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NYBG-led Research Team Finds Pacific Islanders in Transition between Traditional and Modern Lifestyles Score Lowest on Scale of Health Indicators

Population Study Published in *PLOS ONE* Has Widespread Implications for Healthy Living, Aging, and Longevity for the U.S. and Other Parts of the World, Researchers Say



Examples of traditional practices in the state of Pohnpei, part of the Federated States of Micronesia: A man makes a canoe that will be used for fishing (left), and a woman harvests bamboo for the construction of a dwelling (right).

Bronx, NY—A team of researchers led by a New York Botanical Garden scientist has found that residents of a Pacific island nation who are in transition between traditional, agrarian communities and modernized areas are more likely to have unhealthful lifestyles and lower overall health scores than those living in either traditional or modernized communities.

The findings from the study of residents of the state of Pohnpei in the Federated States of Micronesia (FSM) have important implications that are applicable to the greater global population, including the U.S., according to the scientists, whose work was led by Michael J. Balick, Ph.D., Vice President for Botanical Science and Director and Philecology Curator of the Institute of Economic Botany at the Botanical Garden.

“Lessons from this remote island can be useful in understanding healthy living, aging, and longevity elsewhere in the world,” they write in their paper entitled “Traditional lifestyles, transition, and implications for healthy aging: An Example from the remote island of Pohnpei, Micronesia,” which was published recently in the peer-reviewed, open-access scientific journal *PLOS ONE*. “Importantly, the process of transition must be recognized as a significant lifestyle and health risk and given the same attention that we give to other risk factors that negatively influence our health and quality of life.”

Over the course of a decade of field and laboratory research, the interdisciplinary team investigated the relationship between a decline in traditional lifestyle practices—many of which are plant-based—and the increase in indicators of health risks for such conditions as diabetes, high blood pressure, and obesity.



Mwoakilloa, a remote island in the state of Pohnpei, was one of the research sites in the study published in *PLOS ONE*.

The scientists developed a survey instrument designed to rank individuals on two scales: on how traditional and how healthful their lifestyles were. They interviewed 407 people on three different types of islands in the state of Pohnpei, including Pohnpei Island, the largest and most populous island in the state. The interviewees were classified as living in remote, modern, or transitional communities (meaning they had recently moved from a remote area to a more developed area or vice versa).

Questions on the traditional/modern scale included whether survey subjects regularly went fishing, grew their own crops, used traditional medicines, and prepared sakau (a mildly intoxicating beverage made from the root of the kava plant)—all considered more traditional practices—or watched television, had a desk job, and worked on a computer, which were considered more modern.

Questions on the healthful/unhealthful lifestyle scale included whether survey subjects ate fresh fish and local produce such as breadfruit, taro, and coconuts—which were considered more healthful—or consumed prepared foods such as canned fish, white rice, candy, pizza, and white bread, which were considered more unhealthful.

As they hypothesized, residents of more developed areas scored lower on both the traditional lifestyles and healthfulness scales than those in remote areas. Surprisingly, however, the people living in transitional communities ranked lowest on both scales.

“These results may reflect the fact that this population is living under the most pressure impacting their livelihood and general wellbeing,” the scientists write.

For instance, it is likely that transitional populations do not have much land for agriculture and have less money to buy fresh food. Being new to an area, they also have fewer relationships and community support. Applying their findings more broadly, the researchers note that divorce, widowhood, job loss, retirement, and relocation are common transitions associated with aging and economic hardship globally, including the U.S.

“There are lessons to be learned regarding the health benefits of the diverse nutritious foods, regular physical exercise, and community relationships so integral to the Pohnpeian traditional way of life that are widely applicable to the global population,” they write.

The interdisciplinary research group included authors from The New York Botanical Garden, Southern Arizona VA Health Care System, North Carolina State University, American Academy of Family Physicians, Columbia University, Conservation Society of Pohnpei FSM, The Nature Conservancy—Micronesia Office, and University of Hawai'i at Mānoa.

Partners in the research project included the FSM Ministry of Health, the Pohnpei Council of Traditional Leaders, the Pohnpei State Department of Health Services, the Pohnpei State Hospital, the Pohnpei State Government, the Pohnpei Department of Lands and Natural Resources, the Pohnpei Department of Economic Affairs, the Island Food Community of Pohnpei, and College of Micronesia-FSM.

“Traditional lifestyles, transition, and implications for healthy aging: An Example from the remote island of Pohnpei, Micronesia” is available at:

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0213567>

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Media Contact: Stevenson Swanson, 718.817.8512; sswanson@nybg.org