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The Health Impact of Dietary Choices on Ni-Vanuatu

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Background

Developing nations experience an energy shift from the immune function of fending off infectious disease to growth and development. As malaria has been all but eradicated the shifting energy has caused a proliferation of chronic diseases in Vanuatu. This chronic disease burden seems to be influenced by the consumption of Western processed foods such as tinned meats, as well as by lifestyle choices. The use of modern luxuries often decreases aerobic activities like tending gardens and playing outdoors as the number of people eating processed foods and playing on their phones increases. The negative impact of processed foods is likely mitigated by the activities of rural life. Individuals that adopt both modern dietary and lifestyle habits are likely to see greater negative impacts on their life-expectancy than those that remain active.

Methodology

We converted a formula developed by Stylianou et al. (2021) for use in Microsoft Excel, which evaluates individual foods and their influence on life-total to find HENI scores. A HENI score is an **estimated impact on life expectancy** measured in minutes. HENI values were found for commonly eaten Pacific foods by using food tables produced for the Pacific Islands (Dignan et al., 2002). Then, by using a 100g serving assumption, we quantified the 24-hour dietary recall of 175 participants into HENI values.

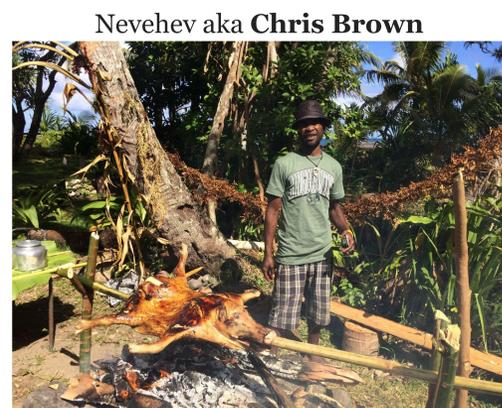


HENI for 100g serving of Taro = **4.5 minutes**

Statistical Methods

We calculated a Pearson correlation coefficient for the BMI and HENI scores of the 23 internet users. Which produced a moderate negative correlation $r = -.063$; this relationship was found to be significant ($p = .0018$).

No significant correlation was found with BMI and HENI scores amongst the entire sample surveyed ($r = -.024$, $n = 175$).



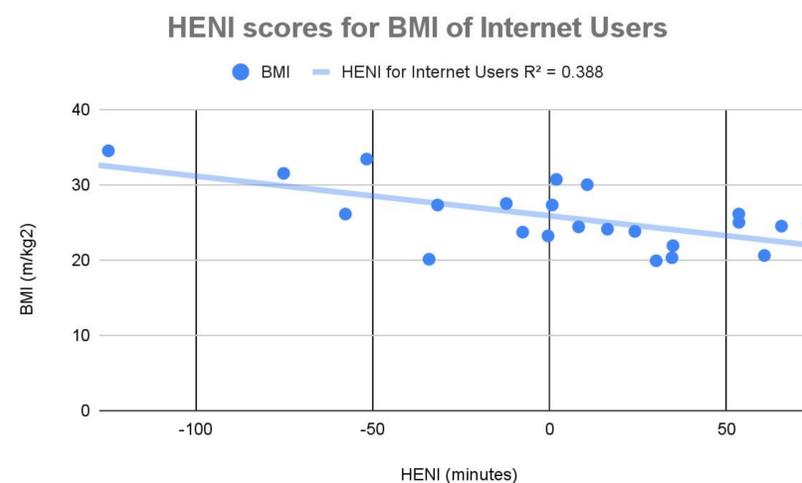
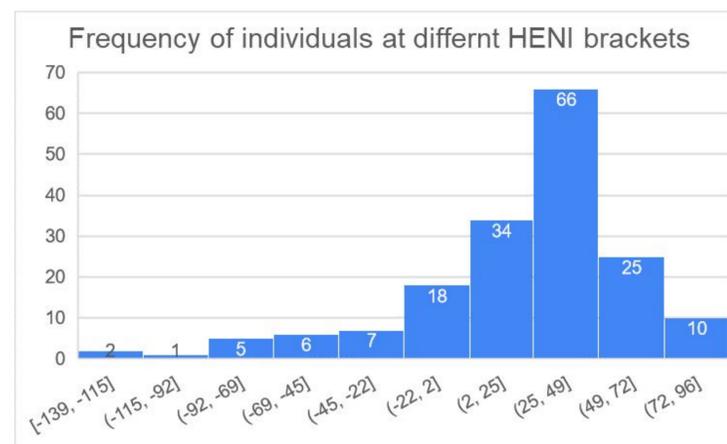
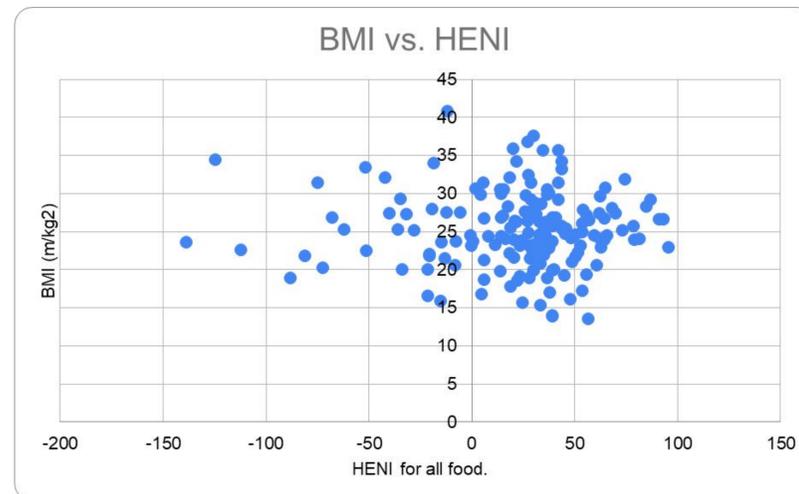
Nevehev aka **Chris Brown**
HENI for 100g serving of Roast Pig = **-5 minutes**

Participants

86 females and 94 males between the ages of 5 and 79 from the island of Aneityum gave their informed consent (or parental assent in the case of a minor) to take part in this survey that took place between the months of July and August in the year 2017.



HENI for 100g serving of Tinned Beef = **-51 minutes**



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Results

Within the 23 individuals, aged between 21-54, with access to the internet we found a correlation of **-0.63**. A two-tailed t-test produced a p value of 0.0017 for the relationship between BMI and the HENI value associated with the subjects dietary recall.

Conclusion

By comparing HENI scores in minutes from 24-hour dietary recalls to BMI we found a significant correlation among the few internet users surveyed on Aneityum. The usage of the internet was used as a proxy for sedentary behavior and the results echo that of Van Horn et al. where two modern behaviors, buying processed foods and using the internet were associated with unhealthy anthropometrics(2019). As seen by the lack of correlation amongst the entire sample, many inhabitants of Aneityum were likely protected from chronic disease due to their rural lifestyle, however as the island is developed there seems to be an increased risk in those that adopt modernity(Olszowy et al., 2015).

It is worth mentioning that in 2015 facebook began providing Free Basics, the free, limited internet service to many developed countries. The “free” adoption of a service such as facebook leads more people to spend their time browsing and less time tending to their gardens or playing outdoors. As developing nations such as Vanuatu accept modern convenience products they seem to be plagued by modern chronic diseases.

Acknowledgements

We would like to thank the people of Aneityum for their willingness to be surveyed as well as Chris Brown for on August 5th, 2017 he circumambulated Aneityum in 13.5 hours, 78,000 steps, 37.24 miles, 321 flights of stairs equivalent as he went up and down the coastal ridges to prove that even today one person can do what was once required after the death of a chief.

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