
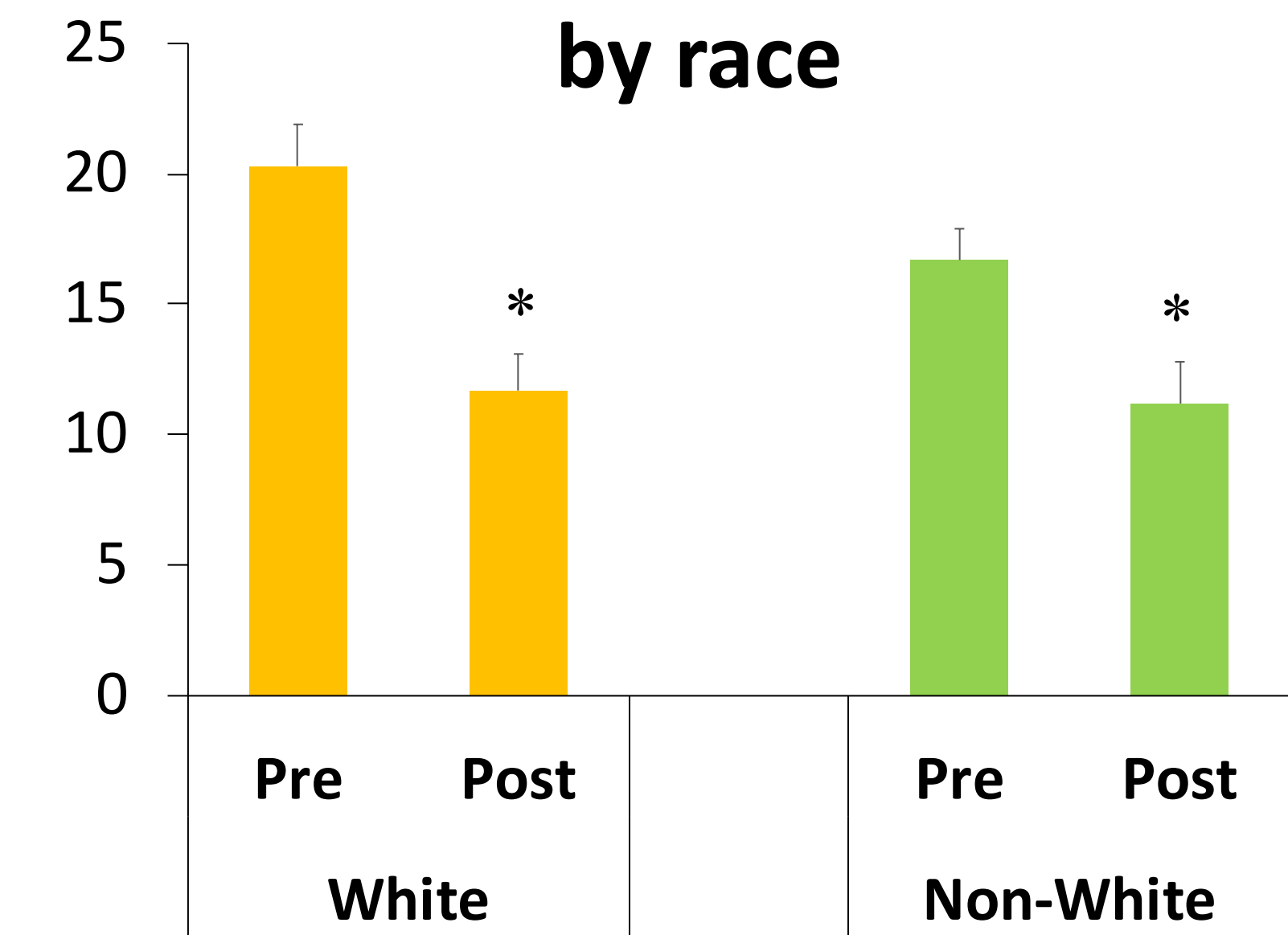
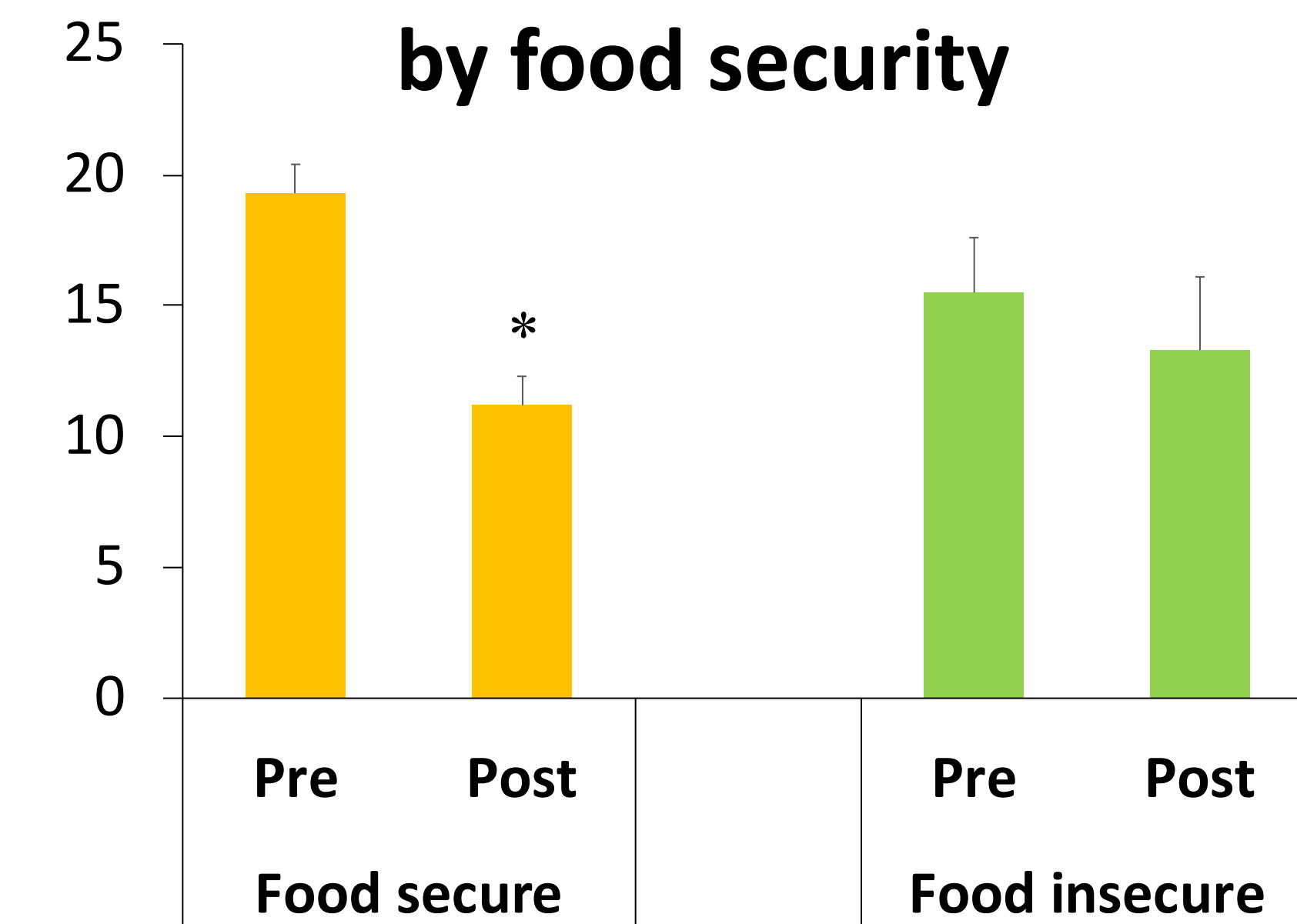
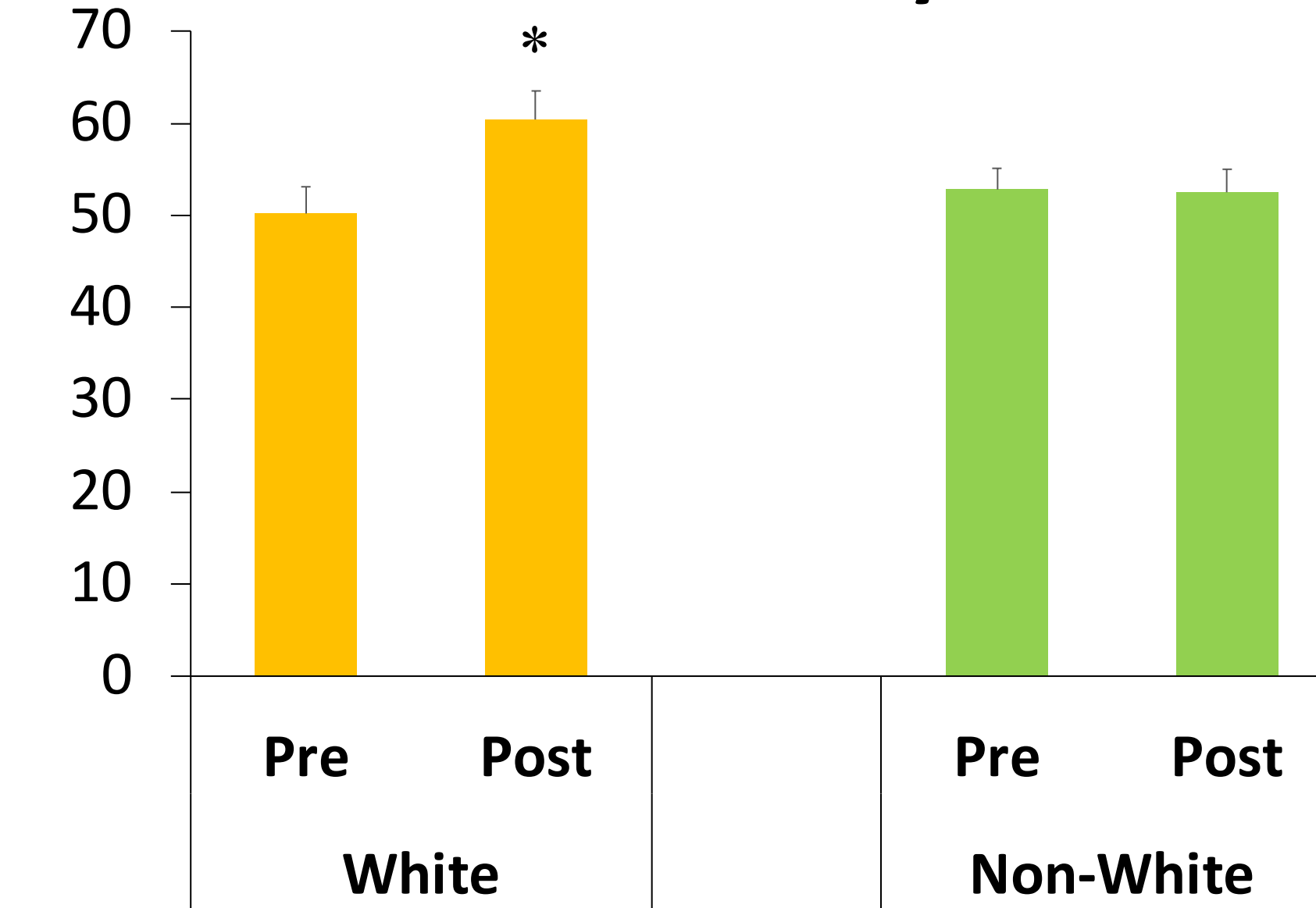
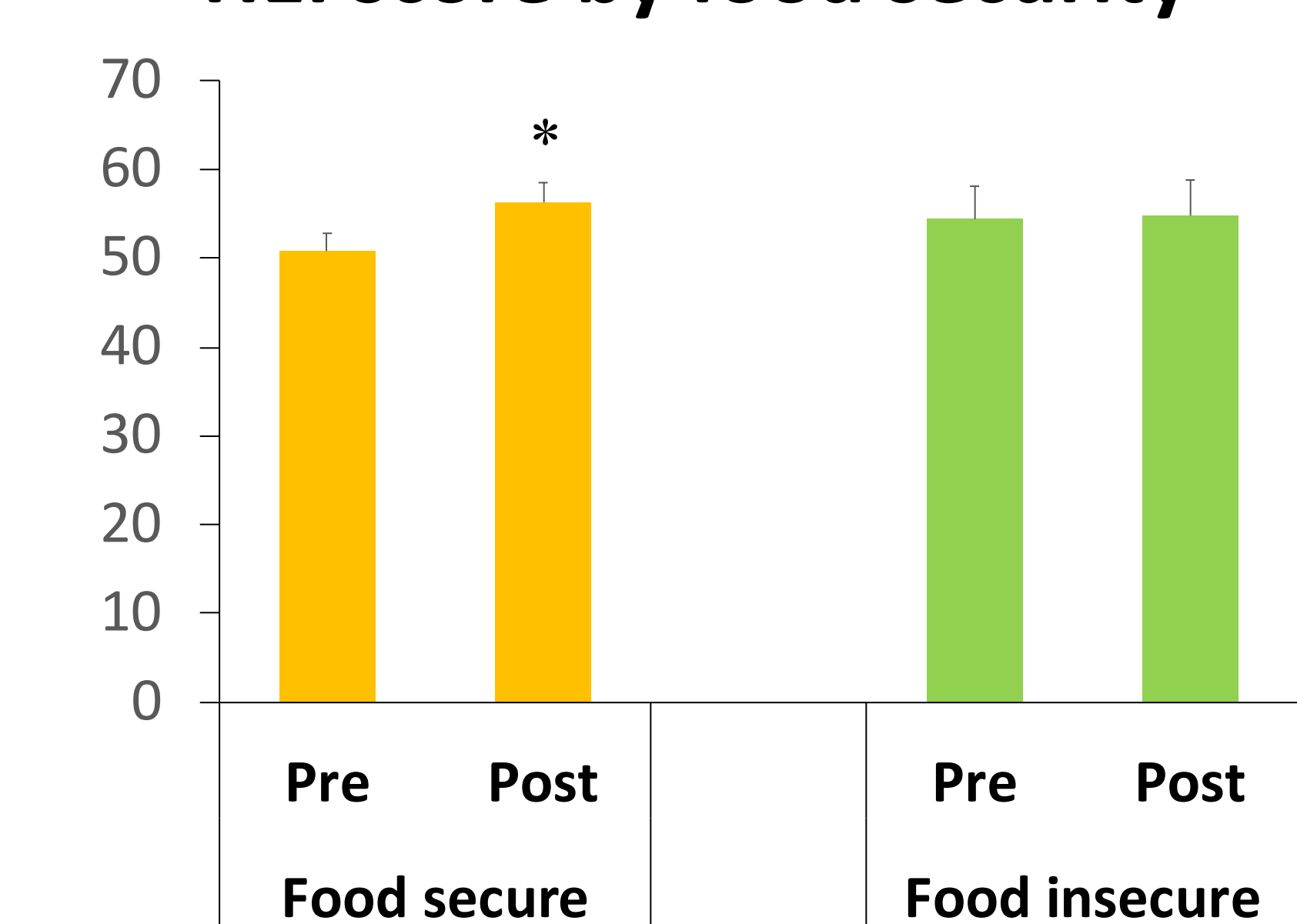


Changes in diet quality, energy intake, and the home food environment during an adolescent behavioral weight loss intervention differ by race and food security status



Elizabeth L. Adams¹, Laura J. Caccavale¹, Hollie A. Raynor², Melanie K. Bean¹

¹Pediatrics, Children's Hospital of Richmond at Virginia Commonwealth University, Richmond, VA; ²Nutrition, University of Tennessee, Knoxville, TN

Background	Intervention Description	Measures																																					
<ul style="list-style-type: none">Successful obesity treatment programs are needed to reduce obesity and cancerIncreasing healthy foods and decreasing unhealthy foods in the home can aid in reduced energy intake and improved diet quality that is needed for weight loss successHealthy changes to the home food environment may be more challenging for adolescents with food insecurity and/or racial minority statusResearch is needed to explore how food insecurity and race are related to the home food environment and diet changes during obesity treatment	<ul style="list-style-type: none">4-month group-based, behavioral weight loss treatment for adolescents that involved a parentUsed empirically supported behavior therapy approaches (e.g., goal setting, self-monitoring, stimulus control, contingency management)Set personalized goals for energy intake and diet quality (i.e., GO foods)Encouraged changing the home food environment to reach dietary goalsExercise progression >1 day/week at gym4 motivational-interviewing based individual sessions during treatment <div></div>	<p>Demographics reported pre-intervention:</p> <ul style="list-style-type: none">Race: White vs. Non-WhiteFood security: USDA 6-item Food Security Module (food secure vs. insecure) <p>Diet measures reported pre- and post-intervention:</p> <ul style="list-style-type: none">Home food environment: Home Food Inventory (HFI) obesogenic score (range 0-71; lower score = healthier)Energy intake: 3-day food recallDiet quality: Healthy Eating Index (HEI) (range 0-100; higher score = better quality)																																					
Results																																							
Aim <p>Within an adolescent obesity treatment program</p> <ol style="list-style-type: none">To examine if changes in the home food environment, diet quality, and energy intake, differed by race and food security statusTo examine if changes in the home food environment were associated with changes in diet quality and energy intake	<div>Home Food Environment</div> <div>A Obesogenic score by race</div>  <table border="1"><caption>Data for Figure 1A: Obesogenic score by race</caption><thead><tr><th>Race</th><th>Pre</th><th>Post</th></tr></thead><tbody><tr><td>White</td><td>20</td><td>12*</td></tr><tr><td>Non-White</td><td>17</td><td>11*</td></tr></tbody></table> <div>B Obesogenic score by food security</div>  <table border="1"><caption>Data for Figure 1B: Obesogenic score by food security</caption><thead><tr><th>Food Security</th><th>Pre</th><th>Post</th></tr></thead><tbody><tr><td>Food secure</td><td>19</td><td>11*</td></tr><tr><td>Food insecure</td><td>16</td><td>13</td></tr></tbody></table> <p>Figure 1. HFI obesogenic score at pre- and post-intervention by A) adolescent race and B) family food security status. Lower values indicate a healthier home food environment. *mean difference from pre to post-intervention was p<0.05.</p>	Race	Pre	Post	White	20	12*	Non-White	17	11*	Food Security	Pre	Post	Food secure	19	11*	Food insecure	16	13	<div>Diet Quality</div> <div>A HEI score by race</div>  <table border="1"><caption>Data for Figure 2A: HEI score by race</caption><thead><tr><th>Race</th><th>Pre</th><th>Post</th></tr></thead><tbody><tr><td>White</td><td>50</td><td>60*</td></tr><tr><td>Non-White</td><td>53</td><td>53</td></tr></tbody></table> <div>B HEI score by food security</div>  <table border="1"><caption>Data for Figure 2B: HEI score by food security</caption><thead><tr><th>Food Security</th><th>Pre</th><th>Post</th></tr></thead><tbody><tr><td>Food secure</td><td>50</td><td>56*</td></tr><tr><td>Food insecure</td><td>54</td><td>54</td></tr></tbody></table> <p>Figure 2. HEI score at pre- and post-intervention by A) adolescent race and B) family food security status. Higher values indicate a better diet quality. *mean difference from pre to post-intervention was p<0.05.</p>	Race	Pre	Post	White	50	60*	Non-White	53	53	Food Security	Pre	Post	Food secure	50	56*	Food insecure	54	54	<div>Energy Intake</div> <ul style="list-style-type: none">All adolescents decreased energy intake from pre- to post-intervention by ~300-400 kcal/day <div>Relationships between home food environment, diet quality, and energy intake</div> <div>Race</div> <ul style="list-style-type: none">White adolescents: Improvements in the home food environment were associated with improved diet quality and reduced energy intake, from pre- to post-intervention (p's <0.05)Non-White adolescents: These associations were not significant (p's>0.05) <div>Food security</div> <ul style="list-style-type: none">Food secure families: Improvements in the home food environment were associated with improved diet quality (p=0.02) and a trend for decreased energy intake (p=0.08), from pre- to post-interventionFood insecure families: These associations were not significant (p's>0.05)
Race	Pre	Post																																					
White	20	12*																																					
Non-White	17	11*																																					
Food Security	Pre	Post																																					
Food secure	19	11*																																					
Food insecure	16	13																																					
Race	Pre	Post																																					
White	50	60*																																					
Non-White	53	53																																					
Food Security	Pre	Post																																					
Food secure	50	56*																																					
Food insecure	54	54																																					
Conclusion																																							
Participants <ul style="list-style-type: none">Adolescent/parent dyads (N=82) in an obesity treatment program63% adolescents were female66% adolescents were non-White24% families were food insecure	<ul style="list-style-type: none">Changes to the home food environment for White adolescents and food secure families was associated with positive dietary outcomesNon-White adolescents made changes to the home food environment, which were not associated with dietary outcomes. Future research should explore reasons for these racial disparitiesFamilies with food insecurity did not make changes to the home food environment or diet quality. Interventions should aim to overcome challenges of food insecurity on changing the home food environment																																						

unding: NIH grants R21HD084930 and T32CA093423