

HAWAII JOURNAL WATCH

KAREN ROWAN MS

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

DIABETES EDUCATION PROGRAM BLENDS FAMILY/FRIEND SUPPORT WITH TECHNOLOGY

In under-resourced, rural communities in Hawai'i, a diabetes self-management (DSM) program that taps into friend-and-family support can lead to improved knowledge, self-care behaviors, and hemoglobin A1C levels. Researchers including Joanne R. Loos PhD, of the School of Nursing and Dental Hygiene, piloted a 9-month DSM program on Moloka'i with 7 participant dyads, each including 1 patient with type 2 diabetes and 1 family member or friend for support. The program involved diabetes education sessions delivered via telehealth, Bluetooth-enabled glucometers, community health services, and mobile technologies to activate and support the program. Participants demonstrated increased diabetes knowledge and all increased their glucose monitoring frequency. Most participants reported increased exercise and increased medication adherence, and some reported increased daily foot exams. The researchers concluded the findings support the utility of leveraging social capital to promote cost-effective, community-centric diabetes management in these settings.

- Higa C, Davidson EJ, Loos JR. Integrating family and friend support, information technology, and diabetes education in community-centric diabetes self-management. *J Am Med Inform Assoc.* 2020;ocaa223. doi:10.1093/jamia/ocaa223

HOW SARS-CoV-2 SPREADS THROUGH THE AIR

Airborne transmission of SARS-CoV-2 is largely governed by physicochemical factors, such as the size of aerosols, the momentum of their motion, and their interactions with various surfaces. In a new review article, researchers led by Yi Y. Zuo PhD, of the John A. Burns School of Medicine and the UH Department of Mechanical Engineering, synthesized the literature on airborne transmission of SARS-CoV-2. The review showed that there is a high likelihood that SARS-CoV-2 spreads via aerosols, and that while large aerosols in inhaled air tend to be deposited in the nose, throat, or bronchi, small particles may penetrate to the furthest alveolar regions of the lungs, where fewer clearance mechanisms are at work and rapid onset of severe infection can begin. Further study of the mechanics of COVID-19 aerosol transmission could lead to science-based ventilation protocols, antiviral materials and coatings, and even new therapeutic interventions, the researchers concluded.

- Zuo YY, Uspal WE, Wei T. Airborne transmission of COVID-19: Aerosol dispersion, lung deposition, and virus-receptor interactions. *ACS Nano.* 2020;10.1021/acsnano.0c08484. doi:10.1021/acsnano.0c08484

UTILIZING THE SOCIAL DETERMINANTS OF HEALTH FRAMEWORK DURING COVID-19

As COVID-19 continues to disproportionately affect older adults, social workers can utilize the social determinants of health (SDH) conceptual framework to guide their care. Yeonjung Jane Lee PhD, of the Myron B. Thompson School of Social Work, identified issues of heightened inequality due to COVID-19. Older adults who live

in poverty may face food insecurity or have inadequate access to health care. Older adults with disabilities are at elevated risk of COVID-19 exposure. The pandemic has increased social isolation, which is associated with negative outcomes for older adults with heart disease or problems with psychological well-being or cognitive health. To better support older adults, social workers can facilitate pandemic preparedness and social networking via apps or other safe platforms and provide support to care givers. Lee concluded that the application of the SDH framework can strengthen the response to the pandemic.

- Lee YJ. The impact of the COVID-19 pandemic on vulnerable older adults in the United States. *J Gerontol Soc Work.* 2020;1-6. doi:10.1080/01634372.2020.1777240

DIABETES PREVENTION PROGRAMS IN HAWAII INCLUDE MANY CULTURAL ADAPTATIONS

In Hawai'i, diabetes prevention programs based on standardized curricula benefit from the inclusion of culturally appropriate adaptations. Evaluators including L. Brooke Keliikoa DrPH, of the Office of Public Health Studies, described the adaptations made by staff members running programs at 7 federally qualified health centers (FQHCs) in Hawai'i. The evaluation team conducted a document review and interviewed FQHC staff members. Results showed there were 61 adaptations across the 7 FQHCs, with each FQHC adding 4 to 16 adaptations to the existing curricula. The adaptations included incorporating hula, Zumba, and beach clean-ups as physical activity, featuring foods commonly consumed in Hawai'i in discussions about diet, and building in social support through a dyadic recruitment strategy. Such adaptations require staff time and creativity, and help to make the programs salient to local communities, which is important in retaining participants in the program.

- Stuppelbeen D, Pirkle C, Domingo JL, Nett B, Sentell T, Keliikoa LB. Adaptions to the national diabetes prevention programme lifestyle change curriculum by Hawai'i federally qualified health centers: A qualitative descriptive study. *BMJ Open.* 2020;10(11):e037577. doi:10.1136/bmjopen-2020-037577

GENDER DIFFERENCES IN DIET ANALYSIS IN A MULTIETHNIC COHORT

Diet studies often use food frequency questionnaires (FFQs), but often do not account for gender differences in portion sizes in their analyses. Researchers led by Minji Kang PhD, of the University of Hawai'i Cancer Center, examined FFQ and mortality data from 156,434 participants in the Multiethnic Cohort Study, which includes African American, Native Hawaiian, Japanese American, Latino, and non-Hispanic white participants. The researchers assessed participants' total daily energy intake based on 2 calculations of portion sizes – one that did not differ by gender, and one that did. Results showed differences between the calculations. For example, women's mean daily energy intake was 1979 kcal based on the original calculation, but 1595 kcal based on the gender-specific calculation. Moreover, small differences were seen in the associations between total energy intake and all-cause, cardiovascular disease, and cancer mortality. The researchers concluded that studies that use absolute energy intake may benefit from calculating gender-specific portion sizes.

- Kang M, Park SY, Boushey CJ, et al. Does incorporating gender differences into quantifying a food frequency questionnaire influence the association of total energy intake with all-cause and cause-specific mortality? *Nutrients.* 2020;12(10):2914. doi:10.3390/nu12102914