



# Changes in Health Behaviors and Risk Factors in Military Families During the Covid-19 Pandemic

Ashlesha Datar

Center for Economic and Social Research

University of Southern California

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Joint work with: Nancy Nicosia (RAND), Leah McConnell (USC)

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# Military Teenagers Environments, Exercise, and Nutrition Study



- Longitudinal study examining the effect of neighborhood environments on obesogenic behaviors and BMI/obesity in adolescents
- Leverages the natural experiment generated by periodic relocation of military families to new environments
- Army enlisted families with a child ages 12-13y in 2013-2014, with followup in 2015, 2017-2018, and 2019-2020
- Adolescent and parent surveyed online about health behaviors and risk factors and self-reported height and weight
- BMI measurements for subsample of adolescents



## Analysis Plan

- Wave 5: Dec 2019 – August 2020;
  - N=418 Young adults (YA) ages 18-21y (mean age=19y)
  - Spread across 36 states in all census regions
- Covid-19 shutdowns started midway through Wave 5 data collection
- Use California's 3/19/2020 shutdown as the divider for pre-Covid-19 versus Covid-19 period
  - Pre 3/19/20 → N=199 (48%)
  - Post 3/19/20 → N=219 (52%)
- Check for balance between the pre- vs post-shutdown sample
  - Socio-demographic characteristics of YAs
  - Health behaviors and risk factors in prior wave (2017-2018)
- Compare health behaviors and risk factors in Wave 5 of YAs who responded in the pre- versus the post-shutdown period



## Balance Table I – Sociodemographics of YAs that participated before versus after shutdown are very similar

Variable	Wave	Pre 3/19/20	Post 3/19/20	P-value
Female (%)	5	48.2	48.9	0.900
White (%)	5	38.7	39.7	0.623
Parent married (%)	4	88.9	87.6	0.658
Highest parent education $\geq$ 2 years of college (%)	5	60.1	65.3	0.217
Household income $>$ \$85k (%)	5	35.8	38.6	0.531
Grade/Job Status	5			
College/Associates degree		56.1	56.6	0.994
Working at a job		20.6	19.8	
In armed forces		11.6	12.3	
Nothing or other		11.6	11.3	



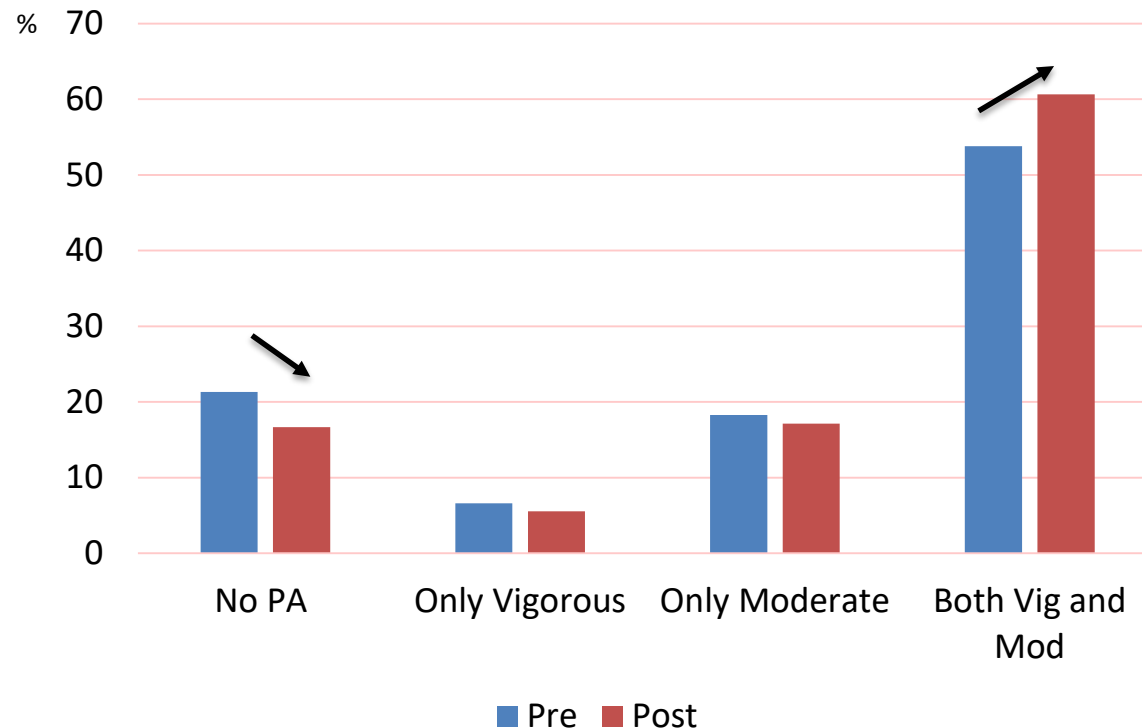
## Balance Table II – No differences in health behaviors and risk factors in Wave 4 of YAs that participated before versus after shutdown

Variable	Wave	Mean (SD)	Pre 3/19/20	Post 3/19/20	P-value
Moderate-to-Vigorous Physical Activity (MVPA) (mins/week)	4	270 (260)	284.98	254.47	0.298
TV/video time (Hours/week)	4	16.7 (10)	16.2	17.3	0.298
Ate sweets (Times/week)	4	9 (9)	8.4	9.7	0.187
Ate salty snacks (Times/week)	4	6.6 (8.1)	6.4	6.6	0.836
Drank Soda (Times/week)	4	4.1 (6.4)	4.0	4.3	0.662
Socio-emotional wellbeing scores	4	10 (6.2)	10.2	9.7	0.466
Time preferences	4	3.3 (0.7)	3.3	3.2	0.120
Risk preferences	4	6 (2.3)	6.1	5.7	0.109
Overweight or obese (%)	4	28	28.5	27.7	0.876



## Comparing Physical Activity in Wave 5 Across Pre 3/19/20 versus Post 3/19/20 Participants

*In a typical week, do you do any **vigorous [moderate]** physical activities that cause ....., for **at least 10 minutes continuously**?*



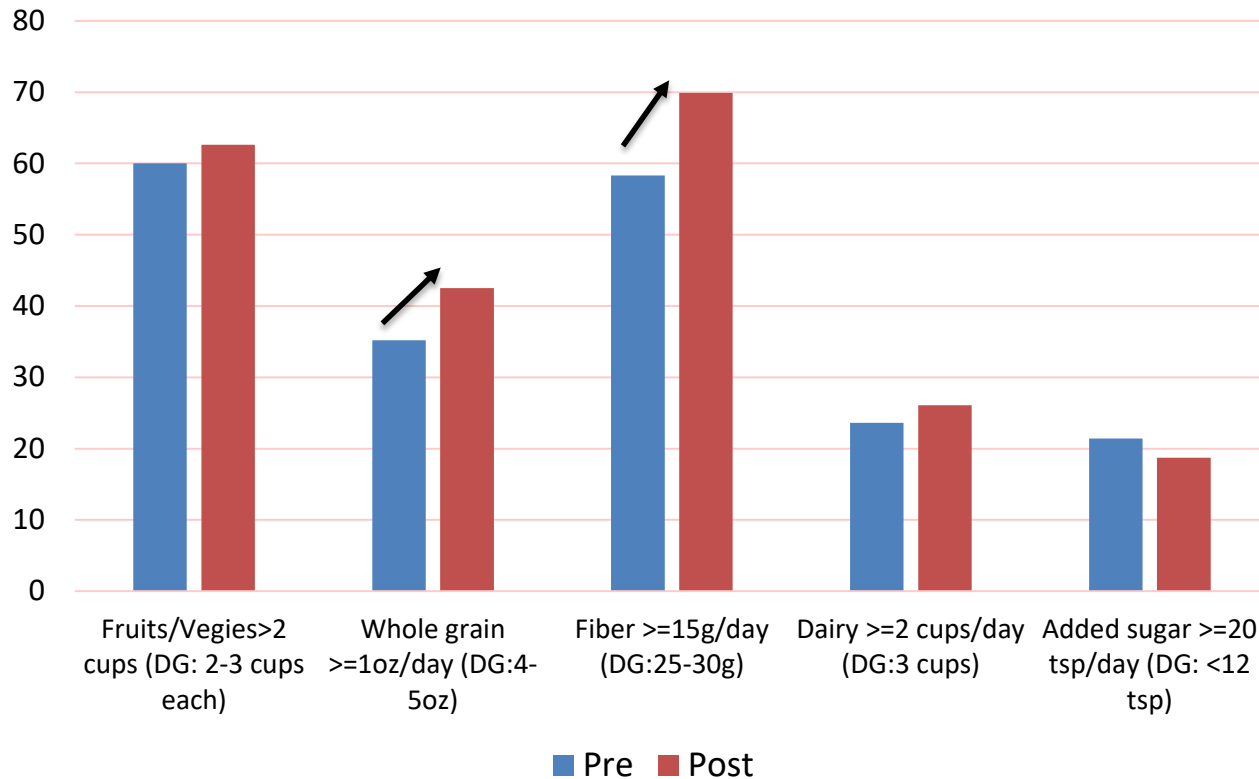
Decline in share of YAs doing no PA

Increase in % engaging in both moderate and vigorous PA



## Dietary Intake

NCI's Dietary Screener Questionnaire (20 items) – nutrient scores generated using NCI algorithm



Increase in whole grain and fiber

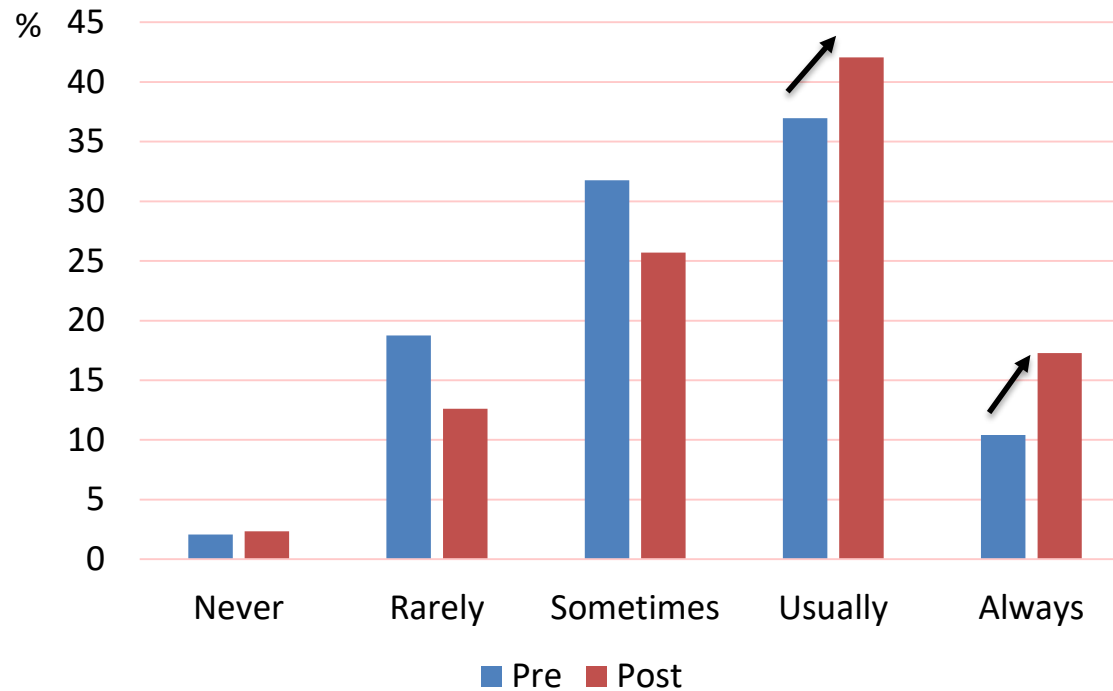
Slight increase in F/V and dairy intake

Slight decline in added sugar intake



## Sleep Quality

*During the past week, how often did you feel that you got enough sleep?*



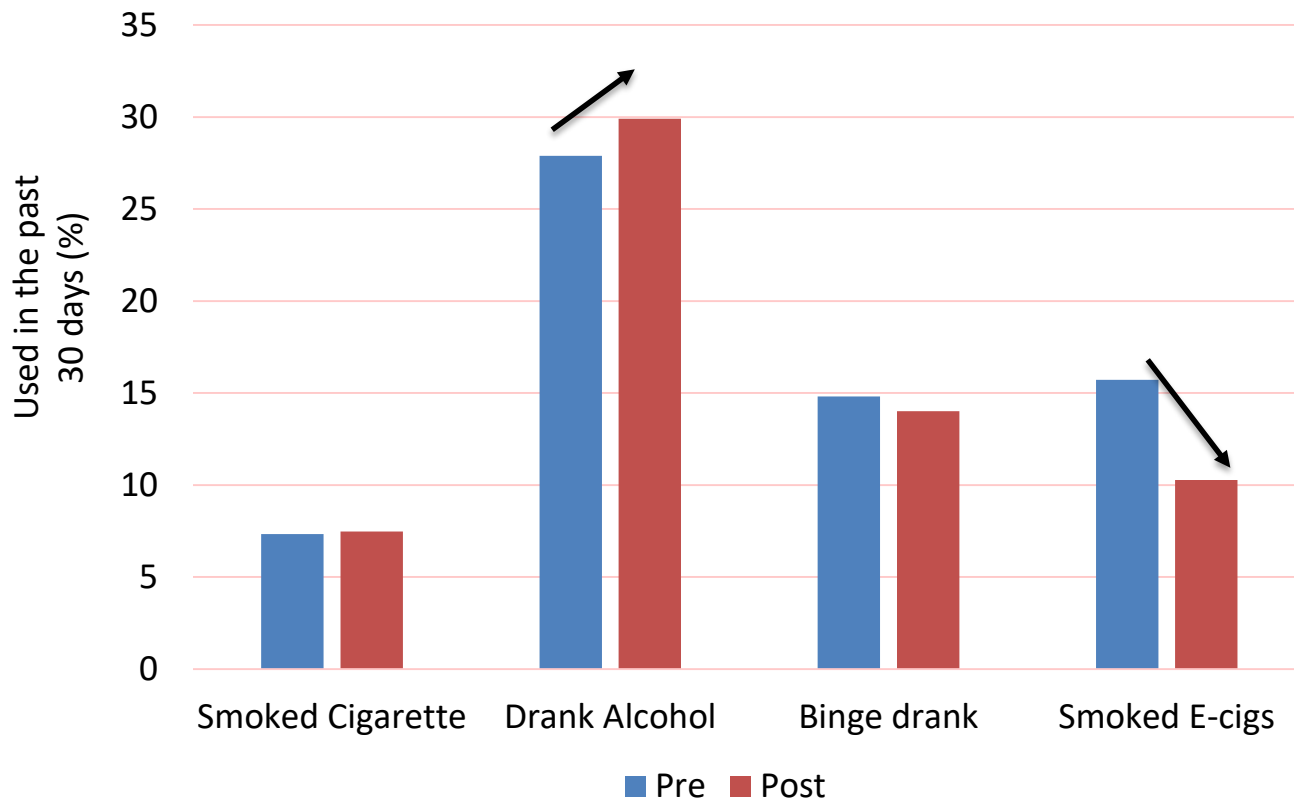
Greater share reporting enough sleep usually or always





## Substance Use

What is your best estimate of the number of days you [used/drunk] [cig/alcohol/e-cig] during the **past 30 days**?



Slight increase  
in share  
drinking alcohol

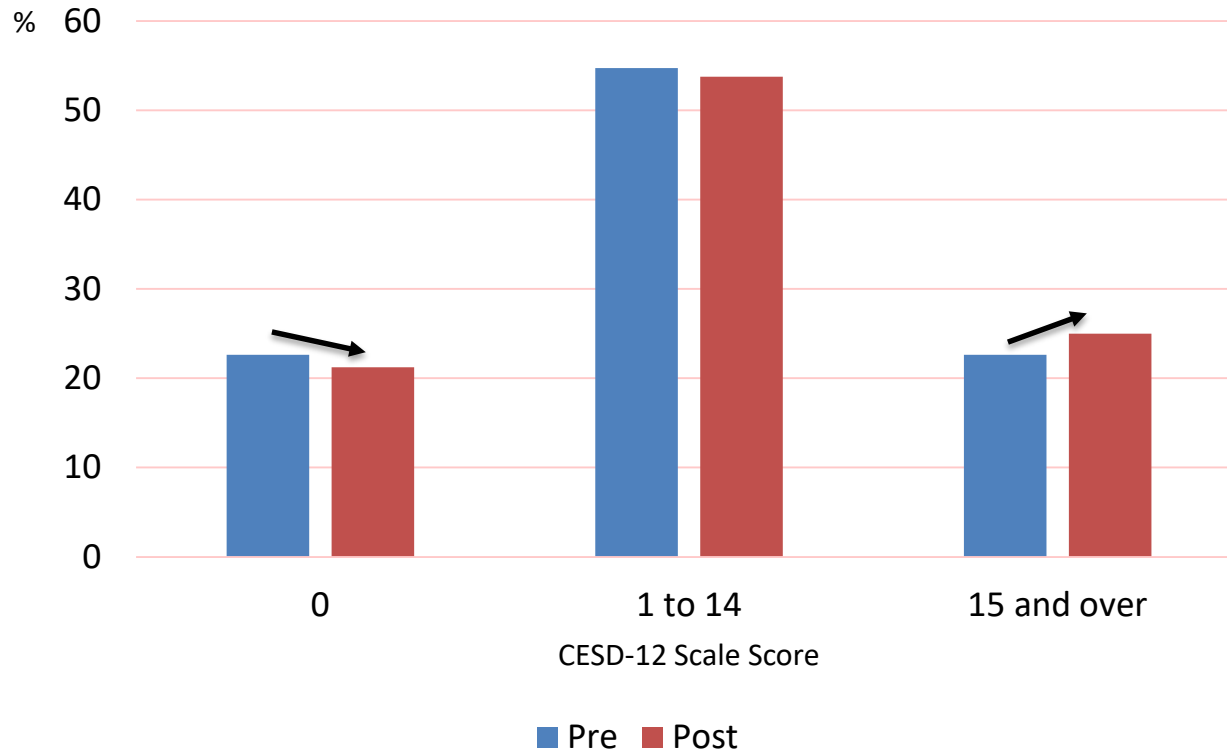
Slight decrease  
in share binge  
drinking

Larger decline in  
share smoking  
e-cigs



## Mental Health (CESD-12 Scale)

Please tell us about how you have felt about yourself and your life during the **past week...**

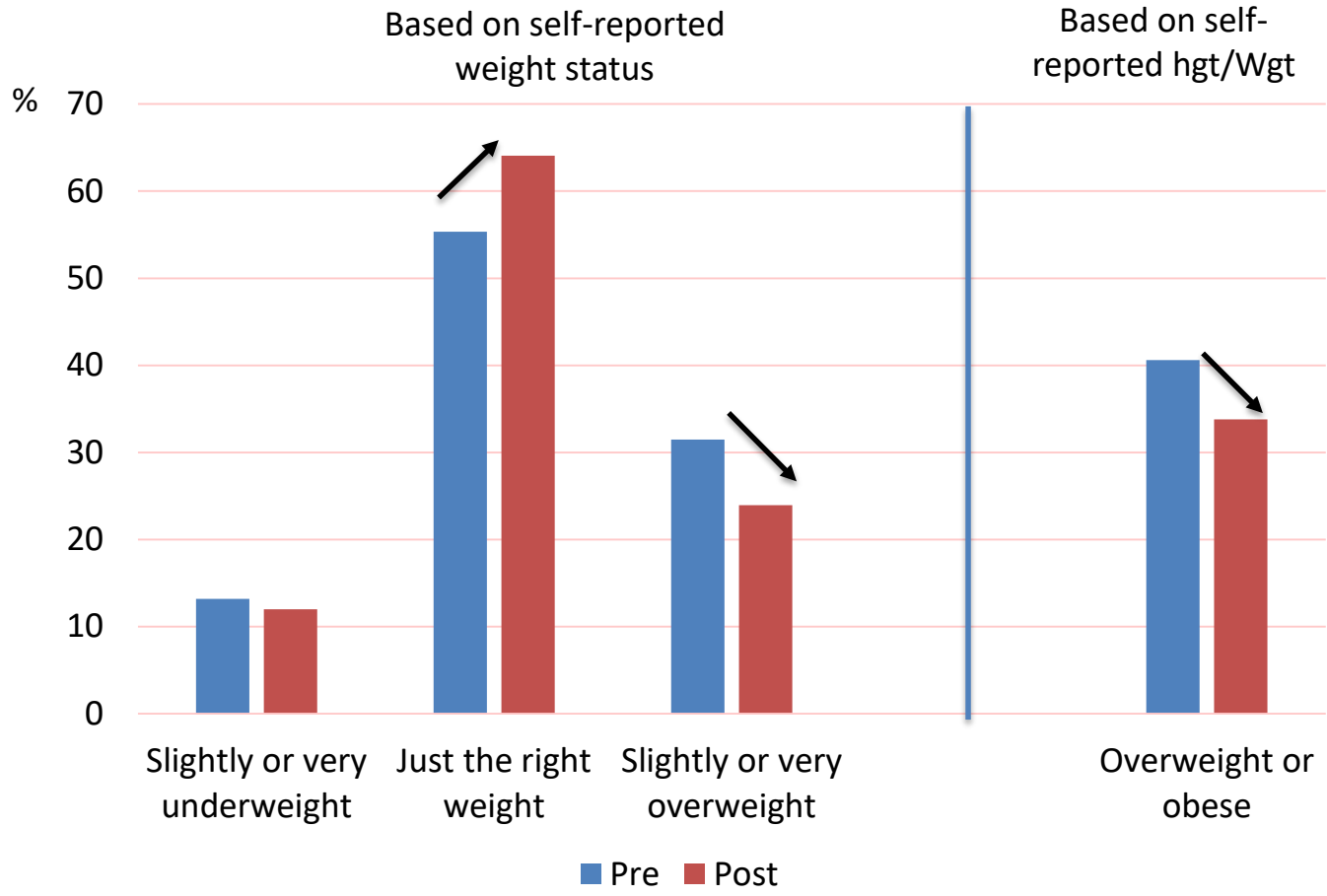


Higher scores indicate more depressive symptoms

Slight increase is share with a score of 15 or over (threshold for severe depression)



# Overweight and Obesity



Decline in share that are overweight or obese



## Preliminary Conclusions and Next Steps

- Some health behaviors and outcomes for YAs were better during the pandemic shutdown but others were slightly worse.
  - Physical activity, diet, sleep, and (perceived) weight status were better during the shutdown than before
  - Mental health slightly worse
  - Substance use - mixed
- Next steps:
  - Use state-specific shutdown dates to construct pre/post periods
  - Difference-in-difference regressions with covariates
  - Examine additional outcomes
    - Time & risk preferences, educational expectations, social networks
  - Analyze parent data



**Thank you!**

Comments most welcome

[adatar@usc.edu](mailto:adatar@usc.edu)