, S., & Kausar, R. (2013). Quality of Life and Adjustment among Type II Diabetes Patients With and Without Lower Limb Amputation. Journal Of Behavioural Sciences, 23(3), 72-86.

1. Author'﷽ s Name: Zaidi, G., Zafar, N., Noor-ul-Huda, Zubair, R., Farooq, S., & Kausar, R.
2. Author'﷽ s Credentials Institute of Applied Psychology, University of the Punjab, Lahore, Pakistan
3. Publisher [or title of organization]: Journal of Behavioural Sciences. 2013 Special issue, Vol. 23 Issue 3, p72-86. 15p.
4. Heading of Section [title of reading]: Quality of Life and Adjustment among Type II Diabetes Patients With and Without Lower Limb Amputation.
5. Year Written: 2013

6. Pages: 86

7. Website URL: http://web.b.ebscohost.com/ehost/detail/detail?vid=0&sid=19b5ce9b-652c-4cd4-ac7c-c637e3927b74%40sessionmgr104&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#AN=95697407&db=aph

Main Ideas/Points	Important Quotations	Supporting Details	Relevance to Your Assignment
• It states that those who were not amputated had better quality of life as compared to those who were. It highlights that adjustment was better among diabetics without amputation.	•	• Results in table 2 indicated that patients without amputation have better quality of life and are better in overall adjustment, social adjustment and adjustment with relatives than patients with amputation. • As Redekop et al. (2002) in a study of health related quality of life and	• Provides a basis and supporting literature for describing the effect of limb amputation in diabetic patients. Provides context. Shows that unmanaged and untreated diabetes Type II leads to a decline in happiness, satisfaction and overall quality of life. Shows that the prevention of amputation would therefore cause the individual to be in the group with a higher reported quality of life

		treatment satisfaction with type 2 diabetes found that the health related quality of patients without complications was only slightly lower than that of similarly aged persons in the general population and it was also found that obesity and the presence of complications are important determinants of health related quality of life. Similarly in another study conducted by Huang et. al. (2007) on patient's	

		perceptions of quality of life with diabetes-related complications and treatments found that endstage complications have the greatest perceived burden on quality of life.	
Main Ideas/Points	**Important Quotations**	**Supporting Details**	**Relevance to Your Assignment**
Thus, it was found that patients who are well adjusted to diabetic status had better quality of life as well as they showed better improvement in work, relative and marital adjustment as well.	Thus, it was found that patients who are well adjusted to diabetic status had better quality of life as well as they showed better improvement in work, relative and marital adjustment as well.	Similarly, according to Behel, Rybarczyk, Elliott, Nicholas, and Nyenhuis (2002) amputation had major impact on depression, lower quality of life and poorer adjustment.	Good for snippets to quote. Also shows related factors at the end which could be included in discussion. Related to psychosocial factors which can further support the relevance and related effects outlined in paper.

In this article, is it possible that any of the authors might have a bias about the subject matter? No___ provide examples if needed.

Is the article timely or a bit outdated ? a bit outdated, 4 years

Was it published in a reputable source? yes

academic source.

Other important information : Done in Pakistan

Reading Notes to fill out when reading course and outside reading materials for assignment

Note Taking Sheet: Reading # _1___

_____Course ENCOURSE NAM_____en202-01_____Section _____-01_____

With many sources to read and evaluate, you need a way to keep track of the material you may use in your research paper. You need to record where you have looked, what you have found, and how to find each piece of information again (this is for your bibliography).

Directions: Fill in the information below, and keep with all of your resources. This will help you when it is time to write both your outline, paper, and annotated bibliography.

http://web.b.ebscohost.com/ehost/detail/detail?vid=0&sid=0e4201f4-91ce-4e4d-ab16-31c243844326%40sessionmgr102&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#AN=25982171&db=cmedm

- Robinson, T. E., Kenealy, T., Garrett, M., Bramley, D., Drury, P. L., & Elley, C. R. (2016). Ethnicity and risk of lower limb amputation in people with Type 2 diabetes: a prospective cohort study. Diabetic Medicine: A Journal Of The British Diabetic Association, 33(1), 55-61. doi:10.1111/dme.12807

1. Author'[illegible] s Name: Robinson, T. E., Kenealy, T., Garrett, M., Bramley, D., Drury, P. L., & Elley, C. R.
2. Author'[illegible] s Credentials School of Population Health, University of Auckland, New Zealand., District Health Board
3. Publisher [or title of organization]: Diabetic Medicine: A Journal Of The British Diabetic Association [Diabet Med] 2016 Jan; Vol. 33 (1), pp. 55-61. Date of Electronic Publication: 2015 Jul 16.
4. Heading of Section [title of reading]: Ethnicity and risk of lower limb amputation in people with Type 2 diabetes: a prospective cohort study

5. Year Written: 2016

6. Pages: 7

7. Website URL: http://web.a.ebscohost.com/ehost/detail/detail?vid=0&sid=c0bf86ab-e58d-4314-8c77-68fb6d1cd43f%40sessionmgr4009&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#AN=25982171&db=cmedm

Main Ideas/Points	Important Quotations	Supporting Details	Relevance to Your Assignment
• Ethnic disparities for diabetic complications (renal failure, lower limb amputations, eye problems and heart disease) are disproportionately higher than for prevalence; that is, Māori with diabetes are more likely to have more severe disease. There are many reasons	• "There are more than 240 000 people living with diabetes in New Zealand, [5] mostly Type 2 diabetes, and the prevalence both of Type 2 diabetes and its complications are much higher in Maori and Pacific populations than in Europeans [6,7]."	• Demographic variables included age of onset and duration since diabetes diagnosis, gender, ethnicity and socio-economic status. Clinical variables included smoking status, height and weight, blood pressure, HbA1c , total cholesterol/HDL ratio and albuminuria.	• Provides data for the Pacific region • The results of this study show a statistically significant difference in limb amputations amongst the Pacific Islander population (Maoris), which corresponds with data presented in similar studies. • This list of variables provides a good comparative source for impacting variable to my own. However, I would not be able to test for the clinical variables due to resources.

but evidence suggests that ethnic inequalities in access to, and the quality of, diabetes care plays a role. Programmes that screen for and aggressively manage complications must prioritise Māori. However, tackling root causes is also required in any effort to eliminate disparities.			
Main Ideas/Points	**Important Quotations**	**Supporting Details**	**Relevance to Your Assignment**

In this article, is it possible that any of the authors might have a bias about the subject matter? No___ provide examples if needed.

Is the article timely or a bit outdated ? Timely for an academic source

Was it published in a reputable source? Yyes

academic source.

Other important information :

Finding Causes for Limb Loss:

What are the leading factors of limb loss for diabetic patients in the CNMI?

Chenoa Bunts-Anderson

Northern Marianas College

EN202-01

Dr. Kimberly Bunts-Anderson

09/18/2017

The Commonwealth of the Northern Marianas has had a history of prevalent and aggressive diabetes. However, due to geographical isolation and underdevelopment, the issue of limb loss causation on the Northern Marianas Islands has largely gone underresearched. This essay outlines a local study that will identify key causes of limb amputation for diabetic patients in Saipan, while also collecting and presenting qualitative data from diabetes patients, healthcare providers, and diabetes experts.

First, the local relevance must be established. Along with other Non-Communicable diseases (NCD), an abnormally large percent of the local population is diabetic; securing the NMI numerous top ten rankings for diabetes prevalence over the last decade ("Diabetes rate," 2006). One of the most devastating consequences of being diabetic is the loss of a limb. In the NMI, this is also a significant issue, which is only worsened by lack of healthcare facilities and prevention and treatment options. Currently, there is only one treatment facility on island for amputation patients, and a 2013 study shows that the opening of this awareness and treatment service center aided in a decline in diabetic amputee patients since 2006 (Ichiho, Robles, & Aitaoto, 2013). However, diabetic patients still prevalently suffer limb loss in the NMI; much like other Pacific Island country (PIC) peoples and indigenous Australians (Robinson et al., 2016). The prevalence of limb loss can then be better understood through an examination of possible causes.

Therefore, a study into the causes of limb loss for diabetic patients in the NMI can be performed through surveys, interviews, meta-data analysis, and data collection. Surveys can be distributed to healthcare professionals and diabetic patients using the resources of the researcher (a medical professional student) and fellow researchers from local (Chamorro and Carolinian)

communities. Surveys will be performed more selectively and will be focused on those directly treating or helping the prevention of limb loss in diabetic patients, as well as two family members of the aforementioned researcher participants. Additionally, comparisons with other studies on PICs and indigenous Australians will be completed utilizing current literature one leg amputation within specific populations genetically and geographically similar to those within the NMI.

The project can be completed over the 16 week time period following the schedule outlined in Table 1. This schedule allows for ample revision time and two weeks for quantitative collection and processing, since interviewing is a longer process than handing out surveys. While one week is very dedicated to surveying, it will also be open throughout the process. By securing writing time, there will also be an opportunity to utilize additional resources if needed. Additionally, multiple weeks are dedicated to interviews (if not totally, then partially) to fit the lead researcher's schedule; which is heavily reliant on weekend meetings. Two weeks are dedicated to the editing process for refinement of the essay. Resources such as the Northern Marianas College's English Language Lab (ELL) and peer reviews will be utilized. This will also allow for advanced inclusion of media, tables, and assorted figures. The planned schedule displayed in Table 1 is open to adjustment according to demands of the project and advice of the supervising instructor (Dr. Kimberly Bunts-Anderson).

Table 1.

Week	**Focus**	**Due Dates**	**Resources Used**
Week 1	Learning the required formats and gaining resources.		

Week 2	Will pick possible topics for the project and orient self with research concepts.	Topics Due	
Week 3	Outlining the persuasive essay and gathering data and literature.	Sep 8, Thesis and Outline Due	EBSCO, Library
Week 4	Writing the persuasive essay.	Sep 11, Rough Draft Due	EBSCO, Library, Cataloguing Sites, Checklist
Week 5	Present argument for the project and start first steps to student research.	Sep 18, Final Draft and Presentation Due	
Week 6	Create survey and interview information while reaching out to interview subjects.		Networks and contacts
Week 7	Get material approved and secure survey populations.		EN202 instructor and contacts
Week 8	Perform scheduled interviews and write up the findings and processes.		Comparative literature and collect data
Week 9	Perform more interviews and surveys, and write up data analysis.		Comparative literature and collected data
Week 10	Conclude data collection and compile data in an effective portion of the research project. Additionally, compare with and review checklist requirements.		Checklist

Week 11	Will write the conclusive portions of the paper.		Library, EBSCO
Week 12	Turn it into ELL for editing, edit, fill information gaps.		ELL
Week 13	Turn in the draft for feedback and continue editing and filling and information gaps or extra interviews that may need to be scheduled.		ELL
Week 14	Revision week.		
Week 15	Revision week.		
Week 16	Submissions.	The project is due.	

The main variables will include diet, cultural influences on diet, stress, physical activity, maintaining weight and blood pressure, blood sugar level checks, proper medication, cultural perspective on reporting/discussing pain/injury, patient education, and prevention services (Shojaiefard, Khorgami, & Larijani, 2008). These are all key variables associated--within current literature--with limb amputation prevention in diabetic patients. Furthermore, genetics will be included in the paper, but due to the lack of resources available to the primary researcher, the information will all be compiled from previous studies; such as those centered around aboriginal Australians. The inclusion of cultural factors is of key importance, as understanding the causes from a cultural perspective allows for improved follow up research and exploration. Comment sections will also hopefully give survey participants the opportunity to share additional insight.

Ultimately, the issue of diabetes and limb amputation is a serious concern, as research shows that the loss of a limb severely affects physical activity and eventually increases the likelihood of additional health concerns and conditions (Singh & Prasad, 2016; Paxton, Murray, Stevens-Lapsley, Sherk, & Christiansen, 2016). As leg amputation is not necessarily affected by age, this can also severely impact the quality of one's life from an early age (Dillon, Fortington, Akram, Erbas, & Kohler, 2017). Therefore, using existing literature and research that will be effectively gathered over the course of this project, data displaying the correlation between the selected variables and limb loss in diabetic patients will be presented. This project will provide a platform for causation identification and awareness outreach in the community.

References

Dillon, M. P., Fortington, L. V., Akram, M., Erbas, B., & Kohler, F. (2017). Geographic Variation of the Incidence Rate of Lower Limb Amputation in Australia from 2007-12. *Plos One*, *12*(1), e0170705. doi:10.1371/journal.pone.0170705

'Diabetes rate in NMI remains high'. (2006, February 18). Retrieved September 10, 2017, from https://www.saipantribune.com/index.php/a656cbcc-1dfb-11e4-aedf-250bc8c9958e/

Ichiho HM, Robles B, Aitaoto N. An Assessment of Non-Communicable Diseases, Diabetes, and Related Risk Factors in the Commonwealth of the Northern Mariana Islands: A Systems Perspective. Hawai'i Journal of Medicine & Public Health. 2013;72(5 Suppl 1):19-29.

Paxton, R. J., Murray, A. M., Stevens-Lapsley, J. E., Sherk, K. A., & Christiansen, C. L. (2016). Physical activity, ambulation, and comorbidities in people with diabetes and lower-limb amputation. *Journal Of Rehabilitation Research & Development*, *53*(6), 1069-1078. doi:10.1682/JRRD.2015.08.0161

Robinson, T. E., Kenealy, T., Garrett, M., Bramley, D., Drury, P. L., & Elley, C. R. (2016). Ethnicity and risk of lower limb amputation in people with Type 2 diabetes: a prospective cohort study. *Diabetic Medicine: A Journal Of The British Diabetic Association*, *33*(1), 55-61. doi:10.1111/dme.12807

Shojaiefard, A., Khorgami, Z., & Larijani, B. (2008). Independent risk factors for amputation in diabetic foot. International Journal of Diabetes in Developing Countries, 28(2), 32–37. http://doi.org/10.4103/0973-3930.43096

Singh, R. K., & Prasad, G. (2016). Long-term mortality after lower-limb amputation. *Prosthetics And Orthotics International*, *40*(5), 545-551. doi:10.1177/0309364615596067

Leading Causes of Limb Loss for Diabetic Patients in the CNMI

Chenoa Bunts-Anderson

Northern Marianas College

Dr. Bunts-Anderson, EN202

Abstract

This study explores factors contributing to limb loss in diabetic patients within the CNMI. Through quantitative and qualitative data collected over a two month period, this study explored the impact of variables identified as contributing to limb amputation in diabetic patients in the CNMI through a survey of 50 respondents. The tested variables were identified through a current literature review, which also showed a gap in current research in relation to related contributing factors of limb loss in diabetic patients within the Pacific region. The results showed that individuals in the community disagree with previous claims that there are inadequate services and programs for diabetic patients. The four variables that were shown to have a significant impact in the community include regular blood sugar level checks, ability to maintain weight and blood pressure, physical activity, and diet. This indicated a larger issue with the average lifestyle in the community, and can be explored in further studies. Interestingly, the cultural perception of pain was not found to be a significant variable in this study.

Introduction

The issue of limb amputation in diabetic patients has been researched around the world, as the implications on quality of life and future health are considerable. In the United States, 67% of limb amputations are attributed to "diabetes and related complications," and in 2010 there were 73,000 lower limb amputations caused by these reasons (Almekinder, 2017; n.a., 2017). However, little research has been done in the Pacific region, and even less in the Commonwealth of the Northern Marianas Islands (CNMI). Therefore, the cultural, regional, and genetic influences are not fully understood. This study shall strive to unveil the specific influencing factors within the unique community of the CNMI through researching numerous possible influencing variables.

The study expects to find a strong correlation between the cultural perception of reporting/discussing pain and limb amputation in diabetic patients. Furthermore, the study expects to find that this factor not only plays a role through hesitancy to report injury, but hesitancy to seek continuous care for the diabetic patient's condition.

Literature Review

Research into amputation causation and the effects of amputation on an individual's life have been conducted on a global scale. Amputation is shown to decrease quality of life in situations, although variables such as acceptance of the situation may increase future health and overall well-being (Zaidi et al., 2013).

Research that currently exists on diabetic amputation is not only applicable to people of the specific ethnicity and culture of the CNMI, but can also be used as reference to show the understanding of the issue from a biological standpoint and with consideration of the global

issue. As diabetic foot (DF) is the leading cause of nontraumatic lower extremity amputation, it is important to understand the physiological and genetic impact of diabetes, health history, and family history when assessing for related factors of amputation. One 2008 study found "nephropathy, ischemic diabetic foot, and first FBG > 200 mg/dl"[1] to be "independent predictors" of limb amputation in cases of DF lesions (Shojaiefard, Khorgami, & Larijani, 2008).

Through examination of various variables presented and examined through numerous studies, the main variables that can and will be applied to this study include diet, cultural influences on diet, stress, physical activity, maintaining weight and blood pressure, blood sugar level checks, proper medication, cultural perspective on reporting/discussing pain/injury, patient education, and prevention services (Shojaiefard, Khorgami, & Larijani, 2008; Nazri et al., 2016). Another study also discovered a link between glycemic control, blood pressure control, preventing heavy smoking and the incidence of lower extremity amputation utilizing the Kaplan-Meier approach to assessing for risk of death (Sahakyan, Klein, Lee, Myers, & Klein, 2011).

The Pacific Islands have had a long and torrid history with diabetes, which is only further exacerbated by the high prevalence of limb amputation in diabetic patients. Therefore, research done within the Pacific region was also closely examined.

So far, relevant research has shown that Pacific Islanders (ethnically) were more likely to suffer lower limb amputation than Caucasian and Asian population within the same community (Robinson et al., 2016). This suggests specific factors unique to the biology or culture of Pacific

[1] *nephropathy* refers to kidney disease or damage, *ischemic diabetic foot* is caused by restricted blood flow to the feet's tissues, and *FBG* abbreviates for the fasting blood glucose test.

Islanders. Furthermore, numerous studies within Australia have also found an increased risk of amputation amongst Aboriginal and Torres Strait Islander populations, though this also may be influenced by access to prevention and treatment resources (Dillon, Fortington, Akram, Erbas, & Kohler, 2017).

These studies, as well as the common appearance of Pacific Island Countries (PIC) on the top ten world rankings for diabetes prevalences displays the scope of the issue. A 1997 study set in the CNMI found that diabetes is extremely common amongst female individuals of Carolinian (a local population) descent, and that the overall prevalence of diabetic patients experiencing limb amputation in the CNMI is higher than expected when consulting United States and global statistics (Durand, Bourne, Thohey-Mote, Khorram, & Abraham, 1997). However, specific studies on limb amputation or risk for DF lesions in the CNMI could not be found.

So far, all the research into diabetes within the CNMI has focused on prevalence and local diet, and has not specifically explored the consequence of limb amputation. However, studies have identified a dearth of educational and support services for the diabetic, as well as an influential local culture and diet (Durand et al., 1997). A 2013 CNMI study found that the local diabetes prevalence was 9.8% in 2009, non-communicable diseases and related conditions caused 60.7% of all deaths in 2005, and that there was only one provider for physical therapy on island (Ichiho, Robles, & Aitaoto, 2013). Furthermore, the same 2013 Ichiho, Robles, and Aitaoto study surveyed local diabetic patients and found the following data on preventive measures and health care provision in the CNMI:

> Of the respondents who had diabetes, 28.8% never checked their feet for sores or irritation; 18.6% were not seen by a doctor or healthcare provider in the last 12 months;

> 27.9% did not receive a Hemoglobin A1c test in the last 12 months and 23.4% had not heard of the test for Hemoglobin A1c; 15.6% had never had a dilated eye examination, while an additional 15.6% had a dilated eye examination more than two years ago. . . . Only 23% of the respondents with diabetes reported having taken a course on self-management to learn how to manage their diabetes. (p. 20)

After a review of the existing literature on this topic, it is clear that there is an existing gap in the larger body of research: associated factors of limb loss in the CNMI region. Existing literature will be used as a foundation for this study, as it provides insight into biological factors outside of the capabilities of this project, gives baseline data of diabetes prevalence in the CNMI, and provides factor and study comparisons through limb amputation research conducted outside of the Pacific region.

Methodology

To test the hypotheses, the researcher created a survey distributed to the general population on Saipan (see Appendix A for the general survey). The survey was selected as a primary form of gathering information from the general community, and the goal was to utilize qualitative data to analyze whether there was any correlation between the hypotheses and limb amputation among people living with diabetes in the CNMI.

Survey

The general survey asked questions on perceptions and attitudes toward diabetes and the key factors identified through the literature review. For example, question 6--”Is hiding/downplaying pain a part of your culture?”--was specifically designed to assess the attitude towards hiding/downplaying pain in the CNMI (see Appendix A). The survey was distributed

using the Northern Marianas College email interface (see Appendix B). The minimum target number of responses was fifty individuals. The survey contained two qualitative questions (e.g.”Have you or has someone you've known lost a limb because of diabetes? If yes, please write what you can about the cause and situation.”) and eleven quantitative questions (e.g. “Are individuals in your community able to maintain their weight and blood pressure?” on a 1 to 5 scale) (see Appendix A). The data will be used to analyze perceptions of cultural concepts (i.e. pain) and to discover relationships between factors such as ethnicity and perceptions/experiences of diabetes.

Participants and Inclusion Criteria

Fifty participants completed the survey. The patients were asked for demographic data, including ethnicity, and were able to list multiple ethnicities. The ethnic background of the participants were as follows: 58% Chamorro, 2% Carolinian, 38% Filipino, 8% East Asian East Asian (including China, Korea, Japan), 0% Other Asian, 10% Other Pacific Islander, and 8% Other. Thirty-two percent of the respondents were male and sixty-eight percent female, and the mean age of respondents was 23.29 (*SD* = 7.13).

Altered Methods

Originally, the project was planned to include interviews of diabetic patients and medical professionals, as well as survey responses to two focused surveys. However, due to limited feedback from respondents contacted, there was insufficient data to include in the final results (see Appendix C). One promising avenue was interviewing patients and medical professionals, but due to limited time, only three interviews were conducted.

Results

The general survey received fifty responses and eighty percent (40 individuals) of participants reported either having diabetes or someone close to them having diabetes. When asked if hiding or downplaying pain was a part of their culture, the 50 respondents had an average response of 2.96 (*SD* = 1.31) on a scale of 1 to 5, with 1 equating "Absolutely" and 5 "Not at all." The median and mode were both 3, and the range was 4. The range was 4 for all of the following questions on the 1 to 5 scale. When asked if the perception of pain affected health care visits in their community, the mode and median were also 3, and the mean was 3.02 (*SD* = 1.19). A question inquiring as to whether the average person in their community was physically active, elicited a greater deviation from the center with a mode and median of 4, and a mean of 3.76 (*SD* = 0.92).When respondents were asked if they believed there was adequate patient education and prevention services for diabetes in the CNMI, the average response was 3.32 (*SD* = 1.25), with a mode and median of 3. The respondents were asked if individuals from their community regularly received blood sugar checks and the mode was 5, the median was 4, and the mean was 3.62 (*SD* = 1.29). When asked if individuals in their community were able to maintain their weight and blood pressure, respondents answered with a

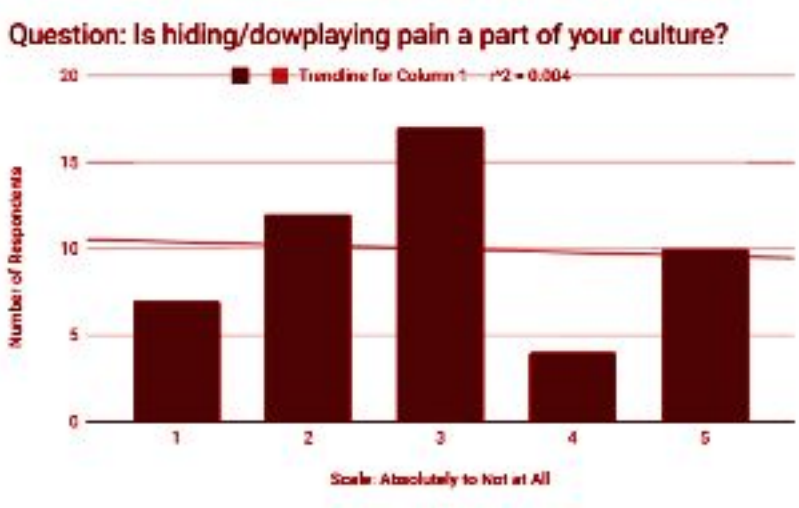


Figure 1. Question: Is hiding/downplaying pain a part of your culture? This figure displays the variety of responses to this question.

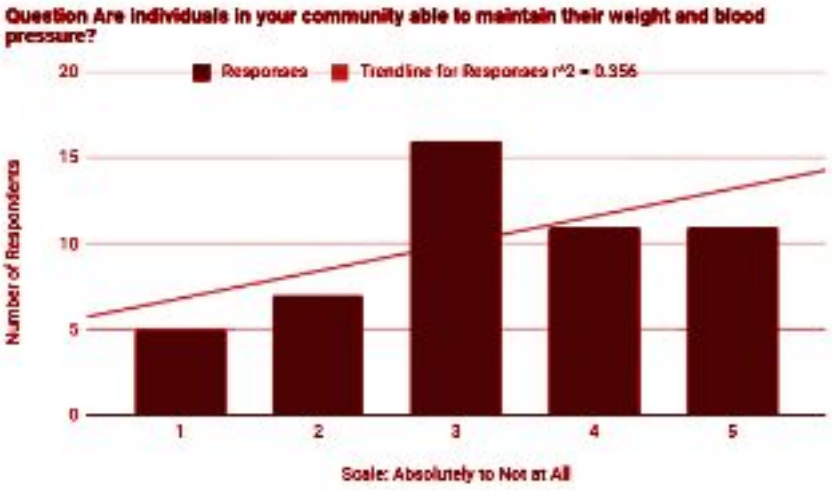


Figure 2. Question: Are individuals in your community able to maintain their weight and blood pressure? This figure displays the variety of responses to this question.

median and mode of 4 and a mean of 3.88 (*SD* = 1.0). The 50 respondents were also asked if individuals in their community took their medications as properly prescribed on the 1 to 5 scale, but were also given the choice of responding with "I do not know" if they did not have personal experience with the subject. Of the 50 respondents, 24 responded "I do not know," and 26 chose a response on the 1 to 5 scale. The mode was 1, the median 3, and the mean was 1.46 (*SD* = 1.47). Out of the 50 respondents, 12 (24 percent of respondents) also left additional comments at the end of the survey regarding poor diets on island as a related factor to diabetes acquisition, uncontrolled diabetes, and limb loss. Comments included "The diet of our people in the CNMI contributes greatly to our health" (Respondent 5) and "(people) should be made aware of their eating habits or food choices at an early age" (Respondent 34).

Discussion

The results of the general survey show that eighty percent of the population is affected by diabetes, whether they have it or someone close to them does. This is a significant percentage of the CNMI's population, and it clearly displays how impactful diabetes related issues can be to the total population. Many of these respondents did not identify pain as a very

significant part of the CNMI's culture, as the mean was 2.96 on the 1 to 5 scale, which equates to "Somewhat." The findings were similar for the category of adequate services and education programs for diabetic patients. This indicates that there is no strong negative or positive relationship with either the impact of pain perception or services/programs category, as they are both present, but neither is significantly impacting or not impacting individuals. As there was no significant results when patients were asked if a negative perception of pain was present in the culture or if it affects discussion and/or reporting of pain, the hypothesis of finding a strong correlation between the cultural perception of reporting/discussing pain and limb amputation in diabetic patients was not proven.

There was a stronger response when respondents were asked if individuals in the community were able to maintain their weight and blood pressure, were physically active, and received regular blood sugar level checks. Interestingly, although respondents indicated that there were somewhat adequate services/programs for diabetic patients, they also indicated that blood glucose tests were not readily available in the community. This suggests that there are gaps in the community's provision of diabetes detection and prevention services. According to an article from Harvard Health Publishing, individuals without diabetes or pre-diabetes should generally test their blood glucose level every year to every three years depending on their health history (n.a., 2014). By regularly checking and identifying individuals who have or at risk for diabetes, patient teaching and appropriate health regimens can be applied.

Furthermore, the respondents answered that individuals in their community were generally unable to maintain (1) their weight and blood pressure and were generally not (2) physically active. Physical activity and maintaining weight and blood pressure were two factors

identified as contributors to not only diabetes, but also complications such as limb loss and infections (Shojaiefard, Khorgami, & Larijani, 2008; Nazri et al., 2016). Therefore, this indicates that these issues are likely impacting the rates of diabetes acquisition and limb loss on island. Furthermore, another identified contributing variable was diet, which was directly mentioned by 24 percent of individuals in the additional comment section. These three variables should further be explored in future studies.

Ultimately, this study faced limitations that should be considered and avoided in future research. The number of respondents, at 50, was too low to reach statistical significance. Additionally, the majority of respondents were reached using the Northern Marianas College email interface, therefore overrepresenting college-aged individuals and underrepresenting other groups within the CNMI's total population. Additionally, the focused surveys (distributed by email) were not successful in collecting data, as no responses were received. However, the interviews, which were done in person, were successful in collecting data, but due to the time constraints surrounding this project, not enough individuals were interviewed. Since respondents were receptive to interviewing, this method should be further explored in future studies.

References

Almekinder, E. (2017, September 26). Diabetes and Amputation: Everything You Need To Know To Avoid Amputation. Retrieved October 24, 2017, from https://www.thediabetescouncil.com/diabetes-and-amputation-everything-you-need-to-know-to-avoid-amputation/

Dillon, M. P., Fortington, L. V., Akram, M., Erbas, B., & Kohler, F. (2017). Geographic Variation of the Incidence Rate of Lower Limb Amputation in Australia from 2007-12. Plos One, 12(1), e0170705. doi:10.1371/journal.pone.0170705

Durand, A. M., Bourne, J., Thohey-Mote, D., Khorram, K. D., & Abraham, I. J. (1997). Diabetes in the Indigenous Population of the Commonwealth of the Northern Mariana Islands. *Asia Pacific Journal of Public Health, 9*(1), 28-32. doi:10.1177/101053959700900106

Ichiho, H. M., Robles, B., & Aitaoto, N. (2013). An Assessment of Non-Communicable Diseases, Diabetes, and Related Risk Factors in the Commonwealth of the Northern Mariana Islands: A Systems Perspective. *Hawai'i Journal of Medicine & Public Health*, *72*(5 Suppl 1), 19–29.

Mohd Yusof, N., Ab Rahman, J., Hafiz Zulkifly, A., Che-Ahmad, A., Ariffin Khalid, K., Fadzil Sulong, A., & Vijayasingham, N. (2016). Predictors of Major Lower Limb Amputation among Type II Diabetic Patients. New Indian Journal of Surgery, 7(3), 239-243. doi:10.21088/nijs.0976.4747.7316.4

N.a. (2013). *How often should you get your blood sugar checked?* Retrieved November 20, 2017, from

https://www.health.harvard.edu/diseases-and-conditions/how-often-should-you-get-your-blood-sugar-checked-

N.a. (2017). *Amputee Coalition/National Limb Loss Information Center Fact Sheet.* Retrieved October 24, 2017, from http://www.amputee-coalition.org/fact_sheets/diabetes_leamp.html

Robinson, T. E., Kenealy, T., Garrett, M., Bramley, D., Drury, P. L., & Elley, C. R. (2016). Ethnicity and risk of lower limb amputation in people with Type 2 diabetes: a prospective cohort study. Diabetic Medicine: A Journal Of The British Diabetic Association, 33(1), 55-61. doi:10.1111/dme.12807

Sahakyan, K., Klein, B. E., Lee, K. E., Myers, C. E., & Klein, R. (2011). The 25-Year Cumulative Incidence of Lower Extremity Amputations in People With Type 1 Diabetes. *Diabetes Care, 34*(3), 649-651. doi:10.2337/dc10-1712

Shojaiefard, A., Khorgami, Z., & Larijani, B. (2008). Independent risk factors for amputation in diabetic foot. International Journal of Diabetes in Developing Countries, 28(2), 32–37. http://doi.org/10.4103/0973-3930.43096

Zaidi, G., Zafar, N., Noor-ul-Huda, Zubair, R., Farooq, S., & Kausar, R. (2013). Quality of Life and Adjustment among Type II Diabetes Patients With and Without Lower Limb Amputation. Journal Of Behavioural Sciences, 23(3), 72-86.

Appendices

Chenoa Bunts-Anderson

Northern Marianas College

Dr. Bunts-Anderson, EN 202-01

Appendix A

General Survey

This is a general survey on limb loss in diabetic patients. Please answer the following questions to the best of your ability and share the survey with others who would like to as well. Thank you!

All collected information is anonymous, but you are free to leave any personal information or contact information if you wish.

* Required

1. **Do you or does someone close to you have diabetes?** *
   Mark only one oval.
   - ◯ Yes
   - ◯ No

2. **If yes, what kind of diabetes (Type 1 or Type 2), how many individuals (including yourself), and of what gender?**

3. **Have you or has someone you've known lost a limb because of diabetes? If yes, please write what you can about the cause and situation.** *

4. **What is your ethnic/racial background?** *
   Check all that apply.
   - ☐ Chamorro
   - ☐ Carolinian
   - ☐ Filipino
   - ☐ East Asian (China, Korea, Japan, etc.)
   - ☐ Other Asian
   - ☐ Other Pacific Islander
   - ☐ Other

5. **What is your age and gender?** *

6. **Is hiding/downplaying pain a part of your culture?** *
Mark only one oval.

	1	2	3	4	5	
Absolutely	◯	◯	◯	◯	◯	Not at all

7. **Does the perception of pain affect healthcare visits in your community?** *
Mark only one oval.

	1	2	3	4	5	
Absolutely	◯	◯	◯	◯	◯	Not at all

8. **In your opinion, is the average person in your community physically active?** *
Mark only one oval.

	1	2	3	4	5	
Absolutely	◯	◯	◯	◯	◯	Not at all

9. **In your opinion, are there adequate patient education and prevention services for diabetes on island?** *
Mark only one oval.

	1	2	3	4	5	
Absolutely	◯	◯	◯	◯	◯	Not at all

10. **In your experience, do individuals in your community receive regular blood sugar checks?** *
Mark only one oval.

	1	2	3	4	5	
Absolutely	◯	◯	◯	◯	◯	Not at all

11. **Are individuals in your community able to maintain their weight and blood pressure?** *
Mark only one oval.

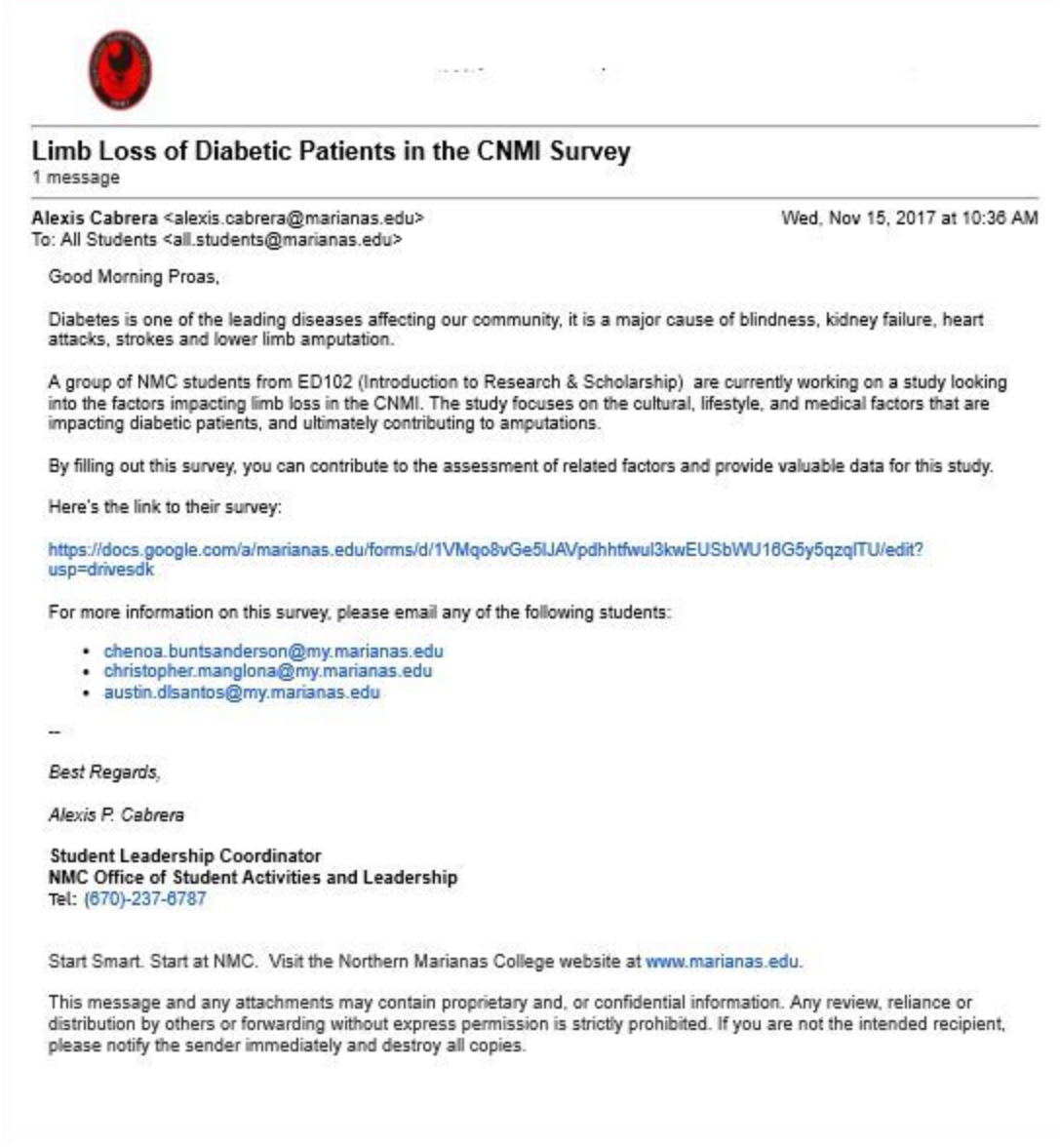
	1	2	3	4	5	
Absolutely	◯	◯	◯	◯	◯	Not at all

12. **In your opinion, do diabetic individuals in your community properly take their prescribed medication? Scale your answer from 1 - 5 (Absolutely to Not at all). If you do not know, write "I don't know."** *

13. **Do you have anything to add about diabetes and/or limb loss in the CNMI? Feel free to leave any comments, stories, or insights into factors such as diet.**

Appendix B

This email was distributed to Northern Marianas College (NMC) students by Alexis Cabrera, a staff member from NMC, after receiving permission from NMC administration to distribute the survey. Survey respondents further indicated that they additionally forwarded the email to others in the community.



Limb Loss of Diabetic Patients in the CNMI Survey
1 message

Alexis Cabrera <alexis.cabrera@marianas.edu> Wed, Nov 15, 2017 at 10:36 AM
To: All Students <all.students@marianas.edu>

Good Morning Proas,

Diabetes is one of the leading diseases affecting our community, it is a major cause of blindness, kidney failure, heart attacks, strokes and lower limb amputation.

A group of NMC students from ED102 (Introduction to Research & Scholarship) are currently working on a study looking into the factors impacting limb loss in the CNMI. The study focuses on the cultural, lifestyle, and medical factors that are impacting diabetic patients, and ultimately contributing to amputations.

By filling out this survey, you can contribute to the assessment of related factors and provide valuable data for this study.

Here's the link to their survey:

https://docs.google.com/a/marianas.edu/forms/d/1VMqo8vGe5lJAVpdhhtfwul3kwEUSbWU16G5y5qzqlTU/edit?usp=drivesdk

For more information on this survey, please email any of the following students:

- chenoa.buntsanderson@my.marianas.edu
- christopher.manglona@my.marianas.edu
- austin.dlsantos@my.marianas.edu

--

Best Regards,

Alexis P. Cabrera

Student Leadership Coordinator
NMC Office of Student Activities and Leadership
Tel: (670)-237-6787

Start Smart. Start at NMC. Visit the Northern Marianas College website at www.marianas.edu.

This message and any attachments may contain proprietary and, or confidential information. Any review, reliance or distribution by others or forwarding without express permission is strictly prohibited. If you are not the intended recipient, please notify the sender immediately and destroy all copies.

Appendix C

Originally, the project was planned to include interviews of diabetic patients and medical professionals. These two groups of people were chosen in order to highlight the personal and professional perspectives of the issue. Eight individuals were contacted for the purpose of interviewing--however, only three interviews were performed due to time constraints. All three interviewees were diabetic patients and one individual had experienced lower limb amputation. One of the individuals, who had not suffered limb loss was also a medical professional, and was interviewed with two sets of questions.

Additionally, there were two focused surveys: Focused Medical Professional Survey (FMPS) and Focused Diabetic Patient Survey (FDPS). The FMPS was distributed to medical professionals within the Northern Marianas Islands who have had professional experience with diabetes. The participants were identified through local diabetes organizations and health services. The purpose of the FMPS was to gather data from a medical perspective. The final survey was the FDPS and its respondents were to come from two sources: (1) participating local families identified through community discussions and (2) willing diabetic patients identified through medical professionals. The FDPS was targeted towards diabetic patients to identify the direct perception, awareness, and relationship to the identified variables: diet, cultural influences on diet, stress, physical activity, maintaining weight and blood pressure, blood sugar level checks, proper medication, cultural perspective on reporting/discussing pain/injury, patient education, and prevention services. Seven individuals were sent the FMPS by email, and two individuals were sent the FDPS by email. No responses were received.

Due to limited feedback from respondents contacted, there was insufficient data to include in the final results.

Transcribed Brainstorm

BRAINSTORM

TOPICS
Limb Loss
Oral Cancer
Coral Reefs
Local Beliefs

NARROWED
Limb Loss
Coral Reefs

LIMB LOSS
Surveys
Access to Professionals

- Would match my major
- Related to my career
- Unexplored topic
- Relevant; current issue

Coral Reefs
Current Research Being Done
Readily Available Data