Relationship Between Eating, Exercise and Academic Performance During Adolescence

by

Kaylee Chittenden

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Thesis Committee:

Dr. Kimberly J. Ujcich Ward, Chair

Dr. Seth Marshall

Dr. Aimee Holt

ABSTRACT

Recent studies indicate the prominence of adverse eating behaviors in adolescence and their potential relationship to social and academic experiences. There is a lack of research assessing the longer term potential impact of adverse eating and exercise behaviors on future academic performance. In this study, 117 undergraduate students completed an online self-reported survey assessing academic performance, motivation, academic interference, eating habits, and exercise habits from middle and high school and from college. Hierarchical logistic regressions indicated that middle school and high school grades could not be predicted based on same age eating habits, exercise habits, academic interference, and academic motivation. College grades were predicted based on current eating habits and exercise habits. More specifically, the more problematic a college student's eating and exercise habits are, the lower their grades. Implications and future directions are discussed.

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CHAPTER I

LITERATURE REVIEW

Eating behaviors and patterns shape many aspects of adolescents' lives. These choices can have effects on academic performance, social acceptance, and individual body perceptions. Adolescents as early as 11 years old begin irregular eating patterns by not consuming meals regularly, whether that be eating more meals than needed or skipping meals. Students aged 11 and 12 receive most of their health knowledge through family and school support (Abratowska, Zalewska, Maciorkowska, Gladka, & Maciorkowska, 2016). As development progresses, students in middle and high school seek information on healthy behaviors from media sources such as TV, radio, magazines, and the internet, despite school attempt (Abratowska et al., 2016). Learning from media sources rather than empirically based evidence can change the way one views eating behavior, dieting, and self-perception (Abratowska et al., 2016).

Cognitive thoughts on appearance are intertwined with dieting (Nierengarten, 2017).When an individual focuses too highly on dieting, it is possible to lose control. Nierengarten found that an eating disorder usually begins when an adolescent begins a diet to lose weight or become healthier. More than half of teenage girls are or think they should be on a diet; 3% of those teens go too far and develop an eating disorder, specifically Anorexia Nervosa or Bulimia (Nierengarten, 2017). Eating disorders are highest among adolescent girls but growing in the male and minority populations (Nierengarten, 2017).

Eating Disorders of any kind have significant effects on the body and mind. Individuals with eating disorders may struggle in school because of perfectionistic traits and the pressure

they feel to perform highly, which for many students can take the fun out of learning (Marx, Zucker, & Story, 2006). Not knowing one's limits, setting unrealistic goals, or obsessing over common academic or social mistakes may be indicators of perfectionistic traits. Individuals with eating disorders may also struggle with managing negative emotions, such as academic stress, which can make their schoolwork seem more challenging. They also tend to be highly influenced by those around them, usually others with eating disorders, which can make their disorder worse (Marx et al., 2006). Individuals with eating disorders usually do not want to eat more than those around them; therefore, if they surround themselves with other individuals with eating disorders they may choose to eat less than they planned. All of these factors make the school environment exceptionally challenging for this demographic (Marx et al., 2006).

Eating Behaviors and Dieting Patterns Associated With Body Image and Emotional Factors

Cognitions not only affect the way students perform in school but also affect the way individuals view themselves as well as the level to which they are cognizant about their own appearance. In the study, *A vicious cycle among cognitions and behaviors enhancing risk for eating disorders,* 1,260 adolescents participated in a study over the course of 13 months (Zarychta, Mullan, Kruk, & Luszczynska, 2017). Appearance orientation, appearance worries, dieting, and weight status were assessed. It was found that appearance orientation, appearance worries, and dieting are highly correlated with one another. Moreover, higher appearance orientation predicts higher appearance worries, which predicts dieting. Therefore, adolescents can enter a destructive dieting cycle by either of the three categories, appearance orientation,

appearance worries, and dieting, ultimately leading to higher levels of appearance oriented thinking, which can adversely affect an individual's diet (Zarychta et al., 2017).

Psychopathology has also been studied to analyze the comorbid traits with eating disorders (Noort, Pfeiffer, Ehrlich, Lehmkuhl, & Kappel, 2016). A study of 60, 9 to 19 year olds with Anorexia Nervosa were compared to 60 healthy age matched controls to view the difference in psychopathology between the two groups (Noort et al., 2016). The individuals with anorexia nervosa reported having significantly higher levels of depression and anxiety when compared to healthy peers. Individuals with an adolescent onset of Anorexia reported higher levels of depression and anxiety than individuals with an earlier onset; they also reported having a higher presence of Obsessive Compulsive Disorder symptoms compared to their same aged healthy peers (Noort et al., 2016). The increased risk of psychopathology in relation to eating disorders can be assumed across multiple settings. Therefore, we can assume that eating disorders could create a more difficult school experience regarding social engagements and academics.

Research has suggested that eating disorders can begin early in life. For example, Perez, Kroon Van Diest, Smith, and Sladek (2018) investigated cognitive risk factors related to eating disorders. Factors such as self-objectification, thin-ideal internalization, and body dissatisfaction can begin as young as 3 years of age (Perez et al., 2018). One hundred fifty one mother daughter combinations participated in a study to measure the affects a mother can have on her daughter's self perception (Perez et al., 2018). They were asked to complete an individual mirror exercise followed by a joint mirror exercise. The participants were asked to tell what they like and dislike about certain body parts: hair, face, arms, stomach, hips, buttocks, and legs. Following the same

instructions in the joint exercise, mothers were asked about their view of their bodies first, followed by their daughters. This exercise elicited body satisfaction/dissatisfaction. In addition to this exercise, the participants completed a measure of thin-ideal internalization and self-objectification. It was found that a mother's body dissatisfaction and self-objectification were significantly and positively correlated with their daughter's thin-ideal internalization. The daughter's self-objectification was significantly and negatively correlated with their own body satisfaction. Five year olds reported significantly less self-objectification than 6 and 7 year olds; the 5 year olds reported significantly more thin-ideal internalization than 7 year olds. When doing the mirror exercise, 56% of girls reported a body dissatisfaction and 53% reported seven to 24 dislikes about their bodies. The joint mirror exercise showed a significant and positive predictor of the daughters number of body dislikes. In addition, the mother's number of likes significantly and positively predicted the daughter's number of likes (Perez et al., 2018). In general, this study suggests that body image distortions can begin very young and that mothers have a large impact on their daughter's self-perception. It can be assumed through this study that children are taught to have positive or negative views of their body and health.

As these studies show, cognitions about body image have the power to lead to a variety of negative outcomes related to appearance orientation, appearance worry, and dieting are closely connected to each other (Zarychta, Mullan, Kruk, & Luszczynska, 2017). This close connection can result in dieting patterns leading to eating disorders, specifically Anorexia nervosa and Bulimia (Noort et al., 2016). Eating disorders can be comorbid with increased psychopathology including OCD symptoms, anxiety, and depression (Noort et al,. 2016).

Although these patterns are occurring in children and youth, it is important to note the impact mothers, in particular, can have on their daughter's self-satisfaction (Perez et al., 2018). The close positively correlated connection between the mother's and daughter's view of themselves explains the impact education can have as a preventative measure against eating disorders by first fighting body satisfaction (Perez et al,. 2018).

Eating Behaviors and Dieting Patterns Associated With Cognitive Factors

Research has begun to document how eating behaviors and dieting patterns are linked to cognitive factors. For example, Gajre, Fernandez, Balakrishna, and Vazier, 2008 conducted a study examining how eating habits play a large role in cognition and focus at school. The decision to eat breakfast affects one's ability level in concentration, processing speed, and general learning in the classroom (Gajre et al., 2008). The authors evaluated 379 middle schoolers, ages 11 to 13 years. These individuals were tested to see the effects on cognitions from simple eating habits, regularity of eating breakfast (Gajre et al., 2008). Results indicated those who ate breakfast regularly had significantly higher levels of attention-concentration and memory shown in their letter cancellation scores as well as statistically significantly higher scores in Science and English subjects. Those who ate breakfast regularly had higher rates of concentration, shown in their immediate recall which was significantly associated with eating habit and weight, compared to those who ate breakfast irregularly or not at all. Out of the 379 students, 20.8% of them were underweight. Despite whether the students ate or did not eat breakfast, the level of hunger did not differ. The conscious decision of eating breakfast can help an adolescent perform higher as well as boost cognition throughout the course of their school

day. Skipping one meal, or not eating regularly can inhibit the brain from allowing one to reach full cognitive potential (Gajre et al., 2008). This is a serious issue with the general population of adolescents, but even more vital for those with eating disorders.

Noort and colleagues (2016) more closely examined individuals with anorexia nervosa (AN). Both adolescents and early onset patients (EO) with anorexia had subtle differences in cognitive processing styles compared to their healthy same aged peers. Despite these differences neither group showed to be impaired or have cognitive deficits. Thirty children aged 9 to 14 who were currently diagnosed with anorexia nervosa (EO) and 30 healthy adolescents aged 15 to 19 with a diagnosis of anorexia nervosa (AN) were compared to 60 age-matched healthy controls. Overall, the healthy controls had significantly higher cognitive performance than the EO group. There were significant differences in the cognitive performance of the EO and healthy controls as well as the EO and AN groups. The EO group performed lower than the AN and healthy control groups on recognition and cognitive flexibility measured by the Trail Making Test, and cognitive inhibition measured by the Colour Word Test. The AN group performed lower than the EO and healthy control group on the Style Index, Central Coherence Index, and the Order of Construction index which measures visuospatial short and long term memory, recognition, and central coherence. Both the EO and the AN groups performed higher on the Copy task than the healthy controls, showing strength in speed of information processing. (Noort et al., 2016). In general, this suggests that healthy peers may have significantly higher cognitive performance than individuals with an eating disorder.

These studies suggest that those with eating disorders and those with adverse eating patterns show lower performance in cognitive skills such as memory, recognition, and attention-concentration. They can also have declines in cognitive flexibility and inhibition. Each of these factors make daily schoolwork challenging and improving one's grades or social persona even more challenging. Academics can be especially challenging for individuals with eating disorders due to these traits, tendencies, and negatively affected cognitive abilities.

Eating Behaviors and Dieting Patterns Associated With Academic Performance

As stated in the mentioned articles, eating behaviors can affect academic performance in many ways, both positive and negative. Food choices have the potential to increase grades and cognitive function or lead to body image distortion and the decrease in academic performance.

A longitudinal study was conducted in Spain over the course of 3 years (Adelantado-Renau et al., 2018). They measured 261 adolescents by comparing the risk of eating disorders, weight status, and academic performance. They found that 13% of the students, both boys and girls, were either overweight or obese; they also found that there is a 12% risk of developing an eating disorder in both genders (Adelantado-Renau et al., 2018). Although obesity and eating disorders affect both genders, it was found that the girls had a higher loss of control in their eating as well as a higher rate of body image distortion. However, individuals who were overweight or obesis showed a higher risk of eating disorders (Adelantado-Renau et al., 2018). Throughout the years, this study showed a positive association with weight status and eating disorders and a negative association between eating disorders and academic grades. Although there were no differences found in academic abilities between students who were non-risk and

those at risk for eating disorders, the students who were not at risk showed to have higher academic grades (Adelantado-Renau et al., 2018). This study suggests that the higher the risk for an eating disorder, due to overweight or obesity, the lower the students' academic grades.

Snelling, Belson, Beard, and Young (2015) also investigated using the 2010 YRBS survey. They surveyed 1,000 middle and high school students to evaluate health indicators such as levels of physical activity and food choices related to diet in relation to school performance (Snelling et al., 2015). The students were asked to report their grades over the past year as receiving mostly As, mostly Bs, mostly Cs, etc. They were also asked to chose the amount of days (1 day- 5 days) that they had sixty minutes of physical activity; the average number of hours spent watching television (0-5+); the average hours spent playing video games (0-5+); as well as the number of days in physical education at school. The students were also asked to identify how many times (0-4+) in the past 7 days they ate or drank the following: 100% fruit juice, fruit, green salad, potatoes, carrots, vegetables, soda, and fast food. The results concluded a significant relationship between physical activity and academic performance, as well as a significant relationship between food choices and academic performance (Snelling et al., 2015). Students who made mostly As and Bs consumed significantly less soda and fast food (Snelling et al., 2015). A significant correlation was also seen between student grade increase and an increase in vegetable consumption. Students who made As and Bs had a significant relationship with the number of days they were physically active (Snelling et al., 2015). Researchers concluded that students who made better health choices made higher grades.

These studies emphasize the importance of healthy eating behaviors and their effect on academic performance. Individuals who eat more vegetables and are physically active show an increase in academic performance (Snelling et al., 2015). Individuals who are at risk for adverse eating behaviors, whether it be due to obesity, loss of control in eating, or body image distortion, show a decrease in academic grades despite their intellectual abilities (Adelantado-Renau et al., 2018).

Food choices that are made each day can have lasting effects in regards to health and academic performance. The diversity in body mass index can not only lead to certain diagnoses, but can also play a role in grade point average and academic success (Adelantado-Renau et al., 2018).

Lu, Chou, & Lin (2014) assessed 8,690 7th grade students. The students were followed through their 9th grade year to see the lasting effects of food choices. Students' body mass indices were taken and they were categorized as underweight, normal, or overweight. After examining BMI, the students' seventh and ninth grade Comprehensive Cognitive Ability scores were considered. Results showed that students in the normal weight category performed higher than those in the underweight and overweight categories. It is also seen that the gap between normal weight scores and underweight scores is lower than that of normal and overweight scores. Therefore, it can be assumed that students who are overweight have more academic struggles than those who are underweight. When comparing genders, it is shown that, in regards to learning performance, it is more problematic for females to be overweight and for males to be

underweight (Lu et al., 2014). However, in general those who were overweight, irrespective of gender, had lower cognitive scores (Lu et al., 2014).

Unfortunately, food insecurity is a factor in students not receiving the proper nutrition or options for healthy eating patterns (Shanafelt, Hearst, Wang, & Nanney, 2016). Shananafelt and collegues evaluated 904 9th and 10th graders on food security, perceived health, body mass index, participation on a sports team, sleep, diet, and physical activity. In conjunction with a health survey, the students were also evaluated for attendance and academic grade point average. They were also asked about their participation in school breakfast and the encouragement they received from teachers to eat breakfast at school. This study showed that food insecure adolescents ate less calories than food secure adolescents and were less likely to report their perceived health to be excellent or very good (Shanafelt et al., 2016). They were also less likely to report conducting strenuous activity for more than half an hour per week. Food insecure students were more likely to eat school breakfast, be encouraged by teachers to eat school breakfast, and less likely to eat dinner as a family (Shanafelt et al., 2016). Unfortunately, food insecure adolescents had lower grade point averages, fell in the lower GPA percentile rank, and had a lower school attendance rate (Shanafelt et al., 2016).

Interestingly, and contradictory to many articles, abnormal eating patterns can be associated with a perceived high academic achievement. For example Krafcheck and Kronborg (2015) recruited fourteen females who had recovered from an eating disorder and were self-identified as being high achievers academically were evaluated. Each female developed their abnormal eating habits in their middle to high school years which included dieting to the point of

weight loss, some individuals had less severe symptoms and others were diagnosed with Anorexia Nervosa. Two of the 14 females were diagnosed with Bulimia Nervosa. In regards to their high achievement, these women remembered winning awards and attending gifted classes. Seven of the females were in the top 1% on their end of the year school exam and two of the participants were in the top 3%. Two participants scored lower than the top 5% and attributed this score to their eating disorder. All participants felt school came easily to them and felt they were smarter than their same aged peers (Krafcheck & Kronborg, 2015).

Regardless of whether the student is not making healthy food choices due to psychopathology, food availability, or lack of education, these studies show that students who are overweight have more academic problems than those who are underweight; however both underweight and overweight students struggle more than those who are normal weight (Lu et al., 2014). Students who are food insecure tend to have lower grade point averages and attend school less than those who are secure patterns (Shanafelt et al., 2016). In contradiction, some students who have adverse eating habits can succeed, or perceive themselves to succeed, despite their nutritional intake (Krafcheck & Kronborg, 2015).

Eating Behaviors and Dieting Patterns in High School to College

Unfortunately, unhealthy eating patterns do not stop with childhood and adolescents. Adverse effects from these lifestyle choices can be carried out through high school and into college years. Thunfors, Collins, and Hanlon (2009) conducted a study using The Personal Wellness profile to measure the overall health functioning of 4,427 7th to 11th graders. The mean BMI for the 7th graders was 25.4 and 26.2 for 11th graders, placing both groups in the

overweight range. The researchers found that the self-efficacy of these students in terms of their perceived ability to eat healthy and participate in physical activity was significantly associated with their interest in weight loss and healthy eating, however there was no significant association in their self-efficacy to maintain either of these (Thunfors et al., 2009). Out of the students who showed interest in healthy eating, 8% of them did not think they could actually eat healthy and 8% of them did not think they could actually lose weight (Thunfors et al., 2009).. Despite their interests and knowledge of losing weight/eating healthy, there was not a significant link between interest and efficacy to actually lose weight/begin healthy eating patterns (Thunfors et al., 2009). As student's progress to universities, their eating patterns and academic struggles continue (Yanover & Thompson, 2008). Drive for thinness, bulimic symptoms, perfectionism, body dissatisfaction, and academic performance were assessed in 1,584 university students. The participants were also asked to complete the Eating and Body Image Disturbances Academic Interference Scale. Of these students, 81 of them were in the underweight category, 786 were normal weight, 358 were overweight, and 157 were in the obese category (Yanover & Thompson, 2008). The Eating and Body Image Disturbances Academic Interference Scale was negatively and significantly correlated with GPA, indicating that the higher the EBIDAIS scores, the lower the GPA (Yanover & Thompson, 2008). Perfectionistic qualities were significantly correlated with GPA, body dissatisfaction, drive for thinness and bulimia (Yanover & Thompson, 2008). It is important to note that Perfectionism was not correlated with academic interference (Yanover & Thompson, 2008). Based on the EBIDAIS scale, the individuals were split into a disturbed group (136 individuals) and a control group (199 individuals). After further

evaluation of EBIDAIS scores and GPA, there was a significant correlation for the disturbed group but not for the control group (Yanover & Thompson, 2008). It can be seen through this study that Eating and Body Image Disturbances is correlated with a significant and negative effect on GPA (Yanover & Thompson, 2008).

To further evaluate University students, 1,165 undergraduate and graduate students were assessed using the Eating Disorder Diagnostic Scales, Work Productivity Activity Impairment, and Classroom Impairment questionnaire (Filipova & Stoffel, 2016). It was found that 7.8% of these students had a DSM-5 diagnosis of Binge Eating Disorder. The researchers found a weak but significant correlation between Binge Eating Disorder (BED) and obesity (Filipova & Stoffel, 2016). Students with BED were more likely to have higher levels of classroom productivity impairment, regular daily activity impairment, functional impairment, and emotional distress (Filipova & Stoffel, 2016). Students in the extremely obese category were more likely to have higher levels of daily activity impairment and social activity impairment (Filipova & Stoffel, 2016). It is shown that Binge Eating Disorder and obesity can have a negative effect on classroom, social, and daily activity (Filipova & Stoffel, 2016).

The studies conducted in older students elicit results of adverse effects on academic performance (GPA), class productivity, and daily productivity (Filipova & Stoffel, 2016). Students with adverse eating habits, whether it be due to body dissatisfaction or self-efficacy, experience a more difficult time with overall functioning and have higher rates of impairment with their grades and overall classroom productivity (Yanover & Thompson, 2008).

Summary and Purpose of the Current Study

The literature reviewed generally suggests that the beginning stages of adverse thinking and cognitions regarding one's body begin in early childhood (Perez et al., 2018). Thin-ideal internalization, self-objectification, and body dissatisfaction can begin as early as three years of age and is predicted by their mother's body satisfaction (Perez et al., 2018). As children move into adolescents, the thoughts they began in childhood amplify and result in negative cognitions regarding food. More than one half of teenagers are either on or think they should be on a diet and 3% of these teens become clinically ill (Nierengarten 2017). Adolescents who begin adverse eating habits whether that be skipping meals, poor food choices, or engage in eating disordered patterns show many serious problems that negatively affect their school performance (Gajre et al., 2008). These students have poorer attention, concentration, short and long term memory, cognitive inhibition, cognitive flexibility, and lower grades (Gajre et al., 2008). They seem to have higher levels of anxiety, depression, and Obsessive Compulsive Disorder (Noort et al., 2016). They cannot handle their academic stress as easily and have more difficulty in social engagements (Marx et al., 2006). Unfortunately this behavior and negative thinking does not end in middle and high school years, rather they continue into early adulthood as students begin college. University students engaging in eating disordered patterns or unhealthy food choices show declines in their course grades and classroom productivity (Yanover & Thompson, 2008). They also have lower self-efficacy in healthy eating and physical activity (e.g., Thunfors et al., 2009) as well as problems with regular daily and social activity in addition to their classroom impairments (e.g., Filipova & Stoffel, 2016).

The purpose of the current study was to assess the relationships between eating, exercise, and academic factors through adolescence and into young adulthood. Assessments were focused on self-reported eating patterns, physical activity, and academic performance from middle school, high school, and college. It was predicted that academic performance (i.e., grades) would be predicted by eating habits, exercise habits, school motivation, and academic interference during each academic phase (i.e., middle school, high school, and college). It was also predicted that middle school eating habits, exercise habits, school motivation, and academic factors would predict academic performance during high school and college.

CHAPTER II

METHOD

Participants

Participants were recruited through the MTSU Psychology Research Pool. Each participant received research credit in their general psychology course. One hundred seventeen students participated. Participants were aged 18-22 years (M = 18.99; SD = 1.78), and included both males (30.8%) and females (68.4%). Table 1 summarizes the demographics of the full sample.

Measures

Demographics. Participants indicated age, gender and year in school to provide a description of our sample (see Appendix A).

Anthropometrics. Each student self-reported their height and weight in order to calculate BMI. This information was used to categorize each student as underweight, normal weight, overweight, or obese.

Academic Performance Questionnaire. The Academic Performance Questionnaire was designed to gain information regarding grades and motivation (see Appendix B). The students were asked their grade status in Middle School, High School, and now as a college student. The students were also asked their ACT and/or SAT score in order to gain information on their standardized achievement. Motivation questions followed to better understand why the student received their grades in all three age groups.

Table 1

Demographic variables for the full sample (N = 117)

	n	*Percent*
Gender		
Male (i.e. he, him, his)	36	30.80
Female (i.e. she, her, hers)	80	68.40
Other (i.e. transgender)	1	0.90
Prefer not to say	0	0
Year in College		
Freshman	74	63
Sophomore	25	21
Junior	13	11
Senior	5	4
BMI Category		
Underweight	9	7.7
Normal	61	52.1
Overweight	23	19.7
Obese	24	20.5

Eating and Exercise Behavior Questionnaire. The Eating and Exercise Behavior Questionnaire measured the students' overall eating patterns, amount of exercise, as well as why they behaved in that manner (see Appendix C). Information was gained regarding amount of food normally consumed in a day and why the student ate that amount (e.g., on a diet, ate what they wanted to, enjoyed well-rounded meals). The measure also assessed how often students exercised as well as why they exercised that amount (e.g. trying to lose weight, a part of an athletic organization, personal trainer). Each item on the Eating and Exercise Behavior Questionnaire was answered with regard to Middle School, High School, and college.

Body Figure Rating Scale. Students were presented with a variety of preteen and adult images (Stunkard et al., 1983) and asked to select one that most resembled their body in Middle and High school as well as now, in college (see Appendix D). This information was used in conjunction with their height and weight to better understand their body perception.

Eating and Body Image Disturbances Academic Interference Scale. The Eating and Body Image Disturbances Academic Interference Scale (EBIDAIS; Thompson & Yanover, 2008) measured the extent to which a person's eating habits and body dissatisfaction interfere with their academics. This interference could include such events as skipping class, not paying attention in class, or not completing homework assignments. The participants were asked 12 questions to rate on a 5-point Likert scale ranging from *never* to *always* (see Appendix E). After completing the 12 questions, participants' responses are summed for an overall score. The calculated score identified the level to which their habits were/are interfering with their academics. Yanover and Thompson (2008) studied 1,583 undergraduates. From this, they found

the scale to have an internal consistency of .92 supporting its utility. Participants in this study completed the EBIDAIS three times, once for each of Middle School, High School, and college.

Procedures

After approval from the IRB was obtained, students signed up to participate through the Sona System and were provided a link to the survey on Qualtrics. The link led to the consent form (see Appendix F) first. Once they consented, participants were presented with the survey that included the demographics, Academic Performance Questionnaire, Eating and Exercise Behavior Questionnaire, Body Figure Rating Scale, and Eating and Body Image Disturbances Academic Interference Scale. Except for the demographics, all assessments were completed three times: once relative to Middle School, once for High School, and once for current college experience. After the survey was completed, the last screen thanked participants for their participation and provided resources for those who would like to talk to someone about their eating, exercise, and/or academic experiences and/or body concerns.

CHAPTER III

RESULTS

Tables 2, 3, and 4 provide the percentages, means and standard deviations for each of the dependent variables for middle school, high school, and college. During middle school and high school, most students reported earning mostly As or mostly As or Bs, whereas in college there is more grade variation reported, with about a third of the sample reporting grades of mostly Bs or lower. Academic motivation shows similar patterns in middle school and high school, but college students more frequently endorsed worrying about school and grades with very few (3.4%) reporting not worrying about grades. Regarding exercise, participants reported similar patterns of exercising some or a lot; during college they reported less exercising, with almost a third not exercising at all compared to only 13.7% and 9.5% in middle and high school, respectively. Eating habits were similar across all three time frames, but reasons for eating focused more on nutrition after middle school and were more financially related during college. Comparison of body figure ratings across the three time frames indicate no significant difference between middle and high school body figure ratings, $t(116) = .874$, $p = .88$. College body figure ratings, however, were significantly higher than both middle school figures, $t(116) = 2.12$, $p = .03$, and high school figures, $t(116) = 3.264$, $p = .001$. These ratings indicate that students perceive their bodies as larger in college than in middle and high school, and that their perceptions of their body size is similar for middle and high school. All mean body figure ratings were in the average weight range. Finally, comparison of perceived academic interference, as measured by the EBIDAIS, indicates differences as well. High school academic interference was

Table 2

Percentages, means and standard deviations for dependent measures for middle school

	%	*M*	*SD*
Grades			
Mostly As	50.4		
Mostly As and Bs	37.6		
Mostly Bs	4.3		
Mostly Bs and Cs	6.0		
Mostly Cs	1.7		
Motivation			
Worried about school and grades	23.1		
Turned in work but didn't worry about grades	25.6		
Attended and did what was required	8.5		
Cared about school and completed required	22.2		
Focused, interested, and motivated to perform well in school	20.5		
Exercise			
A lot (3+ hours per week)	59.0		
Some (1-2 hours per week)	27.4		
Did not exercise	13.7		
Eating			
At well-balanced diet	38.5		
Ate a restricted diet	10.3		
Ate excessively and whatever I wanted	50.9		
Reason for Eating Pattern			
Liked eating a variety	31.3		
Ate whatever and whenever; not mindful of nutrition	61.7		
Didn't have enough due to money	3.5		
Ate carefully due to nutritional concerns	3.5		
Body Figure Rating		3.88	1.409
EBIDAIS Total Score		17.61	5.45

N = 117.

Table 3

Percentages, means and standard deviations for each dependent measure for high school

	%	*M*	*SD*
Grades			
Mostly As	52.1		
Mostly As and Bs	35.9		
Mostly Bs	3.4		
Mostly Bs and Cs	6.0		
Mostly Cs	2.6		
Motivation			
Worried about school and grades	28.2		
Turned in work but didn't worry about grades	18.8		
Attended and did what was required	14.5		
Cared about school and completed required	12.0		
Focused, interested, and motivated to perform well in school	26.5		
Exercise			
A lot (3+ hours per week)	69.8		
Some (1-2 hours per week)	20.7		
Did not exercise	9.5		
Eating			
At well-balanced diet	46.1		
Ate a restricted diet	13.9		
Ate excessively and whatever I wanted	40.0		
Reason for Eating Pattern			
Liked eating a variety	33.0		
Ate whatever and whenever; not mindful of nutrition	52.2		
Didn't have enough due to money	1.7		
Ate carefully due to nutritional concerns	13.0		
Body Figure Rating		3.86	1.30
EBIDAIS Total Score		18.9	6.58

N = 117.

Table 4

Percentages, means and standard deviations for each dependent measure for college

	%	*M*	*SD*
Grades			
Mostly As	29.9		
Mostly As and Bs	37.1		
Mostly Bs	6.9		
Mostly Bs and Cs	19.8		
Mostly Cs	1.7		
Mostly Cs and Ds	1.7		
Mostly Ds	1.7		
Mostly Fs	.9		
Motivation			
Worried about school and grades	47.9		
Turned in work but didn't worry about grades	3.4		
Attended and did what was required	11.1		
Cared about school and completed required	9.4		
Focused, interested, and motivated to perform well in school	28.2		
Exercise			
A lot (3+ hours per week)	29.9		
Some (1-2 hours per week)	35.0		
Did not exercise	35.0		
Eating			
At well-balanced diet	43.6		
Ate a restricted diet	21.4		
Ate excessively and whatever I wanted	35.0		
Reason for Eating Pattern			
Liked eating a variety	38.5		
Ate whatever and whenever; not mindful of nutrition	34.2		
Didn't have enough due to money	12.0		
Ate carefully due to nutritional concerns	15.4		
Body Figure Rating		4.14	1.36
EBIDAIS Total Score		17.47	7.06

N = 117.

significantly higher than both middle school, $t(111) = 3.01$, $p = .003$, and college, $t(110) = 3.39$, $p = .001$. Middle school and college academic interference ratings did not differ, $t(113) = .284$, $p = .78$. These analyses indicate that students perceive that factors interfered with their academics in high school more than they did in either middle school or high school.

Middle school grades were hypothesized to be predicted by eating habits, exercise habits, school motivation, and academic interference. Specifically, poorer academic performance (i.e., lower grades) were expected to be predicted by unhealthy eating and exercise routines, lack of motivation, and more academic interference. Scores were totaled for each scale, lower scores indicating healthier behaviors and higher scores indicating unhealthy behaviors. Overall scores on the Eating and Exercise Habits Questionnaire, Eating and Body Image Disturbances Academic Interference Scale and the motivation question (6) on the Academic Performance questionnaire were used in this analysis. Correlations were calculated to identify predictive relationships among these variables. Table 5 shows these correlations for the middle school variables. Middle school grades were significantly positively correlated with eating habits and academic motivation. Specifically, higher grades were associated with more healthy eating patterns and more focus on academic performance in middle school.

High school grades were hypothesized to be predicted by eating habits, exercise habits, school motivation, and academic interference. Specifically, poorer academic performance (i.e., lower grades) were expected to be predicted by unhealthy eating and exercise routines, lack of motivation, and more academic interference. Scores were totaled for each scale, lower scores indicating healthier behaviors and higher scores indicating unhealthy behaviors. Overall scores

Table 5

Correlations among middle school grades, eating, exercise, motivation, and interference.

		Exercise	Eating Habits	Academic Motivation	Academic Interference
Grades	Correlation	.06	.20*	.20*	.12
	Significance	.50	.03	.03	.19
Exercise	Correlation		.22	-.11	-02
	Significance		.02	.23	.85
Eating Habits	Correlation			.06	.22*
	Significance			.54	.02
Academic Motivation	Correlation				.09
	Significance				.34

*$p < .05$.

on the Eating and Exercise Habits Questionnaire, Eating and Body Image Disturbances Academic Interference Scale and the motivation question (6) on the Academic Performance questionnaire were used in this analysis. Correlations were calculated to identify predictive relationships among these variables. Table 6 shows these correlations for the high school variables. High school grades were not significantly correlated with any of the other dependent variables.

College grades were hypothesized to be predicted by eating habits, exercise habits, school motivation, and academic interference. Specifically, poorer academic performance (i.e., lower grades) were expected to be predicted by unhealthy eating and exercise routines, lack of motivation, and more academic interference. Scores were totaled for each scale, lower scores indicating healthier behaviors and higher scores indicating unhealthy behaviors. Overall scores on the Eating and Exercise Habits Questionnaire, Eating and Body Image Disturbances Academic Interference Scale and the motivation question (6) on the Academic Performance questionnaire were used in this analysis. Correlations were calculated to identify predictive relationships among these variables. Table 7 shows these correlations for the college variables. College grades were significantly positively correlated with exercise, eating habits and academic motivation. Specifically, higher grades were associated with more frequent exercise, healthy eating patterns and more focus on academic performance in college.

Finally, it was predicted that eating and exercise factors in middle and high school would be correlated with college academic performance. Correlation coefficients were calculated among college grades and both middle and high school eating, exercise, academic motivation

Table 6

Correlations among high school grades, eating, exercise, motivation, and interference.

		Exercise	Eating Habits	Academic Motivation	Academic Interference
Grades	Correlation	.15	.14	.19	.21
	Significance	.10	.15	.04	.02
Exercise	Correlation		.23*	-.07	.14
	Significance		.02	.46	.15
Eating Habits	Correlation			.03	.18*
	Significance			.78	.05
Academic Motivation	Correlation				.17
	Significance				.08

*$p < .05$.

Table 7

Correlations among college grades, eating, exercise, motivation, and interference.

		Exercise	Eating Habits	Academic Motivation	Academic Interference
Grades	Correlation	.28**	.29**	.18*	.12
	Significance	.002	.002	.05	.22
Exercise	Correlation		.44***	.07	-.05
	Significance		<.001	.44	.62
Eating Habits	Correlation			.10	.31***
	Significance			.28	.001
Academic Motivation	Correlation				.20*
	Significance				.04

*$p < .05$. **$p < .01$. ***$p < .001$

and academic interference. College grades were significantly predicted by middle school eating habits, $r = .19$, $p = .04$, $n = 115$, middle school motivation, $r = -.21$, $p = .03$, $n = 116$, and high school motivation, $r = -.53$, $p < .001$, $n = 117$. Specifically, college grades were predicted by healthier middle school eating habits and more focused academic motivation in middle and high school.

CHAPTER IV

DISCUSSION

College-aged participants volunteered to complete an online survey for course credit. Eating and exercise habits, academic interference, academic motivation, and grades from middle school, high school, and college were reported and analyzed to assess relationships and predictability of academic performance from the other variables (i.e., habits, motivation, and perceived interference).

It was hypothesized that grades could be predicted by eating and exercise behaviors, academic interference, and motivation. Results from the 2010 YRBS survey found that middle and high school students who made better food choices and exercised performed better academically (Snelling et al., 2015). Similar to this study, results showed a significant correlation between eating and exercise behaviors and academic performance at the collegiate level. Therefore, we can understand that college grades can be predicted based on healthful or unhealthful eating and exercise behaviors. We also found that middle school grades were associated with healthy eating patterns and more focus on academic performance. We believe these results were obtained because of the link between healthy eating and higher levels of cognitive performance (Gajre et al., 2008). However, our findings showed that academic performance could not be predicted by eating and exercise habits at the high school level. We believe this contradiction was obtained because of multiple reasons. High school academic interference was significantly higher than in middle school and college, however many high school students still reported making As and Bs and having higher levels of motivation. High

school students have a very structured day between school, familial obligations, and extracurricular activities. Another reason for this contradiction may have been the lack of ability to recall specific habits from early adolescent years.

College students at Middle Tennessee State University were reported to have an average BMI in the overweight category. In regards to exercise, almost 70% of students either did not exercise or only exercised one to two time a week. Only 43% of these students ate a well-balanced diet. Students reported reasons for their eating habits; only 38% liked eating a variety of food. Reports showed 12% of students chose their meals due to finances and 34% did not make food choices based on nutrition. On average, these numbers can be generalized to college students and can help explain why more grades fell when students went to college as eating, exercise and academic performance are correlated at the collegiate level.

Limitations and Future Directions

There are limitations to this study as it was conducted during the COVID-19 pandemic. Eating and exercise habits may have recently changed as people could have been quarantined, working from home, or under atypical stressors. Additionally, the study was conducted online rather than in person in order to abide by safety protocols. Therefore, weight and height was self-reported in order to obtain the Body Mass Index. Further limitations include requiring the participants to recall memories of eating, exercising, and academics from middle and high school habits. Recollections are not always accurate. In addition, participants only included current college students, limiting the generalizability of the findings to those who have had at least some degree of academic success and academic goals. Future studies in this area could include direct

measures of certain variables, such as anthropometrics and grades to ensure accuracy. Additionally, instead of retrospective self-reporting of middle and high school experiences, conducting a cross sectional study of middle schoolers, high schoolers, and college students or a longitudinal study following middle schooler through to college would provide more accurate and useful data. Finally, including participants with more diverse academic experiences (i.e., not all college students) would provide a broader view of how these variables may be related.

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APPENDICES

Appendix A

Demographics

Please circle the *one* that best describes you

a. Male (i.e., he, him, his)

b. Female (i.e., she, her, hers)

c. Other (i.e., transgender)

d. Prefer not to say

Please answer the following

Age _____

Year in college _____

Appendix B

Academic Performance Questionnaire

Choose *one* that most reflects your grades in **Middle School**

a. Mostly A's
b. Mostly B's
c. Mostly A's and B's
d. Mostly C's
e. Mostly B's and C's
f. Mostly D's
g. Mostly C's and D's
h. Mostly F's

Choose *one* that most reflects your grades in **High School**

a. Mostly A's
b. Mostly B's
c. Mostly A's and B's
d. Mostly C's
e. Mostly B's and C's
f. Mostly D's
g. Mostly C's and D's
h. Mostly F's

Choose *one* that most reflects your grades in **College**

a. Mostly A's
b. Mostly B's
c. Mostly A's and B's
d. Mostly C's
e. Mostly B's and C's
f. Mostly D's
g. Mostly C's and D's
h. Mostly F's

Please answer one of the following or **X** "I did not take either test"
ACT Score _____ SAT Score _____ I did not take either test _____

Choose *one* that most reflected your motivation toward academic work in Middle School, High School and that reflects your academic motivation as a college student.

In **Middle School** I….

a. was worried about school, when my homework was turning in, and the grade I received on my assignments
b. turned my assignments in but did not care about my grades
c. attended school and did what was required to graduate
d. cared about school and completed my assignments
e. was focused, interested, and motivated to perform well in school

In **High School** I…

a. was worried about school, when my homework was turning in, and the grade I received on my assignments
b. turned my assignments in but did not care about my grades
c. attended school and did what was required to graduate
d. cared about school and completed my assignments
e. was focused, interested, and motivated to perform well in school

In **College** I….

a. am worried about school, when my homework was turning in, and the grade I received on my assignments
b. turn my assignments in but do not care about my grades
c. attend school and do what is required to graduate
d. care about school and complete my assignments
e. am focused, interested, and motivated to perform well in school

Is there anything that would be helpful for us to know about your academics in Middle School, High School, or now as an MTSU student? (i.e., poverty, diagnoses).

Appendix C

Eating and Exercise Habits Questionnaire

The following questions reflect your eating and exercise habits in **middle school**. Think back to **middle school**.

Choose *one* that most reflects your exercise in **Middle School**

1. I exercised a lot (3+ hours per week)
2. I exercised some (1-2 hours per week)
3. I didn't exercise

Choose *items* that most reflect why you exercised the amount you did in **Middle School**. Circle *all* that apply.

a. I exercised a lot because my friends did
b. I exercised some, but when I did I made it count
c. I was trying to stay healthy
d. I was trying to look better
e. I was under orders to exercise by parent/guardian
f. I was a part of an athletic organization
g. I had a health coach and/or personal trainer
h. I didn't exercise much in Middle School

Choose *one* that most reflects your eating habits in **Middle School**

1. I ate a well balanced diet
2. I ate a restricted diet
3. I ate excessively and whatever I wanted
4. Other _____

Choose *one* that most reflects why you ate the way you did in **Middle School**

a. I liked eating a variety of food that consisted of 3 well rounded healthful meals
b. I had plenty to eat, lots of options, ate snacks regularly, ate what I wanted and when I wanted and was not mindful of health factors or nutritional value.
c. I did not have enough to eat because we didn't have the funds. I ate what I had to when I got it.
d. I didn't eat very much and carefully selected my food based on calories/fat intake.

The following questions reflect your eating and exercise habits **in High School**.. Think back to when you were in **High School**.

Choose *one* that most reflects your exercise in **High School**

1. I exercised a lot (3+ hours per week)
2. I exercised some (1-2 hours per week)
3. I didn't exercise

Choose *items* that most reflect why you exercised the amount you did in **High School**. Circle *all* that apply.

a. I exercised a lot because my friends did
b. I exercised some, but when I did I made it count
c. I was trying to stay healthy
d. I was trying to look better
e. I was under orders to exercise by parent/guardian
f. I was a part of an athletic organization
g. I had a health coach and/or personal trainer
h. I didn't exercise much in High School

Choose *one* that most reflects your eating habits in **High School**

1. I ate a well balanced diet
2. I ate a restricted diet
3. I ate excessively and whatever I wanted

Other _____

Choose *one* that most reflects why you ate the way you did in **High School**

a. I liked eating a variety of food that consisted of 3 well rounded healthful meals
b. I had plenty to eat, lots of options, ate snacks regularly, ate what I wanted and when I wanted and was not mindful of health factors or nutritional value.
c. I did not have enough to eat because we didn't have the funds. I ate what I had to when I got it.
d. I didn't eat very much and carefully selected my food based on calories/fat intake.

The following questions reflect your eating and exercise habits **now as a college student**.

Choose *one* that most reflects your exercise **now**

1. I exercise a lot (3+ hours per week)
2. I exercise some (1-2 hours per week)
3. I don't exercise

Choose *items* that most reflect why you exercise the amount you do **now**.

Circle *all* that apply.

a. I exercise a lot because my friends do
b. I exercise some, but when I do I make it count
c. I am trying to stay healthy
d. I am trying to look better
e. I am under orders to exercise by parent/guardian
f. I am a part of an athletic organization
g. I have a health coach and/or personal trainer
h. I don't exercise much now

Choose *one* that most reflects your eating habits **now**

1. I eat a well balanced diet
2. I eat a restricted diet
3. I eat excessively and whatever I wanted

a. Other _____

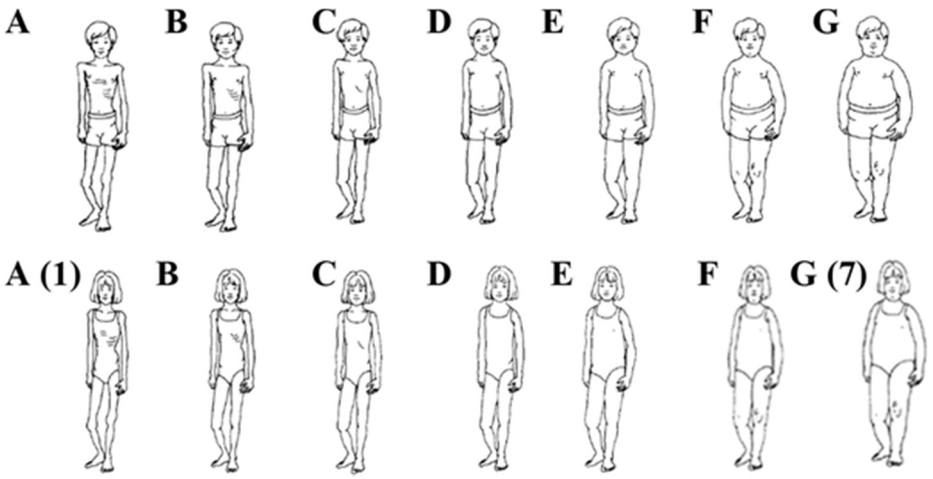
Choose *one* that most reflects why you eat the way you do **now**

a. I like eating a variety of food that consists of 3 well rounded healthful meals
b. I have plenty to eat, lots of options, eat snacks regularly, eat what I wante and when I want and am not mindful of health factors or nutritional value.
c. I do not have enough to eat because I don't have the funds. I eat what I have to when I get it.
d. I don't eat very much and carefully select my food based on calories/fat intake.

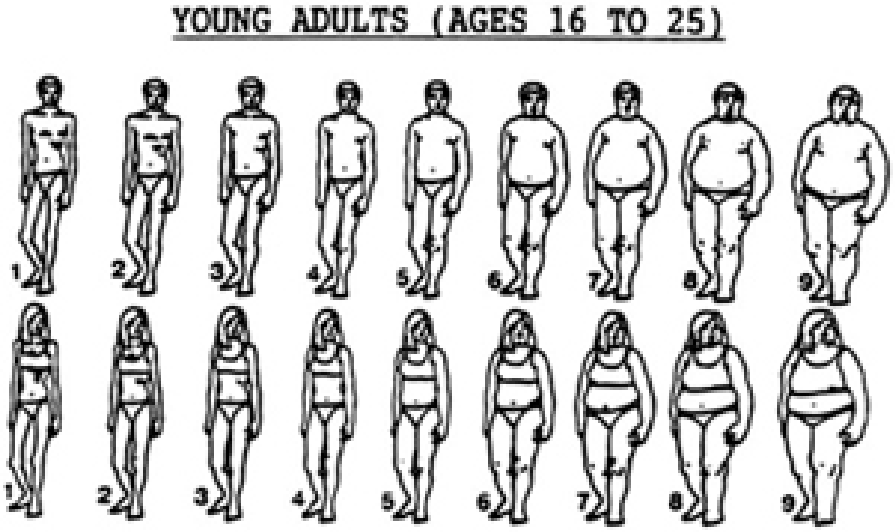
Appendix D

Body Figure Assessment

In middle school my body most resembled (select one):

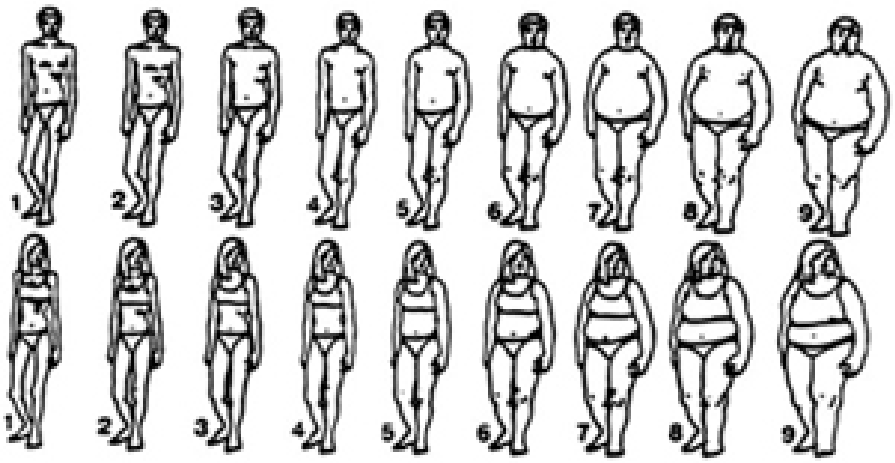


In high school my body most resembled (select one):



Now, in college, my body most resembles (select one):

YOUNG ADULTS (AGES 16 TO 25)



Appendix E

Eating and Body Image Disturbances Academic Interference Scale

Please select one response for each of the following items as it relates to **when you were in Middle School**

1. How often did you have difficulty concentrating in class because you were worried about your appearance?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

2. How often did you have difficulty concentrating in class because you were thinking about exercise?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

3. How often did you have difficulty concentrating in class because you were worrying about food or eating?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

4. How often did you have difficulty concentrating in class because you were feeling too hungry?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

5. How often did you miss class because your appearance prevented you from leaving the house?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

6. How often did you miss class because you had to exercise instead?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

7. How often did you miss class because you felt ill from a binge or a purge?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

8. How often did you spend less time than you should on your schoolwork because you were exercising?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

9. How often did you spend less time than you should on your schoolwork because you couldn't concentrate because you were hungry?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

10. How often did you spend less time than you should on your schoolwork because you couldn't concentrate because you were thinking about food or eating?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

11. How often did you spend less time than you should on your schoolwork because you couldn't concentrate because you were worrying about your appearance?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

12. How often did you spend less time than you should on your schoolwork because you couldn't concentrate because you were engaged in a binge or a purge?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

Please select one response for each of the following items as it relates to **when you were in High School**

1. How often did you have difficulty concentrating in class because you were worried about your appearance?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

2. How often did you have difficulty concentrating in class because you were thinking about exercise?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

3. How often did you have difficulty concentrating in class because you were worrying about food or eating?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

4. How often did you have difficulty concentrating in class because you were feeling too hungry?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

5. How often did you miss class because your appearance prevented you from leaving the house?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

6. How often did you miss class because you had to exercise instead?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

7. How often did you miss class because you felt ill from a binge or a purge?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

8. How often did you spend less time than you should on your schoolwork because you were exercising?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

9. How often did you spend less time than you should on your schoolwork because you couldn't concentrate because you were hungry?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

10. How often did you spend less time than you should on your schoolwork because you couldn't concentrate because you were thinking about food or eating?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

11. How often did you spend less time than you should on your schoolwork because you couldn't concentrate because you were worrying about your appearance?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

12. How often did you spend less time than you should on your schoolwork because you couldn't concentrate because you were engaged in a binge or a purge?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

Please select one response for each of the following items as it relates to **you now as a college student.**

1. How often did you have difficulty concentrating in class because you were worried about your appearance?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

2. How often did you have difficulty concentrating in class because you were thinking about exercise?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

3. How often did you have difficulty concentrating in class because you were worrying about food or eating?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

4. How often did you have difficulty concentrating in class because you were feeling too hungry?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

5. How often did you miss class because your appearance prevented you from leaving the house?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

6. How often did you miss class because you had to exercise instead?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

7. How often did you miss class because you felt ill from a binge or a purge?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

8. How often did you spend less time than you should on your schoolwork because you were exercising?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

9. How often did you spend less time than you should on your schoolwork because you couldn't concentrate because you were hungry?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

10. How often did you spend less time than you should on your schoolwork because you couldn't concentrate because you were thinking about food or eating?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

11. How often did you spend less time than you should on your schoolwork because you couldn't concentrate because you were worrying about your appearance?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

12. How often did you spend less time than you should on your schoolwork because you couldn't concentrate because you were engaged in a binge or a purge?

1 Never 2 Sometimes 3 Often 4 Almost Always 5 Always

Appendix F

MTSU IRB Approval Letter

Human Participant Research Proposal

IRBF001: EXPEDITED REVIEW REQUEST FORM

Institutional Review Board
Middle Tennessee State University

Administrative Check List

Receipt Date	2/24/2020	Protocol ID: 20-2139	Date Prescreened	2/28/2020
Revised Date	3/2/2020			
PreScreener	Moses Prabu			
PreScreening Decision: Complete: Send for Review				Date: 3/10/2020

	Prescreened Parameters	Status	Administrative Comments
AC1	Faculty approval (student PI)	Y	Kimberly Ward
AC2	CITI Training		Submit list-version of the approval – submitted on 03/02/2020
AC3	Additional Certification(s)	TBD	
AC4	Start/End Dates	Y	March, 2020 to March 2021
AC5	Funding Information	N/A	
AC6	Protocol Summary	Y	
AC7	Data collection instrument(s)	Y	Survey
•	• Online Data Information	N/A	Online survey:
AC8	Sample Size	Y	200
AC9	Participant Description	Y	MTSU SONA
AC10	Special Population	N/A	
AC11	Recruitment Tools	Y	SONA SCRIPT
AC12	Permission Letter(s)	N?A	
AC13	Informed Consent Template(s)	Y	Not reviewed
•	• Online consent	N?A	
AC14	Other Issues	NONE	

‘

PI Response (if any) – The investigator can use this field to comment or request information on any of the above listed administrative comments:

Since our original submission, we have made this study an online survey instead of an in person survey. The materials are exactly the same with the exception of self-reported height and weight rather than us measuring their height and weight. The link to the qualitrics survey is here:

Reviewers' Initial Disclosure

IRB Reviewer	Moses Prabu (optional)	Date Sent 3/2/2020
The IRB has expertise needed to review this research. REMARK:		☒Yes ☐No
The IRB member has a conflict of interest on this protocol. REMARK:		☐Yes ☒No

IRB Decision

Applicability:

The Level of risk for this protocol ☐Minimal ☐Greater than Minimal

Recommended Interval for Continuing Review ☐6 months ☐12 Months ☒Other:One-year project

Implement the following exceptions and restrictions:

Exceptions	☐NONE	TBD
RESTRICTIONS		TBD

Determination:

☐ Approve ☒ Approved pending to revision

Approval Category: (7) Research on individual or group characteristics or behavior

☐ Revise & Resubmit for further review

☐Refer to Full Committee

☐Refer to Full Committee with a request to defer the protocol

(a protocol once deferred may not be reviewed by MTSU again)

Moses Prabu	3/10/2020
Reviewer	Date

"Expedited" versus "Full Review" Definition:
Please note "expedited" does not mean this proposed activity would be reviewed by a "fast track" mechanism; it merely means the proposed research study does not require a full committee review. Other than the actual review & approval, the procedures and documents requirement are mostly similar.

- *Expedited Review:* *https://mtsu.edu/irb/ExpeditedProcedures.php*
- *Full Committee Review:* *https://mtsu.edu/irb/FullReviewProcedures.php*

What does this form contain?
This form separated into the following sections with added subsections to make the review process swifter. Although more time may be needed to complete these additional sections, this reviewer-friendly application form is expected to make the approval process simpler.

1. Project Information
2. RESERVED
3. RESERVED
4. Expedited Approval Category
5. Research Methods & Instruments
6. Participant Selection & Recruitment
7. Confidentiality
8. Informed Consent
9. CITI Training and Researcher Expertise
10. Mandatory Documents & Attachments
11. Investigators' Declaration and Assurance
12. *IRB Action (Office Use)*
13. *Additional Procedures*
    APPENDICES
14. RESERVED

Mandatory requirements

- Participant recruitment - https://mtsu.edu/irb/FAQ/Recruitment.php
- Completed informed consent form(s): https://mtsu.edu/irb/forms.php
- All of the investigators must complete all required research-specific CITI training modules - https://mtsu.edu/irb/requirements.php
- Study instruments
- Other documents may be required

Instructions for document submission.

- Use Microsoft Office to complete this form; DO NOT use other apps or utilities
- Send all of documents as **separate** files but in a single email to irb_submissions@mtsu.edu
- Submit all IRB forms in their original MS Word format – DO NOT CONVERT TO PDF
- Student researcher must have the IRB documents submitted by their research advisor

- **Do not begin your Research until you have received a formal letter of IRB approval!**

Review & Timeline

- The documents will be prescreened for completeness – incomplete applications will be returned
- A reviewer will be assigned once the prescreening step is cleared and it is expected that review will be completed within 2 weeks
- This form will be sent back to the investigators with reviewers' comments and other instructions
- The review process is iterative and it depends on how swiftly the investigators are able to address all reviewers' concerns.
- Once a final approval has been issued, a "locked" version of this form may be sent to the investigators to be used as a guideline for their study

1. PROJECT INFORMATION

1.1 Select the type or Review Mechanism:

☒ Expedited Review ☐ Full Committee Review

1.2 Project Title

Relationship Between Eating, Exercise and Academic Performance During Adolescence

1.3 Primary Investigator (PI) ☐Faculty ☐Staff ☒Graduate ☐Undergraduate

Name	Kaylee Chittenden
Email	kvh2n@mtmail.mtsu.edu Telephone 615-995-5658
Alternate Email	kh.everafterphotography@gmail.com *if PI is a student
Department/Unit	Psychology College Behavioral and Health Sciences
Office Location	Room # Building Box #
Contact Address	MANDATORY if Non-MTSU
CITI Program ID	8393365

Refer to https://www.mtsu.edu/irb/FAQ/ResponsibilitiesOfPI.php for PI responsibilities.

1.4 Faculty Advisor (FA) if the PI is a student:

Name	Kimberly Ujcich-Ward ☒Faculty ☐Staff ☐Other
Email	kimberly.ward@mtsu.edu Telephone XXX-XXX-XXXX
Department/Unit	Psychology College Behavioral and Health Sciences
Office Location	Room #305 Building Jones Hall Box #87
CITI Program ID	4414005

Refer https://www.mtsu.edu/irb/FAQ/Faculty.php

- **Must be completed by an MTSU faculty or a FTE if the PI is a student.**
- **The FA must submit the application packet by email to *irb_submissions@mtsu.edu* indicating that s/he has knowledge of this proposal.**

1.5 Co-Investigators (list all researchers other than the PI/FA) ☒ NONE

1.6 Research Classification *(select ALL that apply):*

☒ Social/Behavioral/Educational Research

1.7 Research Category *(select ALL that apply):*

☒ Thesis Dissertation

1.8 Miscellaneous Questions:

Project Questions	Response	Remark(s)
Expected start date	03/2020	
Anticipated completion date **The protocol will be closed on this date**	03/2021	
Source of funding (Funding agency, number/ID, and expiration date)	none	

Important Information:

- Expedited and Full protocols are valid for one year; Annual Progress Report is mandatory
- For studies that require more than one year, the investigator must submit a written request for continuing review and a Progress Report (form available at www.mtsu.edu/irb and click on FORMS)
- Each protocol can be continued twice; a new application must be submitted after 3 years

Office Use Only

Protocol ID	**20-2139**
Date Received	**02/24/2020**
Date Prescreen	**02/28/2020**
Revision (if applicable)	**03/02/2020**
Date of Review	**03/10/2020**
Date of Revision	**10/14/2020 (converted protocol to online data collection: Refer email correspondences below)**
Admin Review	**10/19/2020**
Revision	**10/26/2020**
Revised	**11/30/2020**
Approval Date	**12/01/2020**
Expiration	**11/30/2021**

Review
From: Kimberly Ward **Sent:** Wednesday, October 14, 2020 3:12 PM

To: irb_submissions <irb_submissions@mtsu.edu>
Subject: RE: 20-2139 Review for Kaylee Hamby Chittenden's thesis project

Hi Moses –
Thanks for talking with me about this protocol last week. I have attached the revisions to Kaylee's protocol and consent form as you requested in your review. Given the COVID circumstances, we have changed this study to an online survey instead of an in person one. The only change that makes to the study is we are not weighing them and measuring their height, but are just asking them to self-report. All other survey items are exactly the same. The survey is in qualtrics, and I posted the link to it on the submission form, but it is here as well : https://mtsupsychology.az1.qualtrics.com/jfe/form/SV_5oQRFCUAzOhrTmd. We also changed our consent form to the MTSU template for consent for online studies. It is the first page of the survey and is attached here as well. Finally, I am attaching Kaylee's CITI training that shows she did the Internet based research module.
Please let me know if you have any other questions or concerns. We are ready to start the project as soon as we get the approval from you.
Thanks,
Kim

From: irb_submissions <IRB.Submissions@mtsu.edu>
Sent: Tuesday, March 10, 2020 4:46 PM
To: Kimberly Ward <Kimberly.Ward@mtsu.edu>
Subject: RE: 20-2139 Review for Kaylee Hamby Chittenden's thesis project

Kimberly,

I am currently reviewing this protocol. I have attached the reviewed expedited application and the informed consent template with review comments highlighted in cyan. Although there are many comments, the concerns are centered around a single item: participant discomfort. Most other items are minor and shouldn't be hard to address.

Please let me know if you need more clarification or need further assistance.

Thanks for your patience and best wishes

Moses

Thank you and best wishes

Sincerely,
Moses

Moses M. Prabu, Ph.D.
Compliance Officer

Middle Tennessee State University (PO BOX 124)
Tel: +1 615 494 8918
Email: Moses.Prabu@mtsu.edu

-sent via Outlook Web App

From: Kimberly Ward
Sent: Monday, March 02, 2020 9:29 AM
To: irb_submissions <IRB.Submissions@mtsu.edu>
Subject: RE: 20-2139 PreSCreen for Kaylee Hamby Chittenden's thesis project

Hi Moses –
Kaylee's Citi training in list format is attached. Thank you.
Kim Ujcich Ward

From: irb_submissions <IRB.Submissions@mtsu.edu>
Sent: Friday, February 28, 2020 1:45 PM
To: Kimberly Ward <Kimberly.Ward@mtsu.edu>
Subject: RE: 20-2139 PreSCreen for Kaylee Hamby Chittenden's thesis project

Kimberly,

I have prescreened this protocol. The only missing item for this packet is the CITI certificate. I am unable to verify all the training modules for the student. Please send the student PI's citi training in the list format. Please refer to the attached tutorial for reference.

Sincerely,
Moses

Moses M. Prabu, Ph.D.
Compliance Officer
Middle Tennessee State University (PO BOX 124)
Tel: +1 615 494 8918
Email: Moses.Prabu@mtsu.edu

-sent via Outlook Web App

From: Kimberly Ward
Sent: Monday, February 24, 2020 1:29 PM
To: irb_submissions <IRB.Submissions@mtsu.edu>
Subject: Submission for Kaylee Hamby Chittenden's thesis project

Hi Moses –
One of the attachments on my previous submission email was incorrect. The correct ones are all attached here.
Thanks,

Kim Ujcich Ward

From: Kimberly Ward
Sent: Monday, February 24, 2020 1:23 PM
To: irb_submissions <IRB.Submissions@mtsu.edu>
Subject: Submission for Kaylee Hamby Chittenden's thesis project

Attached please find the IRB submission, consent form, survey, and Citi training certificates for Kaylee Hamby Chittenden's master's thesis project. I will be supervising her work on this project.
Kim Ujcich Ward

Kimberly J. Ujcich Ward, PhD, BCBA-D
Professor and Graduate Programs Coordinator
Department of Psychology
MTSU
Kimberly.ward@mtsu.edu
615.898.2188

4 APPROVAL CATEGORY for EXPEDITED REVIEW

Select the category under which this proposal qualifies for an expedited review. Refer to https://mtsu.edu/irb/FAQ/ExpeditedCategories.php for more details on each of these categories and make your selection after you have familiarized with the categories.

	Category Description	Select	Subcategory
1	Clinical studies of drugs and/or medical devices	☐	
2	Collection of blood samples	☐	
3	Collection of biological specimens for research purpose	☐	
4	Data collection through noninvasive procedures like exercise	☐	
5	Research involving materials (data, documents, records, or specimen) that were collected solely for non-research purpose	☐	**N/A**
6	Analysis of voice, video. Images and etc., for research purpose	☐	**N/A**
7	Research of individual or group characteristics or behavior	☒	**N/A**
8	Continuing review of certain previously approved studies	☐	
9	Continuing review of studies not conducted under investigational new drug or investigational device.	☐	

If multiple modes of data collection is being proposed, then select all the categories that apply. For instance, you propose to collect blood samples and plan to survey the participant behavior, then select categories 2 and 7.

Check the box(es) corresponding to the category under which your study qualifies for an expedited review. Enter the sub-category (https://mtsu.edu/irb/FAQ/ExpeditedCategories.php).

5 RESEARCH METHODS & INSTRUMENTS

5.1 HYPOTHESIS - What is the research question being addressed in the study?

1. Middle school grades will be predicted by eating habits, exercise habits, school motivation, and academic interference. Specifically, poorer academic performance (i.e., lower grades) will be predicted by unhealthy eating and exercise routines, lack of motivation, and more academic interference. Scores will be totalled for each scale, lower scores indicating healthier behaviors and higher scores indicating unhealthy behaviors. Overall scores on the Eating and Exercise Habits Questionnaire, Eating and Body Image Disturbances Academic Interference Scale and the motivation question (6) on the Academic Performance questionnaire will be used in this analysis. A step-wise regression will be conducted to predict academic performance from the other variables. 2. High school GPA will be predicted by eating habits, exercise habits, school motivation, and academic interference. Specifically, poorer academic performance (i.e., lower GPA) will be predicted by unhealthy eating and exercise routines, lack of motivation, and more academic interference. Scores will be totalled for each scale, lower scores indicating healthier behaviors and higher scores indicating unhealthy behavior. Overall scores on the Eating and Exercise Habits Questionnaire, Eating and Body Image Disturbances Academic Interference Scale and the motivation question (6) on the Academic Performance questionnaire will be used in this analysis. A step-wise regression will be conducted to predict academic performance from the other variables.
3. College GPA will be predicted by eating habits, exercise habits, school motivation, and academic interference. Specifically, poorer academic performance (i.e., lower GPA) will be predicted by unhealthy eating and exercise routines, lack of motivation, and more academic interference. Scores will be totalled for each scale, lower scores indicating healthier behaviors and higher scores indicating unhealthy behavior. Overall scores on the Eating and Exercise Habits Questionnaire, Eating and Body Image Disturbances Academic Interference Scale and the motivation question (6) on the Academic Performance questionnaire will be used in this analysis. A step-wise regression will be conducted to predict academic performance from the other variables.

5.2 BACKGROUND - Describe relevant research that has been done previously. Include citations as well as a brief description of relevant methods and important findings. You may limit this section to a sample of the most relevant research.

Eating habits play a large role in cognition and focus at school. The decision to eat breakfast affects one's ability level in concentration, processing speed, and general learning in the classroom. Three- hundred and seventy nine middle schoolers, ages eleven to thirteen years, were tested to see the effects on cognitions from simple eating habits, regularity of eating breakfast (Gajre, Fernandez, Balakrishna, & Vazier, 2008). It was shown that those who ate breakfast regularly had significantly higher levels of attention-concentration and memory shown in their letter cancellation scores as well as statistically significantly higher scores in Science and English subjects. Those who ate breakfast regularly had higher rates of concentration, shown in their immediate recall which was significantly associated with eating habit and weight, than those who ate breakfast irregularly or not at all. Out of the three hundred and seventy nine students, 20.8% of them were underweight. Despite the differences in breakfast eating, the level of hunger did not differ whether the adolescent chose to or not to eat breakfast. The conscious decision of eating breakfast can help an adolescent perform higher as well as boost cognition throughout the course of their school day. Skipping one meal, or not eating regularly can inhibit the brain from allowing one to reach full cognitive potential. This is a serious issue with the general population of adolescents, but even more vital for those with eating disorders.

To look narrower and into a specific eating disorder, individuals with Anorexia Nervosa both adolescents and early onset patients with anorexia had subtle differences in cognitive processing styles compared to their healthy same aged peers. Despite these differences neither group showed to be impaired or have cognitive deficits. Thirty children aged nine to fourteen who were currently diagnosed with anorexia nervosa (EO) and thirty healthy adolescents aged fifteen to nineteen with a diagnosis of anorexia nervosa (AN) were compared to sixty age-matched healthy controls. Overall, the healthy controls had significantly higher cognitive performance than the EO group. There were significant differences in the cognitive performance of the EO and healthy controls as well as the EO and AN groups. The EO group performed lower than the AN and healthy control groups on recognition, cognitive flexibility measured by the Trail Making Test, and cognitive inhibition measured by the Colour Word Test. The AN group performed lower than the EO and healthy control group on the Style Index, Central Coherence Index, and the Order of Construction index which measures visuospatial short and long term memory, recognition, and central coherence. Both the EO and the AN groups performed higher on the Copy task than the healthy controls, showing strength in speed of information processing. (Noort, Pfeiffer, et.al, 2016).

These studies suggest that those with eating disorders and those with adverent eating patterns show lower performance in cognitive skills such as memory, recognition, and attention-concentration. They can also have declines in cognitive flexibility and inhibition. Each of these factors makes daily schoolwork challenging and improving one's grades

or social persona even more challenging. Academics can be especially challenging for individuals with eating disorders due to these traits, tendencies, and lower cognitive performance.

Gajre, N.S., Fernandez, S., Balakrishna, N., & Vazir, S. (2008). Breakfast Eating Habit and its Influence on Attention-concentration, Immediate Memory and School Achievement. Indian Pediatrics, 45, 824-828.

Noort, B. M. V., Pfeiffer, E., Ehrlich, S., Lehmkuhl, U., & Kappel, V. (2016). Cognitive performance in children with acute early-onset anorexia nervosa. European Child & Adolescent Psychiatry, 25(11), 1233-1244. Doi: 10.1007/s00787-016-0847-0

5.3 PROTOCOL SUMMARY - Describe in detail each step of your proposed study by providing a description of all procedures to be followed, describe any experimental groups and/or manipulations. Also, give a brief description of your study design. (e.g., qualitative, correlation, factorial, etc)

This study involves a correlational design evaluating the relationships among eating habits, physical activity, and academic performance from middle school through college. This is a questionnaire study, with participants completing a survey online through Qualtrics.

The survey includes demographic items (age, gender and year in school), the Academic Performance Questionnaire which assesses grades and motivational factors association with academics, and the Eating and Exercise Behavior Questionnaire, which evaluates overall eating patterns, amount of exercise, as well as why they behaved in that manner . Participants also will indicated their body shape/size in middle, high school and college using the Body Rating Scale, on which participants are presented with a variety of preteen and adult images and asked to select one that most resembled their body. They also will complete the Eating and Body Image Disturbances Academic Interference Scale (EBIDAIS; Thompson & Yanover, 2008) a 12-item scale that measures the extent to which a person's eating habits and body dissatisfaction interfere with their academics. After approval from the IRB is obtained for the study, participants will access the study through the Sona System via the Psychology department Research Pool. Those who sign up for the study will be taken to the survey online via Qualtrics. The first page of the link is the consent form. After consenting to participate, participants will anonymously complete a packet including the Demographics, Academic Performance Questionnaire,

Eating and Exercise Behavior Questionnaire, Body Image Assessment, and Eating and Body Image Disturbances Academic Interference Scale.

NOTE: although many of the steps, such as, recruitment, informed consent, data collection, debriefing, are also elaborated elsewhere, it is crucial to provide a chronological account of the study in this section to allow the reviewer to get a full picture of all of the methods in context.

5.4 DATA DESCRIPTION:

5.4.1 Primary mode of data collection

Select ALL applicable options and complete appropriate Appendix sections:

5.4.1.1 Select type of interaction ☐ **NONE**

☒ Virtual or online interaction with NO direct physical contact with the participant

☐ Direct physical interaction with the participant: Complete Appendix COVID-19

☐ *No social distancing* ☐ *No Masks worn* ☐ *CDC guidelines not followed*

☐ Participant-to-participant direct contacts - Complete Appendix COVID-19

☐ *No social distancing* ☐ *No Masks worn* ☐ *CDC guidelines not followed*

5.4.1.2 Non-physical interventions/interactions ☒ **NONE**

☒ Social & Behavioral ☐ Educational Complete **Section 5.4.2**

☐ Existing Data – Analysis including investigation of audio/video Complete **5.4.2 & Appendix L**

☐ Biospecimen – Analysis of previously collected biological samples Complete **Appendix F**)

If you selected one of the above, then provide a simple definition of what you mean by "data" in this research: We are gathering questionnaire data about eating, exercise, and academic experiences.

5.4.1.3 Other Intervention/interactions ☒ **NONE**

5.4.2 Data Acquisition

Complete this section for all types of Social/Behavioral and Education studies:

Select all that apply

☒ **5.4.2.1 Survey**[8] *Submit Survey either as PDF or as MS Word document*

☒ Qualtrics Survey[10] *Visit https://mtsu.edu/irb/FAQ/OnlineDataCollection.php for more information*

Qualtrics Link(s): https://mtsupsychology.az1.qualtrics.com/jfe/form/SV_5oQRFCUAzOhrTmd

☐ 5.4.2.2 **Interview**[8] *Submit interview script/topics as a PDF or as a MS Word document*

☐ 5.4.2.3 **Observation**[9]

Explain and describe the instruments

☐ **5.4.2.4 Focus Group(s)[9]**
Explain and describe the instruments:

☐ **5.4.2.5 Other**
Explain and describe the instruments

Foot Notes:
[8] *Attach a list of survey/interview questions with the application*
[9] *Describe the instruments to be used in the observational study or to be used during focus groups*
[10] All of the investigators MUST *complete "Internet Based Research" module under CITI SBR course*

5.5 DATA ANALYSIS - What is your plan for analyzing the data**? Include how any personal data, voice recordings, images and other types of identifiable artifacts collected from the participants will be used in the analysis.**

Our data will be analyzed by using SPSS softward to evaluate group responses to the questionnaires. We conduct a series of stepwise regression analyses to predict academic performance from eating and excersie, eating and body image distruances academic interference, and motivation variables.

Reviewers' Comment on Data Collection & Analysis

Reviewer: The statement of purpose/hypothesis and the description of the methods including data acquisition plan are adequate. **Critique**:	☒Yes ☐No
PI Response:	
Reviewer: The data collection plan is CLEAR and all of the interactions are explained legibly and logically by selection of appropriate boxes. **Critique**:	☒Yes ☐No
PI Response:	
Reviewer: The data collection is done in a manner to protect the anonymity and welfare of the participants. **Critique**:	☐Yes ☐No
PI Response:	
Reviewer: The data analysis plan proposes to protect the anonymity and welfare of the participants. **Critique**:	☒Yes ☐No
PI Response:	

Recommended changes to data collection or attached instruments ☒NONE

Reviewer**: Recommended Changes:**
PI Response:

5.6 How will this design allow you to address the research question?

This design will allow us to specifically test our prediction model of academic performance being predicted by eating and exercise routines, motivation, and academic interference at each academic level (middle school, high school, college).

5.7 RESERVED – No response is needed

5.8 DEBRIEFING - How will participants be debriefed? (In addition to describing the debriefing procedure, attach a copy of all debriefing information)

On the last page of the survey, participants are presented with a brief description of what the study is about. They are also offered information about resources that offer support for individuals who are experiencing distress or difficulties with eating and/or body image concerns. Both mental health services and social services offering support for students are provided in case any participants want to talk with a professional or need to access support services. A copy is attached (it is the last page of the online survey).

NOTE: In addition to any debriefing materials, an electronic copy of the informed consent must be provided to the subjects if the study is conducted over the internet.

Debrieifing

Reviewer: The proposed debriefing process and script are adequate. **Critique** Please provide adequate information on how you plan to debrief the pariticipants after they complete this study. Some of the items in the survey may have a negative influence on certain particiapnts. So, provide a script that would be given to the particicipants to seek help in case.	☐Yes ☒No ☐N/A
PI Response:	

Recommended changes to the debriefing script ☐
NONE

Reviewer**: Recommended Changes:** Submit a debriefing script
PI Response:

5.9 RISKS - List the potential risks and discomforts to the participants

There are no anticipated risks to participants in the study beyond what they may experience in daily life when talking about or thinking about their middle school and high school experiences. Some of the questions may prompt negative feeling about some of your experiences from your adolescence, but those feelings should be similar to what you might expereince any time you think about your middle school or high school body image or habits.

Risk Estimation:

- ☒ **Minimal Risk –** *the probability and magnitude of harm or discomfort anticipated in the research are not greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests.*
- ☐ **More than minimal** – a slight increase in risk compared to the definition of minimal risk
- ☐ **Risk** – the subjects may experience reasonably foreseeable **risks** or discomforts
  *Definition: If evaluating a particular **risk** of research associated with a standard of care is a purpose of the research, then in general **OHRP** considers that particular **risk** to be "reasonably foreseeable (45 CFR 46.116(a)(2)).*

5.10 BENEFITS – list prospective benefits of conducting this research. Include direct benefits for participants, science, and society

The benefits of the study are primarily to the advancement of our scientific understanding of the relationship between health habits and academic performance from middle school into college. There are no direct benefits to participants other than course credit they may receive for participation.

2.10 RISK to BENEFIT RATIO: Evaluate the level of risk relative to the potential benefits.

The benefits of the research outweight the risks as we are able to gain information that can potentially help future students minimize negative effects of adverse health habits on academic performance.

Reviewers' Assessment of Risks/Benefits

Note: Risks may include possible physical, psychological, economic, socil, and legal harms

Minimization of Risks:

A. Reviewer's description of how the risks to the subjects are minimized
   Although there are no real risks for this study, there are potential discomforts for certain subjects. Please identify what type of discomforts a participant may experience.

B. Are the procedures consistent with sound research design and not unnecessarily expose the subjects to risk? ☒Yes ☐No If not, explain: C. Are the procedures already being performed for diagnostic or treatment purposes? ☐Yes ☐No If yes, explain: Not applicable
PI Response:

Reviewer: The risks described in this application adequately cover all of the risks encountered in the study. **Critique**	☒Yes ☐No
PI Response:	

Reviewer: The risks to subjects are reasonable in relation to anticipated benefits, as well as, research purpose and setting. **Critique** Elaborate on the discomforts. Mirror the potential discomforts in Item 8 of the attached Informed Consent script	☒Yes ☐No ☐N/A
PI Response:	

Reviewer: There are provisions to protect the rights and welfare of Vulnerable populations. **Critique**	☐Yes ☐No ☒N/A
PI Response:	

6. PARTICIPANT DESCRIPTION and RECRUITMENT

6.1 Maximum Number of Participants (Sample Size): 200

6.2 Minimum and maximum age of the participants: 18-26 years of age

6.3 Description: Provide a simple description of who your ideal participant(s) would be:
Participants will be 18-26 year olds, with diverse genders and ethnic groups included.
Note: Use separate lines to describe different types of participants to be used in this study

6.3 Targeting more than one type of participants: Explain below if the target population would consist subsets of groups (Eg. Parents and their minor children, teachers and their students, doctors and their patients, etc.)
No additional groups will participate.

6.3 Participant population (Select ALL that will be specifically targeted):
MTSU Psychology Research Pool (complete section 6.7) ☒

NOTE:

- Research with Pregnant Women – Complete Additional Information Page (Beta Testing)
- Research with prisoners – Complete Additional Information Page (Form F022)
- Research with minors:
  - Educational Research with minimal risk – Complete Appendix B (scroll down this form)
  - Non-educational Research – Complete Additional Information Page (Form F021)

6.4 Recruitment Tools

Visit https://mtsu.edu/irb/FAQ/Recruitment.php for more information

☐IRB Flyer ☐IRB Recruitment Email[14]
☐Word of mouth[14] ☐Telephone[14] ☐Regular Mail[14] (Submit sample)

[14]Send separate transcripts for each type of recruitment transcript as a separate If contacting the participants by email or telephone or regular mail, explain how you originally obtained their contact information.

☐Web posting – Explain how the initial contact will be made and submit examples

☐Social media – EXPLAIN how the initial contact will be made and submit examples

☒OTHER MTSU Psychology Research Pool

6.5 How will participants be recruited and selected for this research? Describe the recruitment (initial contacts) methods and compensation (inducement) to participants. If any advertising or recruitment devices will be used they must be attached to the application.
Refer: https://www.mtsu.edu/irb/FAQ/Recruitment.php

Describe the recruitment steps: After IRB approval is obtained, the study will be visible on the Sona System for the Psychology Resarch Pool. Participants then will sign up via the sona system to access the survey to participate. The study will be worth 1 research credit for these students. No other compensation will be offered.

NOTE: If the participants are to be drawn from an institution or organization (e.g., hospital, social service agency, prison, school, etc.) which has the responsibility for the participants, then **documentation of permission from that institution must be submitted before final approval can be given (https://www.mtsu.edu/irb/FAQ/PermissionLetters.php).**

6.6 Inclusion/Exclusion: Provide a list of inclusion/exclusion criteria for the proposed research and justify any demographics (e.g. sex, race, economic status, sexual orientation) that have been excluded.

Inclusions: 18-26 year olds, all genders, races, social economic status, and sexual orientation.
Exclusions: those older than 26 years.

6.7 Inducement and Compensation: ☒ NOT Applicable

Explain inducement plan for compensating the participants. Examples are: extra credit, cash, gift card, meals and etc. The inducement has to be fair and should not unfairly influence the decision of the participants. Provide a clear description of the mode of disbursement of the

6.8 Recruitment through the Psychology Research Pool (SONA): ☐ NOT Applicable
Refer: (http://mtsu.sona-systems.com/)

Provide a title, a brief abstract (one or two sentences describing the project) and a full description (including the risks, benefits, and any information necessary for students to make an informed decision about participating). These should be written exactly as they will appear to the Research Pool participants.

Title: Relationship Between Eating, Exercise and Academic Performance During Adolescence
Brief Abstract: This study is a survey of health habits (including eating and physical activity) and academic performance from middle school, high school, and college.
Full Description: Participants will complete questionnaires reporting eating habits, physical activity, body perception, and overall academic performance from middle school, high school, and college.

6.9 Recruiting Amazon Mechanical Turk workers ☒ NOT Applicable
Complete MTurk Additional information Page Form F023 (https://mtsu.edu/irb/forms.php)

6.10 Enrolling Qualtrics Panel members as participants ☒ NOT Applicable
Complete Qualtrics Panel Additional information Page Form F023b from the IRB Forms page (https://mtsu.edu/irb/forms.php)

Assessment of Participant Selection from MTurk/Qualtrics Panel	
Reviewer: The selection of subjects is appropriate (e.g., inclusion/exclusion criteria) in relation to the research purposes and setting. **Critique**	☒Yes ☐No
PI Response:	
Reviewer: The recruitment process avoids the potential for undue influence or coercion. **Critique**	☒Yes ☐No
PI Response:	
Reviewer: The recruitment materials are appropriate. **Critique**	☒Yes ☐No ☐N/A
PI Response:	
Reviewer: The compensation (method/amount) avoids the potential for undue influence or coercion. **Critique**	☒Yes ☐No ☐N/A
PI Response:	

Recommended changes to the recruitment materials ☒
NONE

Recommended Changes:
PI Response:

7 CONFIDENTIALITY

7.1 Personal Information: Select ALL those apply from the following list of identifying information (but not limited to) that will be recorded from your research participants.

NONE

The above personal information are collected as research data ☒ Yes ☐ No

The above personal information are collected for administrative purposes ☐ Yes ☒ No

Provide additional explanation if needed:

The only demographic information gathered will be age, self-identified gender, and year in school.

7.2 JUSTIFICATION - Provide a justification for why each type of information listed above is necessary for this study and also explain how that information will be protected/destroyed

The demographics requested include age, gender, and year in school. This is necessary to be able to describe our sample in presentations and/or publications from this project.

7.3 DATA STORAGE - Where will research materials be stored? If anywhere other than an MTSU faculty researcher's office, please describe why the faculty researcher's office is not secure; include an address where data will be stored.

The materials will be stored digitally for three years in Dr. Ujcich Ward's MTSU office (currently located in room ACB 373), after which time the completed data files will be deleted.

Federal guidelines require

- Study related records (documentation of informed consent, surveys, study notes, data records, and all correspondence) be stored securely for **at least 3 years** after data collection ends
- Records must be stored securely in a faculty member's office on campus for 3 years. (Or another secure location if there is reason to believe the faculty member's office is not secure. These arrangements must be approved).

- **Assessment of Subject Protection**

The study proposes the following safety monitoring:	☒N/A
The investigator must implement these safety monitoring provisions:	☐Yes ☐No ☒N/A
PI Response:	
This proposal makes adequate provision to maintain the confidentiality of data. **Critique**	☒Yes ☐No

PI Response:

7.4 List anyone other than the Investigators mentioned in page 1 who will have direct access to the research participants or their primary data. Consider research assistants, transcribers, statisticians, and others who may be present during the research or have access to the data records. These individuals must also submit Human Subjects Training Certificates.

N/A

8 INFORMED CONSENT

- **Adult participants only; Use Appendix B for describing the consent process involving minors**
- Refer https://www.mtsu.edu/irb/FAQ/ConsentAndAssent.php for more information

8.1 Will informed consent be obtained from participants? (Consent waiver)

☒ Yes

8.2 Will you collect signed consent forms?

☒ Yes

Each participant must be provided with a copy of the informed consent signed by the PI/FA regardless if participant signatures are collected or not

8.3 Will you obtain consent orally?

☒ NO

Each participant must be provided with a copy of the informed consent signed by the PI/FA regardless if participant signatures are collected or not

8.4 Will you administer the informed consent by VIRTUAL/ONLINE methods?

☐ NONE
☐ Virtual (Zoom): Complete Appendix G (Section G.6)
☐ Telephone Interview: Complete Appendix G (Section G.6)
☒ Online using Qualtrics: **minimal risk studies only:** Complete Appendix G (Section G.5) with explanation

Paste the Qualtrics link for the proposed online study here:
https://mtsupsychology.az1.qualtrics.com/jfe/form/SV_5oQRFCUAzOhrTmd
Refer https://mtsu.edu/irb/FAQ/OnlineDataCollection.php for more information.

~~**8.4 Will you administer the informed consent ONLINE? (minimal risk studies only)**~~

~~☒ NO~~

~~Web-based data collection – Mandatory consent requirements:~~

- ~~*All exclusion inclusion criteria must be clearly disclosed prior to the consent*~~
- ~~*The first page of the study must be the informed consent form*~~
- ~~*Consent to participate must be explicitly asked and separate responses must be entertained by clearly indicated boxes to accept or deny*~~
- ~~*An age-verification question with an active response must be added*~~
- ~~*The text for informed consent should be provided to the participant as part of debriefing or a follow up email whichever is approved by the IRB*~~

Reviewer's Assessment of Documentation of Informed Consent

The PI requests:

A. ☐ SIGNED informed consent with participant name and age
B. ☒ ANONYMOUS informed consent with participant signature and age
C. ☐ VERBAL consent with age
D. ☒ ONLINE informed consent with age-verification
Reviewer's Comments

E. ☐ Alteration of informed consent (Details in Appendix G)
Reviewer's Comments

F. ☐ Waiver of informed consent
Reviewer's Comments

G. Is the chosen process and documentation of consent appropriate for this study? ☒ Yes ☐ No
Add Remarks if NO and instruct what type of informed consent must be used in this study:
Reviewer's Recommendation:

PI Response:

8.5 Will the participants receive compensation/inducement for enrolling?

☒ NO

Mandatory compensation disclosures:

- *All eligibility and requirement to receive the compensation must be clearly disclosed*
- *The participants must receive the compensation or a portion of once they enroll*

- *Documentation requirement for disbursing compensation, such as obtaining W9 forms and other records must be clearly disclosed before enrollment.*

9.6 Give a description of your consent "process". Include who is administering the consent information, where is it obtained, how is it administered and etc.?

The consent form is the first page of the online survey that the participants will access when the follow the study link. The consent page describes the study, the risks and benefits, and asks the participant to check the "agree" boxes to consent. Participants must answer this consent in the affirmative to then access the survey; if they do not check yes, they are taken to the final page with a thank you and do not ever access the survey.

Use Section 5.6 to describe the consent process when involving ADULT participants. When enrolling **minors**, use **Appendix B** for explaining **parental consent and child assent**.

8.7 MANDATORY Informed Consent Elements Check List:

Select "yes" if the element appears in your consent document, if it does not check "no". If you check no to any item you must complete the request for waiver of consent. See Appendix G.

A statement that the study involves research and the true purpose of the research (If using deceit, check no and justify in Appendix G).	Yes ☒ NO ☐
A description of all the procedures in detail to be followed and the expected duration	Yes ☒ NO ☐
Foreseeable risks or discomforts to the participant	Yes ☒ NO ☐
Benefits to the participant or others (NOT COMPENSATION)	Yes ☐ NO ☒
Disclosure of appropriate alternative procedures or courses of treatment N/A ☒	Yes ☐ NO ☐
A statement describing the extent of confidentiality of records identifying the subject will be maintained	Yes ☐ NO ☒
Explanation for compensation (inducement) for participation (not listed under the benefits section) along with any requirements and qualifications for receiving the proposed compensation	Yes ☐ NO ☒
A statement regarding compensation to participants in case of injury	Yes ☐ NO ☒
Contact information for the researcher and the Compliance Officer	Yes ☒ NO ☐

A statement that participation is voluntary, there are no penalties for refusal to participate, and participation can be discontinued at will without loss of benefits.	Yes ☒ NO ☐

Reviewer's Assessment of the Informed Consent process

The proposed plan to administer informed consent is appropriate. **Critique**	☒Yes ☐No
PI Response:	
The study procedures in this application match the submitted informed consent. **Critique** The study procedures are OK. but the discomforts must be elaborated	☐Yes ☐No
PI Response:	
The online informed consent reflects the consent document presented for this review. **Critique**	☐Yes ☐No ☒N/A
PI Response:	
The risks described in the application are consistent with the consent document or online/verbal consent script. **Critique** Not applicable	☐Yes ☐No
PI Response:	

Recommended changes to the informed consent template ☐NONE

Recommended Changes: Revise and resubmit the attached informed consent template
PI Response:

9 TRAINING and EXPERTISE

This application WILL NOT be reviewed if training is incomplete

8.1 Will this research involve specialized procedures or methods that will require specific training or expertise?

☒ NO
☐ YES Explain:

9.2 Provide a list of qualifications possessed by the investigating team to address any potential challenges during this study.

Kaylee Chittenden: Bachelor's of Science in Organization Communication pursuing Master's of Arts in School Psychology
Kim Ujcich Ward: Doctorate Professor at Middle Tennessee State University

9.2 CITI Training *The following CITI course(s) and modules are mandatory. Review your CITI training certificate and check boxes for all those modules that have been completed by the entire research team.*

- The entire investigating team must complete "Social and Behavioral Research" basic course
- Students must also complete "Students in Research" module in addition
- Study-specific and participant-specific modules/training must also be completed
- **Click here or visit http://www.mtsu.edu/irb/requirements.php to learn more**

☒ Social & Behavioral Research (SBR)	
Modules for All Researchers	Modules required based on researcher status and the study
☐ Belmont Report and CITI … (ID: 1127) ☐ History and Ethical Principles - SBE (ID: 490) ☐ Defining Research ….. - SBE (ID: 491) ☐ The Federal Regulations - SBE (ID: 502) ☐ Assessing Risk - SBE (ID: 503) ☐ Informed Consent - SBE (ID: 504) ☐ Privacy and Confidentiality - SBE (ID: 505) ☐ Conflicts of Interest in …. (ID: 488) ☐ MTSU Module DEMO (ID 1073)	☒ Students in Research (ID 1321) **MANDATORY FOR STUDENTS** ☐ Research with Prisoners – SBE (ID: 506) ☐ Research with children – SBE (ID 507) ☐ Research in Public ….. Schools – SBE (ID 508) ☐ International Research – SBE (ID 509) ☐ International Studies (ID 971) ☒ Internet-based research – SBE (ID 510) ☐ Research and HIPAA …. (ID 14) ☐ Research on Workers/Employees (ID 483) ☐ Hot Topics (ID 487) ☐ IRB Member module (ID 816) ☐ IRB Administrators …. (ID 13813)

Investigators' Qualifications

Reviewer: Study personnel appear appropriate and qualified. **Critique**	☒Yes ☐No

PI Response:

10 APPLICATION CHECKLIST

10.1 Check List: To be completed by the PI Please READ and INITIAL each item. Incomplete applications will NOT be prescreened.

☒ The application is complete
☒ Faculty Advisor information and signature included if the PI is a student
☒ CITI certificates attached
☒ Participant information and methods to enroll is provided
☒ Recruitment materials/scripts for enrolling participants is/are attached
☒ Signup information for Psychology Department Research Pool (if applicable) is provided
☒ Consent template(s) for all types of proposed data collection methods is/are included
☐ Alteration to consent process or changes to the standard consent template are justified
☒ Surveys, questionnaires, tests, interview forms/scripts attached – include a PDF of the entire survey if the study is being administered via Qualtrics
☒ Qualtrics link(s) for studies conducted online is/are provided
☒ Appendix section(s) for additional methods are completed
☐ Permission letters on official letterhead for conducting research at non-MTSU sites
☐ Other:

10.2 Additional Procedural Information
Indicate below whether this study involves additional procedures listed below. Be sure to complete the selected appendices below the signature section

Appendix		Additional Procedure Information
☐	A	Risk (Hidden)
☐	B	Minors as Participants
☐	C	Psychological Intervention (Hidden)
☐	D	Deception (Hidden)
☐	E	Physiological Intervention (Hidden)
☐	F	Biomedical Procedures & Biospecimen (Hidden)
☒	G	Changes to Informed Consent
☐	J	Monetary compensation for participation
☐	K	Physical interaction (intervention/assessment & other) (Hidden)

☐ L Analysis of existing data not eligible for exemption (Hidden)

The hidden additional procedural pages will be unlocked during the prescreening step.

11 DECLARATION

Sign by entering your name in the fields below. Student PI's MUST enter their name by logging into their MTSU account. Although not mandatory, faculty researchers and advisors are encouraged to enter their name by logging to their MTSU account.

7.1 PI Signature:

I certify by entering my name below that:

1) the information provided for this project is accurate;
2) no other procedures will be used in this project;
3) any modifications in this project will be submitted for approval prior to use; AND
4) I have read and fully understand my responsibilities as the PI (https://www.mtsu.edu/irb/FAQ/ResponsibilitiesOfPI.php)

Kaylee Chittenden	**10/23/2020**
***Name of the Investigator (PI)**	**Date**

*Students PIs must enter their name by logging into their MTSU account

7.2 Faculty Advisor (if the PI is a student)

By entering my name below I certify that this project is under my direct supervision and that I am responsible for insuring that all provisions of approval are complied with by the investigator.

Kim Ujcich Ward	**02/06/2020**
Name of the Faculty Advisor (FA)**	**Date**

**Although not mandatory, faculty PI/FA are encouraged to enter their name by logging into their MTSU account

From: Kimberly Ward
Sent: Monday, March 02, 2020 9:29 AM
To: irb_submissions <IRB.Submissions@mtsu.edu>
Subject: RE: 20-2139 PreSCreen for Kaylee Hamby Chittenden's thesis project

Hi Moses –
Kaylee's Citi training in list format is attached. Thank you.

Kim Ujcich Ward

From: irb_submissions <IRB.Submissions@mtsu.edu>
Sent: Friday, February 28, 2020 1:45 PM
To: Kimberly Ward <Kimberly.Ward@mtsu.edu>
Subject: RE: 20-2139 PreSCreen for Kaylee Hamby Chittenden's thesis project

Kimberly,

I have prescreened this protocol. The only missing item for this packet is the CITI certificate. I am unable to verify all the training modules for the student. Please send the student PI's citi training in the list format. Please refer to the attached tutorial for reference.

Sincerely,
Moses

Moses M. Prabu, Ph.D.
Compliance Officer
Middle Tennessee State University (PO BOX 124)
Tel: +1 615 494 8918
Email: Moses.Prabu@mtsu.edu

-sent via Outlook Web App

From: Kimberly Ward
Sent: Monday, February 24, 2020 1:29 PM
To: irb_submissions <IRB.Submissions@mtsu.edu>
Subject: Submission for Kaylee Hamby Chittenden's thesis project

Hi Moses –
One of the attachments on my previous submission email was incorrect. The correct ones are all attached here.
Thanks,
Kim Ujcich Ward

From: Kimberly Ward
Sent: Monday, February 24, 2020 1:23 PM
To: irb_submissions <IRB.Submissions@mtsu.edu>
Subject: Submission for Kaylee Hamby Chittenden's thesis project

Attached please find the IRB submission, consent form, survey, and Citi training certificates for Kaylee Hamby Chittenden's master's thesis project. I will be supervising her work on this project.
Kim Ujcich Ward

Kimberly J. Ujcich Ward, PhD, BCBA-D
Professor and Graduate Programs Coordinator
Department of Psychology
MTSU
Kimberly.ward@mtsu.edu
615.898.2188

APPENDIX SECTION – ADDITIONAL PROCEDURAL INFORMATION

- Appendices are labeled A through L
- Complete those apply to your research
- Some appendices are hidden for space consideration. In such cases, please check the appropriate box to request the section to be displayed and submit this form. The IRB PreScreener will unlock the relevant section and send this form back to you.

APPENDIX COVID-19

MANDATORY if the investigators will have direct physical contact with the participants

Complete this Appendix if human subjects participating in this proposed research project may be directly in physical contact with the investigator(s)

1. Identify how and where the participant faces the potential risk for COVID-19 exposure
   There will be NO contact with the participants in this study - all participants will access the survey online. There is NO Covid-19 risk outside their normal, every day activity risk since participants will be accessing the survey online from their home computers or phones.
2. JUSTIFICATION. Explain why you believe the potential exposure to COVID-19 to the subject are so outweighed by the sum of the benefit to the subject and the importance of the knowledge to be gained as to warrant a decision to allow the subject to accept the risks. Discuss the alternative ways of conducting this research and why the one chosen is superior.

3. Describe how you plan to minimize the risk for viral infection

4. What steps do you plan to take prior to the physical interaction?

5. What is your strategy to screen for health condition of the investigator(s) on the day of the prospective research interaction?

6. What is your strategy survey the participants for potential infection?

7. What steps do you plan take in the event an investigator or a participant should test positive for COVID-19?

---------- End of Appendix COVID-19 ----------

APPENDIX G
REQUEST FOR ALTERNATIVE CONSENT PROCESS

Starting from AY 2021, this appendix will be used to provide additional details on various types of consent processes and their documentation. Please complete this appendix if you do not plan to obtain traditional in person informed consent with participant signature.

Under 45 CFR 46.116(d) the IRB may waive the requirement for obtaining informed consent or approve a consent procedure that leaves out or alters some or all of the elements of informed consent, provided that the IRB finds and documents that all of the following four criteria are met:

a) the research involves no more than minimal risk to the subjects;
b) the waiver or alteration will not adversely affect the rights and welfare of the subjects;
c) the research could not practicably be carried out without the waiver or alteration;
d) whenever appropriate, the subjects will be provided with additional pertinent information after participation.

G.0 Type of changes to informed consent:

☒ Web-based informed consent using Qualtrics – Complete G.5
☐ Zoom or Telephone interviews – Complete G.6
☐ Other – Continue to G.1

G.1 Are you requesting a waiver of obtaining informed consent? (i.e., you will not obtain informed consent at all. e.g., observational study and informing participants that they are in a research study would make the research impossible.)

☐ Yes ☐NO

Explain if Yes:

G.2 Are you requesting that physically signed consent forms are not obtained? (e.g., you are conducting research online and cannot obtain signatures; you wish to not obtain signatures to protect the participants, etc)

☐ Yes ☐NO

Explain if Yes:

G.3 Are you requesting approval to alter the consent form such that not all the required elements of consent are included? (i.e., you checked "no" to some elements in the checkbox for informed consent)

☐ Yes ☐NO

Which elements from the informed consent are you seeking to alter or remove?

G.4 If you answered yes to G.1 through G.3, then complete this link:

a. How does the research involve no more than minimal risk?

b. How will a waiver of informed consent not adversely affect the rights and welfare of the participants?

c. Why could the research not practicably be carried out without the waiver or alteration?

d. If appropriate, how will subjects be provided with additional pertinent information after participation?

G.5 Online informed consent:

Refer https://mtsu.edu/irb/FAQ/OnlineDataCollection.php

Describe the process administering informed consent starting with how the participants will access the Qualtrics: The link to the Qualtrics survey will be accessed by student through the MTSU Sona System. The study will be posted on the Sona System and the link will appear in the study description. Once the participants clicks on the anonymous link, the first page that appears is the Consent form. Following the consent are the mandatory questions on the locked consent. The participant must answer affirmative to all consent questions to then access the survey. If they do not answer the items in the affirmative, they are taken to the final "thank you" page and never have access to the survey.

Qualtrics data collection – Mandatory consent requirements:

- *All exclusion inclusion criteria must be clearly disclosed prior to the consent*
- *The first page of the study must be the informed consent form*
- *Consent to participate must be explicitly asked and separate responses must be entertained by clearly indicated boxes to accept or deny*
- *An age-verification question with an active response must be added*

- *The text for informed consent should be provided to the participant as part of debriefing or a follow up email whichever is approved by the IRB*

Visit www.mtsu.edu/irb and click on IRB Forms to download one of the informed consent templates meant for online administration. Based on your which form you downloaded, make a selection below:

☒ Locked online consent template is used
☐ Unlocked free format online consent template is used

The Qualtrics link for administering informed consent provided for IRB review AFTER the link has been tested by the PI. Use the following check list to test the Q

Test the online consent before completing this check list

☒ Yes	The protocol ID, study title, name of PI and faculty advisor (if applicable) and space for approval/expiration dates are provided legibly.
☒ Yes	All inclusion and exclusion requirements are clearly stated and additional click box items are added if necessary
☒ Yes ☐ N/A	Compensation information and adequate disclosure for eligibility are clearly stated and additional click boxes are inserted if necessary
☒ Yes	Contact details for the researchers and the office compliance are provided
☒ Yes	Consent to participant is entertained by two distinct responses
☒ Yes	Age verification of the participant is also done as in the consent question above
☒ Yes	The survey will not begin unless all necessary boxes are clicked
☒ Yes	If a participant fails to consent or ignores one or more of the clickable boxes, then one of the following action is done: ☒ The survey ends and the participant is directed to a "Thank You" page ☐ A good faith reminder is given and the survey will move to debriefing if the participant continues to not click the mandatory boxes
☒ Yes	The survey administered to someone who is not familiar with the study (enter name: another School Psych graduate student) and the time duration for completing the entire survey is compatible with what is displayed in the consent script.
☒Yes	The consent script displayed online is identical to the consent document submitted for IRB review (minor formatting/font changes are allowed)

G.6 Interview by Telephone or Zoom:

Instruction:

a. *Zoom Interview:*
The participants will receive a copy of the informed consent via email. S/he will physically sign and send a scan back to the investigator. Or, the participant will simply write a response text indicating s/he is interested in the study. The PI will go ahead and arrange the zoom meeting. Prior to the interview, the PI will refresh the

participant with the important steps of the study and ensure the participant read the informed consent script sent by email. The PI will then document the informed consent process and store in his/her records.

b. Telephone Interview:
Similar to the Zoom informed consent described above. The participants will receive a copy of the informed consent via email. S/he will physically sign and send a scan back to the investigator. Or, the participant will simply write a response text indicating s/he is interested in the study. The PI will go ahead and arrange the telephone interview. Prior to the interview, the PI will refresh the participant with the important steps of the study and ensure the participant read the informed consent script sent by email. The PI will then document the informed consent process and store in his/her records. The main difference between the Zoom and telephone informed consent is that the latter would be much shorter

Description:

i. Have you read and understand the instructions above?

ii. Do you plan to make any changes to the informed consent process and documentation from what is described above?

iii. How will a consent through Zoom or a telephone call not adversely affect the rights and welfare of the participants?

iv. If appropriate, how will subjects be provided with additional pertinent information after participation?

---------- End of Appendix G (Informed Consent) ----------