

HAWAI'I JOURNAL WATCH

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Highlights of recent research from the University of Hawai'i and the Hawai'i State Department of Health

CULTURALLY INFORMED RESEARCH METHODS ARE NEEDED IN RESEARCH ON NATIVE HAWAIIAN MENTAL HEALTH

Researchers led by Rachel L. Burrage MSW, PhD, of the Myron B. Thompson School of Social Work, conducted a scoping review of the literature on Native Hawaiian mental health and psychological well-being. The review included 21 empirical studies of Native Hawaiians in the US that linked psychological well-being to relational, physical, spiritual, or cultural constructs. The analysis revealed the importance of utilizing research methods that incorporate Native Hawaiian cultural values and concepts. For example, in studies of overcoming adversity, research demonstrated the importance of assessing the support of 'ohana (family). Studies also showed the value of using a decolonization framework in research design, the importance of connection to place for Native Hawaiian wellbeing and considering cultural identity in mental health research, and the significance of incorporating Hawaiian culture into health interventions. The researchers concluded future studies should include such methods.

- Burrage R, Antone M, Kaniaupio K, Rapozo K. A culturally informed scoping review of Native Hawaiian mental health and emotional well-being literature. *Journal of Ethnic & Cultural Diversity in Social Work*, 2020:1–13. <https://doi.org/10.1080/15313204.2020.1770656>

PRENATAL EXPOSURE TO METHAMPHETAMINE LINKED TO EPIGENETIC CHANGES IN CHILDREN

Children exposed to methamphetamine prenatally show epigenetic alterations in a gene involved in the body's stress response. Researchers including Charles Neal, MD, PhD, of the John A. Burns School of Medicine, analyzed DNA from saliva samples, and levels of the stress hormone cortisol from hair samples from 90 children ages 10 to 11 in Hawai'i and California. The children's mothers had participated in the Infant Development Environment and Lifestyle study, which collected data on methamphetamine use during pregnancy. Regression analysis showed that prenatal methamphetamine exposure, as well as children's scores on the postnatal early adversity index, were associated with greater methylation of a gene called HSD11B2. The associations held when the researchers controlled for mothers' tobacco, alcohol, and marijuana use. HSD11B2 encodes an enzyme that converts cortisol to an inert form, reducing circulating cortisol levels; the methylation of HSD11B2 reduces the enzyme's activity, increasing cortisol levels. The findings show that early experiences can become biologically embedded and have long-term health implications.

- Oni-Orisan OO, Dansereau LM, Marsit CJ, et al. DNA methylation in children with prenatal methamphetamine exposure and environmental adversity. *Pediatr Res*. 2020;[published online ahead of print]. doi:10.1038/s41390-020-1058-4

MORE THAN 300 ANTIMICROBIAL COMPOUNDS CATALOGED IN NEW REVIEW

Bacteria belonging to a group called marine actinomycetes have been a predominant source of recently identified natural compounds that show activity against microbes that infect humans. In a review

article, researchers including Shugeng Cao PhD, of the Daniel K. Inouye College of Pharmacy, list the sources, chemical structures, and antimicrobial activities of 313 actinomycetes compounds reported in the literature between 1976 and 2019. The review found that 272 compounds had antibacterial properties, including compounds with activity against the bacteria that cause staph/strep infections, and tuberculosis. There were 70 compounds that showed antifungal activity, including compounds that can stop the growth of the yeast *Candida albicans*, which also infects people. Most of the actinomycetes bacteria were isolated from marine sediments, but some were isolated from animals such as sponges and corals. The researchers concluded that more useful compounds will likely be found with new screening approaches.

- Wang C, Lu Y, Cao S. Antimicrobial compounds from marine actinomycetes. *Arch Pharm Res*. 2020;10.1007/s12272-020-01251-0. doi:10.1007/s12272-020-01251-0

YOUNG PEOPLE IN HAWAI'I HAVE HIGH RATES OF CHRONIC DISEASE

Chronic diseases such as asthma, diabetes, and chronic kidney disease are prevalent among children and young adults needing hospital care in Hawai'i. Researchers led by Tetine L. Sentell PhD, of the Office of Public Health Studies, gathered data on all 31 400 inpatient and 261 890 emergency department (ED) visits for children and young adults ages 5 to 29 during 2015 and 2016. Results showed 28.1% of hospitalized patients and 12.8% of ED patients had at least 1 chronic disease. Native Hawaiians in the hospital and ED settings, and Filipinos and Other Pacific Islanders in the hospital setting had higher rates of chronic conditions than other racial/ethnic groups. Rates of chronic conditions in young people in Hawai'i have been understudied; the new findings may help support intervention programs aimed at preventing or managing chronic diseases in young people.

- Sentell T, Choi SY, Ching L, et al. Prevalence of selected chronic conditions among children, adolescents, and young adults in acute care settings in Hawai'i. *Prev Chronic Dis*. 2020;17:E67. doi:10.5888/pcd17.190448

OVARIAN CANCER RISK FACTORS VARY ACROSS RACIAL/ETHNIC GROUPS

There are differences in the risk factors for epithelial ovarian cancer (EOC) across racial/ethnic groups. Researchers including Danja Sarink PhD, of the UH Cancer Center, analyzed data from the Multiethnic Cohort (MEC) Study, which includes African Americans, Native Hawaiians, Japanese Americans, whites, and Latinas. The study included 91 625 women at baseline. Over a median follow-up of 21 years, 607 women developed EOC. Results showed that parity and oral contraceptive use were inversely associated with EOC risk in the overall study population, but the associations were strongest among Japanese Americans. Having an older age at natural menopause and the use of postmenopausal hormones were associated with EOC risk only in Latinas. The researchers concluded that more research is needed to better understand the factors that contribute to differences in EOC risk, especially for Native Hawaiian, Asian American, and Latina women.

- Sarink D, Wu AH, Le Marchand L, et al. Racial/ethnic differences in ovarian cancer risk: Results from the Multiethnic Cohort Study. *Cancer Epidemiol Biomarkers Prev*. 2020;cebp.0569.2020. doi:10.1158/1055-9965.EPI-20-0569