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## Recent Work

### Title

PHYSICAL ACTIVITY AS STRESS MANAGEMENT DURING COVID-19

### Permalink

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Peng, Katy  
[et al.](#)

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SOCIETY OF  
BEHAVIORAL  
MEDICINE

## 42<sup>ND</sup> ANNUAL MEETING & SCIENTIFIC SESSIONS

Virtual Conference | April 12-16, 2021



### ABSTRACT PREVIEW: PHYSICAL ACTIVITY AS STRESS MANAGEMENT DURING COVID-19

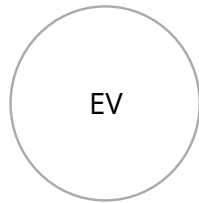
[Edit Physical activity as stress management during COVID-19](#)

Abstract ID: 935724

Presentation Type: Research Talk and Research Spotlight Session

Abstract Status: Active

#### Presenter(s)



#### Erin A. Vogel, PhD

**Position:**  
Postdoctoral Fellow

**Department:**  
Stanford Prevention Research Center, Department of Medicine

**Organization:**  
Stanford University

**Role:**  
Presenter

**Is this presenter a student?:**  
No

**Are you a speaker/presenter/co-author for this activity?**  
Yes, speaker/presenter

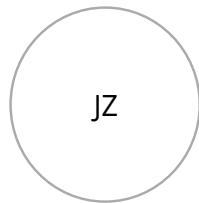
**List your education (basic preparation through highest degree held). Do not only list your highest degree.**

BA in Psychology (Illinois Wesleyan University, 2012), MA in Psychology (University of Toledo, 2014), PhD in Experimental Psychology (University of Toledo, 2017)

**List your past experiences relevant to topic area (most recent first).**

Publications relevant to stress and physical activity: Vogel, E. A., & Ramo, D. E. (in press). Smoking cessation, metabolic risk behaviors, and stress management over time in a sample of young adult smokers. *Translational Behavioral Medicine*. Ramo, D. E., Thrul, J., Vogel, E. A., Delucchi, K., & Prochaska, J. J. (2020). Multiple health risk behaviors in young adult smokers: Stages of change and stability over time. *Annals of Behavioral Medicine*, 54, 75-86.

**How is this presenter/co-author qualified (by education and/or experience) to teach assigned content? Expertise in a topic does not equate ability to teach the material.**



## Janice Zhang, BS

**Position:**  
Research Assistant

**Department:**  
Stanford Prevention Research Center, Department of Medicine

**Organization:**  
Stanford University

**Role:**  
Co-Author only

**Is this presenter a student?:**  
No

**Are you a speaker/presenter/co-author for this activity?**  
Co-author

**List your education (basic preparation through highest degree held). Do not only list your highest degree.**

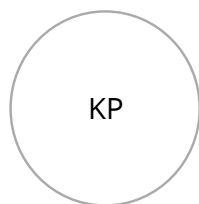
BS in Human Biology (Stanford University)

**List your past experiences relevant to topic area (most recent first).**

Janice works as a research assistant for the WELL Study, from which the data for this presentation are drawn. She has previously worked to implement public health interventions and improve chronic disease management in China.

**How is this presenter/co-author qualified (by education and/or experience) to teach assigned content? Expertise in a topic does not equate ability to teach the material.**

Janice obtained her Bachelor of Science in Human Biology from Stanford University, with a concentration in Epidemiology and Public Health. She has previously worked to implement public health interventions and improve chronic disease management in China. She is now utilizing her international experience to bridge well-being research in the San Francisco Bay Area and abroad.



## Katy Peng, MS

**Position:**  
IT System Analyst

**Department:**  
Stanford Prevention Research Center, Department of Medicine

**Organization:**  
Stanford University

**Role:**  
Co-Author only

**Is this presenter a student?:**  
No

**Are you a speaker/presenter/co-author for this activity?**

Co-author

**List your education (basic preparation through highest degree held). Do not only list your highest degree.**

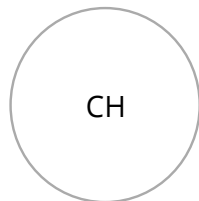
MA in Biological Science from University of Texas at Austin, MS in Computer Science from Texas State University

**List your past experiences relevant to topic area (most recent first).**

Katy has more than thirteen years of experience working in large high-tech corporations including DELL and HP. She started as a programmer analyst, then held a project manager position, responsible for team building, coaching team members in multi-culture global areas, and managing large-scale EAI projects.

**How is this presenter/co-author qualified (by education and/or experience) to teach assigned content? Expertise in a topic does not equate ability to teach the material.**

Katy works as an IT System Analyst on the WELL Study, managing the data for this study.

**Catherine A. Heaney, PhD, MPH****Position:**

Associate Professor

**Department:**

Stanford Prevention Research Center, Department of Medicine

**Organization:**

Stanford University

**Role:**

Co-Author only

**Is this presenter a student?:**

No

**Are you a speaker/presenter/co-author for this activity?**

Co-author

**List your education (basic preparation through highest degree held). Do not only list your highest degree.**

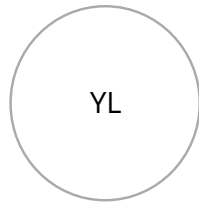
PhD, University of Michigan

**List your past experiences relevant to topic area (most recent first).**

Dr. Heaney's research program includes: 1) enhancing our understanding of psychosocial factors at work (occupational stress, social support at work, organizational justice, organizational empowerment) that are associated with health and disease; and 2) developing effective strategies for enhancing employee resiliency and reducing exposure to psychological and behavioral risk factors at work.

**How is this presenter/co-author qualified (by education and/or experience) to teach assigned content? Expertise in a topic does not equate ability to teach the material.**

In addition to relevant research and education, Dr. Heaney has extensive teaching experience. Her current courses include Community Health Psychology, Foundations for Community Health Engagement, and a human biology lecture series.



## Ying Lu, PhD

**Position:**

Professor of Biomedical Data Science

**Department:**

Department of Biomedical Data Science

**Organization:**

Stanford University

**Role:**

Co-Author only

**Is this presenter a student?:**

No

**Are you a speaker/presenter/co-author for this activity?**

Co-author

**List your education (basic preparation through highest degree held). Do not only list your highest degree.**

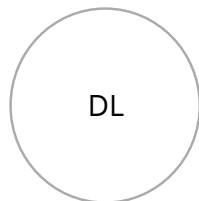
BS in Mathematics (Fudan University), MS in Applied Mathematics (Shanghai Jiaotong University), PhD in Biostatistics (University of California, Berkeley)

**List your past experiences relevant to topic area (most recent first).**

Dr. Lu's scholarly and research expertise includes biostatistics, clinical trials, statistical evaluation of medical diagnostic tests, radiology, osteoporosis, meta-analysis, and medical decision-making.

**How is this presenter/co-author qualified (by education and/or experience) to teach assigned content? Expertise in a topic does not equate ability to teach the material.**

Dr. Lu regularly works with undergraduate, graduate, and medical students when supervising their independent studies. He also serves as instructor for a consulting workshop on biomedical data science.



## David W. Lounsbury, PhD

**Position:**

Assistant Professor

**Department:**

Department of Epidemiology & Population Health

**Organization:**

Albert Einstein Medical College

**Role:**

Co-Author only

**Is this presenter a student?:**

No

**Are you a speaker/presenter/co-author for this activity?**

Co-author

**List your education (basic preparation through highest degree held). Do not only list your highest degree.**

PhD in Ecological-Community Psychology/Urban Studies (Michigan State University)

**List your past experiences relevant to topic area (most recent first).**

Dr. Lounsbury's domestic and international research aims to reduce chronic disease burden in medically underserved populations. He is a community psychologist and a psycho-oncologist with expertise in systems science methods.

**How is this presenter/co-author qualified (by education and/or experience) to teach assigned content? Expertise in a topic does not equate ability to teach the material.**

In addition to relevant research experience, Dr. Lounsbury teaches a course in engaged stakeholder research.



## **Ann W. Hsing, PhD, MPH**

**Position:**

Professor of Medicine

**Department:**

Stanford Prevention Research Center, Department of Medicine

**Organization:**

Stanford University

**Role:**

Co-Author only

**Is this presenter a student?:**

No

**Are you a speaker/presenter/co-author for this activity?**

Co-author

**List your education (basic preparation through highest degree held). Do not only list your highest degree.**

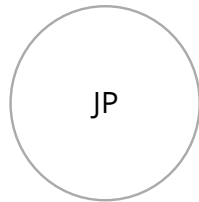
B.S. in Public Health (China Medical College), MPH (University of California, Los Angeles), PhD in Epidemiology (Johns Hopkins University)

**List your past experiences relevant to topic area (most recent first).**

Dr. Hsing is a professor of medicine at Stanford University and a co-leader of the Population Sciences Program at Stanford Cancer Institute. A senior fellow for the Center for Innovation in Global Health at Stanford University, Dr. Hsing has conducted population-based epidemiological studies on four continents, including North and South America, Asia, Africa, and Europe. Throughout her 22-year tenure at National Cancer Institute, Dr. Hsing developed extensive expertise in molecular epidemiology, global oncology, cancer prevention, and population-based studies in international settings.

**How is this presenter/co-author qualified (by education and/or experience) to teach assigned content? Expertise in a topic does not equate ability to teach the material.**

Dr. Hsing has authored more than 270 peer-reviewed articles, written seven book chapters, and mentored over 50 post-doctoral fellows and scholars. She currently serves as PI on the WELL Study in several countries.



## Judith J. Prochaska, PhD, MPH

**Position:**

Professor of Medicine

**Department:**

Stanford Prevention Research Center, Department of Medicine

**Organization:**

Stanford University

**Role:**

Co-Author only

**Is this presenter a student?:**

No

**Are you a speaker/presenter/co-author for this activity?**

Co-author

**List your education (basic preparation through highest degree held). Do not only list your highest degree.**

BA in Psychology (Duke University), MS in Clinical Psychology (San Diego State University), MPH in Health Promotion (San Diego State University), PhD in Clinical Psychology (SDSU/UCSD Joint Doctoral Program in Clinical Psychology)

**List your past experiences relevant to topic area (most recent first).**

Dr. Prochaska's research expertise centers on technology-mediated health behavior change interventions including targets of tobacco, physical activity, and dietary change. Working with Alaska Native and Latino communities, people with serious mental illness, alcohol and drug problems, or heart disease, and jobseekers and the unhoused, Dr. Prochaska's research combines stage-tailored interventions with pharmacotherapy and utilizes interactive expert system interventions and social media (Twitter and Facebook). Her work includes 8 RCTs with over 1700 smokers.

**How is this presenter/co-author qualified (by education and/or experience) to teach assigned content? Expertise in a topic does not equate ability to teach the material.**

In addition to relevant research experience, Dr. Prochaska has a long track record of teaching and mentoring experience at the undergraduate, graduate, and postdoctoral levels. She has also developed, evaluated, and is disseminating interprofessional health curricula in cardiology and psychiatry as part of the Rx for Change curriculum suite with over 10,000 registrants and 200,000 file downloads (<http://rxforchange.ucsf.edu>).

### Abstract & Details

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#### Topic

1st choice: Physical Activity

2nd choice: Stress

#### Clinical Relevancy

- NO

## First Time Submitter

- No

## Mentorship

- Yes

## I want to be considered for:

- Both - Research Talk and Research Spotlight Session

## Abstract Body

**Background:** Physical activity (PA) during COVID-19 shelter-in-place (SIP) may offset stress. **Purpose:** This study examined associations between PA, stress, and stress management strategies during SIP. **Methods:** Participants were recruited from the Stanford WELL for Life initiative U.S. component, a cohort of adults predominantly residing in Northern California. The majority of participants in the analytic sample (81.4%) resided in the San Francisco Bay Area, where a regional SIP order on March 17, 2020 affecting 6 Bay Area counties and the city of Berkeley mandated closure of indoor and outdoor recreation venues such as gyms, climbing walls, playgrounds, golf courses, basketball and tennis courts, and pools. Approximately 5-8 weeks later (4/24/20-5/8/20), participants in the analytic sample self-reported past-month PA (meeting vs. not meeting guidelines of 30+ minutes moderate PA 5 days/week or 20+ minutes vigorous PA 3 days/week), changes in stress during SIP (decreased/unchanged vs. increased stress) and use (yes/no) of ten stress management strategies. We tested differences in stress and stress management strategies by PA, and differences in stress by stress management strategies. **Results:** The analytic sample (N=990) was predominantly female (79.6%), White (69.4%), middle-aged ( $M=50.5$ ,  $SD=16.7$ ), and high-income (43.7% reporting \$150,000+ annually). Most (58.9%) participants met PA guidelines; 32.0% reported increased stress. Compared to inactive participants, active participants reported less stress ( $p=.001$ ). Active participants were more likely to manage stress using outdoor PA, indoor PA, yoga/meditation/prayer, gardening, and reading ( $ps < .05$ ), and less likely to sleep or eat more ( $ps < .01$ ). Managing stress using outdoor PA, indoor PA, or reading was associated with lower stress; managing stress using TV/movies, sleeping, or eating was associated with increased stress ( $ps < .05$ ). **Conclusions:** Participants meeting PA guidelines during SIP reported less stress and engaged in more active stress management. Inactive participants reported greater sleeping and eating to cope. Engagement in physically active stress management was associated with lower stress.

## Classification

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### Instructional Level

Beginner/Intermediate

### Special Interest Group

Physical Activity

Select two keywords from the drop-down lists that best capture your abstract.

### Keyword 1

Physical activity

### Keyword 2

Stress



## Additional Information

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**Funding Partners:** Did you receive funding outside of your institution for your research? If so, please indicate your sources of funding. If none, please state N/A.

**National Institutes of Health.**

N/A

**Foundation/Non Profit Grant.**

Initial foundational funding for the Stanford Wellness Living laboratory (WELL) was provided by Amway via an unrestricted gift through the Nutrilite Health Institute Wellness Fund to Stanford University.

**Other Sources of Funding.**

Dr. Vogel's time was supported in part by the Tobacco-Related Disease Research Program (28FT-0015).

**Did you plan this presentation in partnership with a professional organization other than SBM?**

**Please list the professional organizations as they should appear in the SBM Program. If none, please state N/A.**

N/A

**Did you plan this presentation in partnership with an SBM Special Interest Group, Council or**

**Committee? Please list the SIG/Council/Committee(s) as they should appear in the SBM Program. If none, please state N/A.**

N/A

**Open Science**