

Characteristics of Active-Duty Service Members and Associations with Body Composition in a Pragmatic Randomized Controlled Trial of Weight Management

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Overview

- ACT in context of active-duty military personnel and obesity
- ACT-enhanced ShipShape RCT at Naval Medical Center
- Baseline characteristics of participants
- Associations between baseline characteristics and body composition
- Summary and conclusion



ACT in a Nutshell

- What's important to you? (values)
- What's getting in the way of moving toward what's important to you? (fusion and self-stigma)
- What have you been doing (behaviors) so far to deal with what's getting in the way (eat, isolate, distract, etc.)?
- What could you do (committed action) toward what's important to you while having (willingness) to tolerate the unwanted emotional stuff?

Why is ACT relevant to active duty?

Military core values such as honor, courage, loyalty, integrity, and commitment



ACT focuses on facing challenging situations in accordance with one's values, which is consistent with the military's culture and core principles that help service members remain resilient even when confronted with the challenges associated with combat, operations, and training.

Why Obesity?

- **An epidemic in the U.S.**
 - » 66% of all adults overweight or obese
 - » 77% of veterans overweight or obese
 - » ~60% of active duty overweight & 12% obese
- **Impact on mission readiness and costs**
- **Enormous health care costs**
- **Debilitating effects on physical and psychological functioning and quality of life**
 - » Diabetes, cardiovascular disease, osteoarthritis, endocrine/metabolic disorders, respiratory symptoms, depression, and anxiety

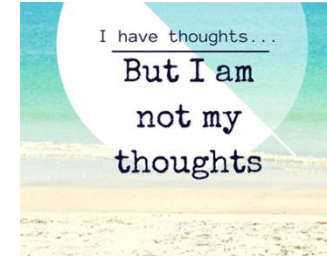


ACT Conceptualization of Obesity

- **What is the problem?**
 - » Can't lose weight → problems persisting in values-based action
- **What private experiences is the client attempting to avoid?**
 - » Self-stigma (negative beliefs about oneself)
 - » Emotional distress
 - » Cravings
- **What avoidance behaviors are being used and how pervasive are they?**
 - » Isolation
 - » Restriction and distraction
 - » Binge eating in response to stress or negative emotions

ACT as Adjunct Treatment

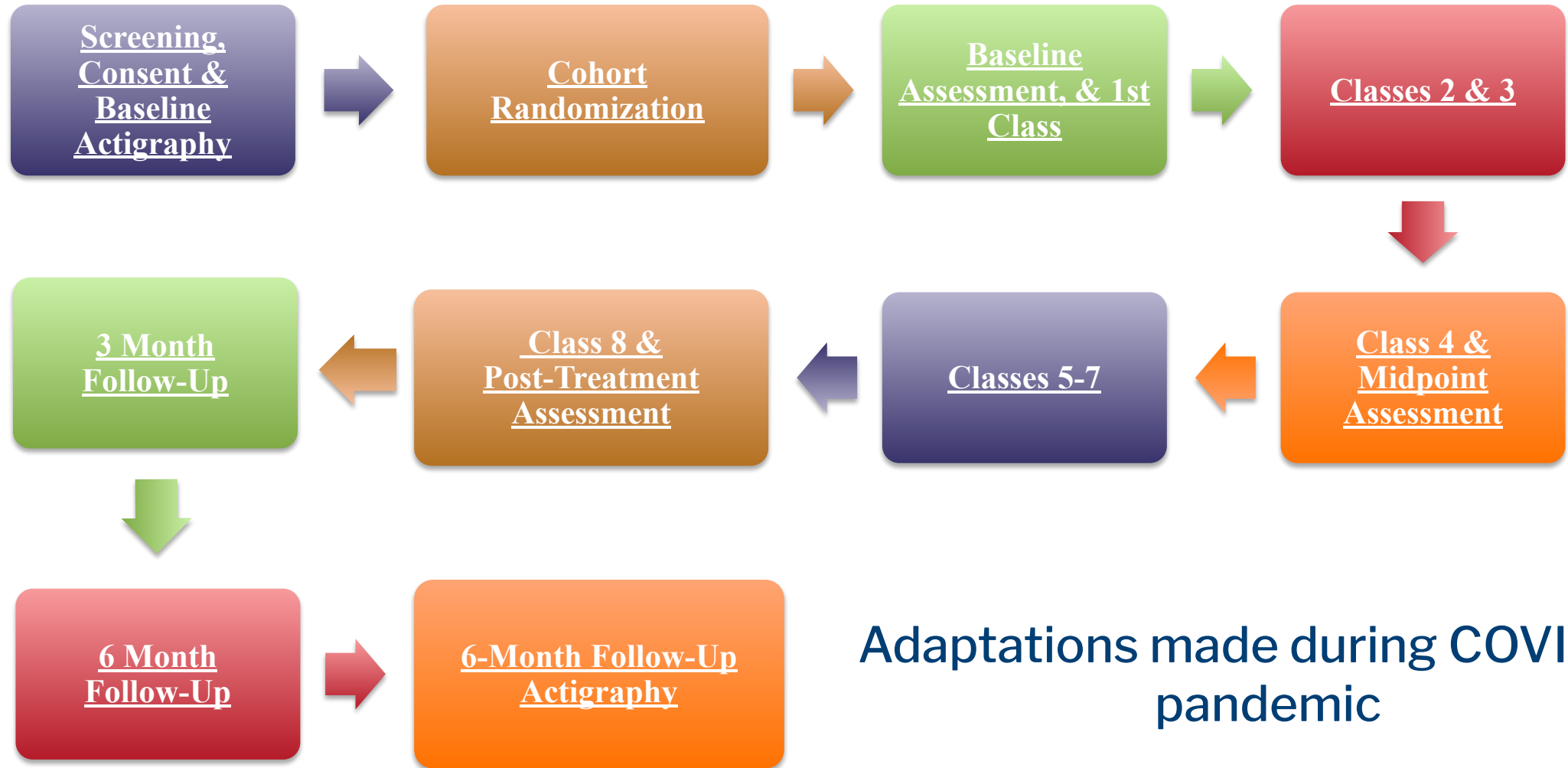
- Not weight control
 - » The bottom line is that one has to eat less and exercise more to lose weight and keep it off
- Improve quality of life
- Build psychological and behavioral flexibility
 - » Willingness to tolerate the psychological struggles and environmental triggers
 - » Clarifying values
 - » Noticing thoughts and feelings mindfully and from a distance in the service of adaptive behavior
 - » Continuous awareness



ShipShape RCT

- Cohort-randomized pragmatic controlled trial funded by NIH
- Comparison to Navy's weight management program, ShipShape
- Active-duty participants
 - >> Inclusion criteria: overweight/obese or failed/at risk of failing body composition test
 - >> Exclusion criteria: Pregnancy or planning to become pregnant
- Study aims:
 - >> Examine the effectiveness of ACT+SS compared to standard SS-only in active-duty Navy personnel
 - >> Examine psychological flexibility as a mechanism underlying intervention response
 - >> Explore potential moderators of intervention response
- Weight loss as primary outcome
- Both treatments comprised of 8-weekly, 2-hour groups

Study Design



Adaptations made during COVID-19 pandemic

Key Self-Report Measures

<u>Weight-related & Physical Activity</u>	<u>Emotional/Psychological</u>
Weight Loss Readiness Test-II	Cohen Perceived Stress Scale-4
Weight Loss Motivation/Confidence	PHQ-4 (depression and anxiety)
International Physical Activity Q	Primary Care-PTSD Screen
<u>Functioning/Quality of Life</u>	<u>ACT-Specific Measures</u>
Satisfaction with Life Q	AAQ-Weight Revised
SF-12 (first question)	Comp-ACT
<u>Problem Eating</u>	
Three Factor Eating Questionnaire	

	ShipShape Content	ACT Enhancements
All Classes	<ul style="list-style-type: none"> - Weekly Action Plan - Action Plan check-in 	<ul style="list-style-type: none"> - Mindfulness exercise - Orientation to the ACT matrix
Class 1	<ul style="list-style-type: none"> - Motivation - Weight management tacking methods - Hunger and satiety signals - Introduction to Navy fitness 	<ul style="list-style-type: none"> - Introduction to ACT matrix - Introduction to mindfulness - Values and values-congruent (“toward”) and values-incongruent (“away”) action
Class 2	<ul style="list-style-type: none"> - Nutrition education - Portion control - Building healthy habits 	<ul style="list-style-type: none"> - Values clarification - Cost-benefit analysis of “away” moves - Determining “toward” moves (workability)
Class 3	<ul style="list-style-type: none"> - Meal preparation - Kitchen essentials - Food log 	<ul style="list-style-type: none"> - The limitations of control - Acceptance as an alternative to control
Class 4	<ul style="list-style-type: none"> - Stress management - Relaxation - Sleep education 	<ul style="list-style-type: none"> - Buying into vs observing thoughts - Identifying with a transcendent self

ShipShape Content

ACT Enhancements

Class 5

- Time management
- Weight loss management and progress check
- Navy fitness review

- Willingness to be with food urges and cravings
- Noticing and distancing from thoughts during weight loss progress check

Class 6

- Cognitive distortions and restructuring*
- Mindful eating
- Social support

- Acceptance, distancing from thoughts, and values
- Workability and emotional eating
- Committing to values-congruent action

Class 7

- Educational video on obesity (“The Skinny on Obesity”)

- Noticing and distancing from ongoing thoughts
- Committing to values-congruent action

Class 8

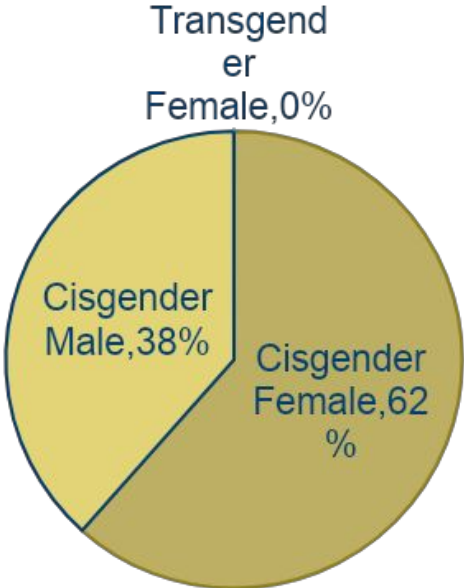
- Maintaining motivation
- Weight loss progress and results
- Intuitive eating
- Long-term maintenance

- Acceptance, distancing from thoughts, and values
- Workability and long-term commitment to health

* Not covered in ACT + SS protocol

Sociodemographic Characteristics

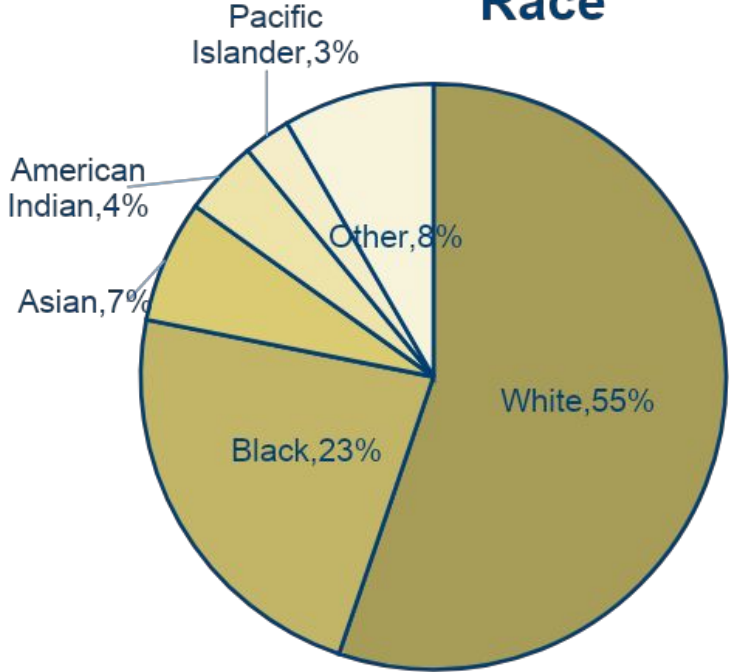
Gender



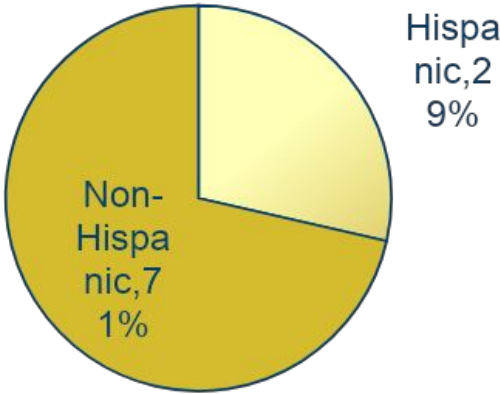
N = 178

Mean age = 29.7 (6.9) years

Race



Ethnicity



Body Composition

Measures	Total (N = 178)	Male (n = 68)	Female (n = 110)
Weight (lbs), M (SD)	209.12 (37.07)*	231.65 (35.03)	195.07 (30.87)
BMI (kg/m ²), M (SD)	33.13 (3.89)	33.49 (4.02)	32.90 (3.81)
Body fat (%), M (SD)	35.62 (8.90)*	27.11 (5.53)	40.92 (6.01)
Waist circumference (inches), M (SD)	37.30 (4.85)*	40.92 (4.36)	35.03 (3.62)

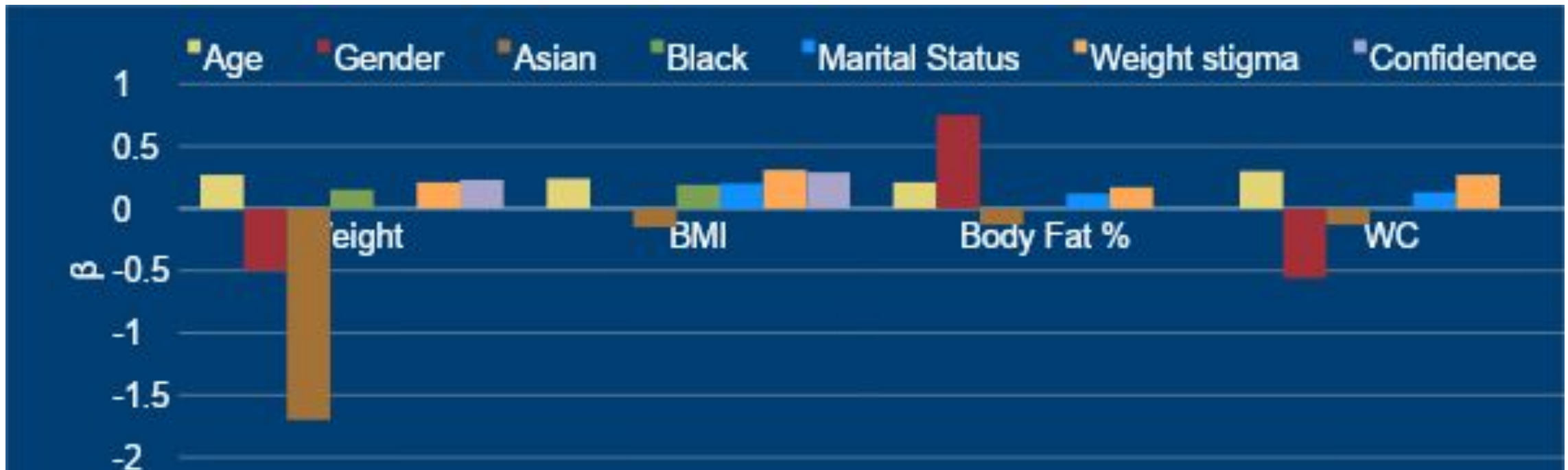
M = mean; SD = standard deviation; BMI = body mass index

*Indicates significant differences by gender ($p < .05$)

Models Predicting Body Composition

R^2

	Controlled	Uncontrolled
Weight	.43	.07
Body Mass Index (BMI)	.26	.10
Body Fat Percentage (BF%)	.71	.17
Waist Circumference (WC)	.55	.06



Summary



- Pragmatic trial of brief ACT + weight management in a population where ACT principles might fit the culture
- Successful recruitment despite COVID-19 pandemic challenges
- Large proportion of female participants can inform care of women active-duty personnel
- Key strength of multiple body composition metrics and many psychosocial factors assessed
- Key finding at baseline:
 - » Body composition metrics MATTER!
 - » Higher weight stigma associated with larger body composition
 - » Stress, psychiatric symptoms, eating behaviors, and other psychological factors were not significantly associated with body composition

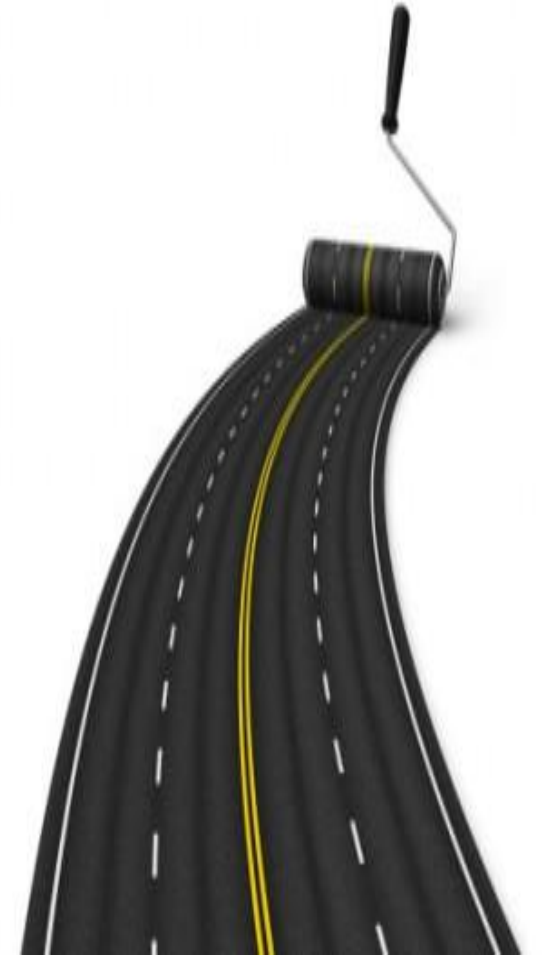
Future Directions

- **Considerations**

- » Weight management interventions sensitive to not increase weight stigma
- » Careful consideration of body composition metric selection in future studies

- **Analyses to address main study aims**

- » Explore gender as a moderator
- » Explore weight stigma as a predictor of treatment outcome



VA San Diego Healthcare System

UC San Diego

- Matthew Herbert
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- Job Godino (Actigraphy)
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- Karla Materna
- Brian Blanco
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- Michael Lee
- Angela Camodeca
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Naval Medical Center San Diego

Naval Center for Combat
Operational Stress Control

- CAPT Gordon Wisbach, NMCSO
- Eileen Delaney, NCCOSC
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- Josh Peters, NMCSO
- Lisa Hess, NMCSO
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