

Introduction

It is well established that stress can cause changes in eating patterns in both clinical and non-clinical samples (Schulz & Laessle, 2012; Zellner et al, 2006). Past studies have explored work-injury (Grunberg and Straub, 1992), frustration (Rutter Niewenhuizen, Lemmens, Born, & Westerter-Plantenga, 2008), and social (Laessle & Schulz, 2009) stress on eating behaviours. In light of the effects of stress on eating and the significant relationships that have been reported between attachment styles and eating disorders (O'Shaughnessy & Dallos, 2009), it is worth exploring parental attachment stress in term of its effects on eating behaviours.

The present study aimed to build upon laboratory studies examining the relationship between types of stress and eating patterns, including exam stress as well as attachment stress.

Methods

A laboratory study was conducted with undergraduate women (n=129) from two Ontario universities. Participants were recruited under the guise of critiquing videos for a high school film competition and deception was used to reduce potential biases.

Each participant attended a film viewing session individually and were provided with a variety of foods as a thank you for their assistance with the film competition. The variety of foods was selected to encompass a variety of nutrient contents, textures, and tastes (i.e. salty, sweet, etc.).

The weights of all foods were recorded prior to the participants' arrival. Upon completion of the film, participants completed various measures which included a film evaluation and measures of stress (State Trait Anxiety Inventory- State; STAI-State; Watson, Clark, & Tellegen, 1988).

Participants were then debriefed and informed consent was obtained. Further self-report measures, as well as physical measures (i.e. measurements, height, weight) were taken, and the foods were again weighed to calculate the amount consumed.

Participants who correctly guessed the true intention of the study (n=32) were excluded from the present analysis for a total sample of 97.

Stress Induction

Three videos were created for the purpose of this research; two stress induction videos and one control video. Each video was approximately 45 minutes in length.

Exam Stress (n=30)	Attachment Stress (n=33)	Travel/Control (n=34)
Stress associated with university exams (i.e. time, pressures, etc.)	Stress associated with the mother-daughter relationship (i.e. disappointment, guilt, etc.)	Travel/vacations/relaxation

Results

Participants ranged in age from 17 to 38 (M=19.5) and participant body mass indices (BMI) ranged from 15.92 to 36.99 (M=24.13).

Controls

No significant differences were found between experimental conditions by participant weight, self-reported average weekly exercising, total hours of sleep the previous evening, or retrospective reported hunger upon arrival at experiment.

Efficacy of Stress Induction

Significant effects were found, specifically when comparing scores on the STAI-State between the exam stress condition (M=46.77) and both the attachment stress condition (M=34.03), and the control condition (M=31.29), indicating successful stress induction in the exam stress group.

Eating Behaviours during Experiment

Multivariate analysis of variance (MANOVA) revealed significant differences between conditions with respect to the consumption of various nutrients. Means and standard deviations of nutrients consumed by each condition are presented in Table 1. Between group differences in consumption of various nutrients are presented in Figures 1-3.

Table 1.

Comparison of nutrients consumed between conditions

Dependant Variable	Exam Stress M (SD)	Attachment Stress M (SD)	Control M (SD)
Calories*	322.3 (44.1)	296.5 (42.1)	179.1 (40.9)
Fat (g)	9.2(1.6)	7.2(1.5)	5.7 (1.5)
Protein (g)	6.2 (1.1)	5.9 (1.0)	4.1 (1.0)
Carb. (g)*	54.8 (7.7)	53.0 (7.4)	28.6 (7.2)
Sugar (g)*	28.6 (4.6)	30.2 (4.4)	14.8 (4.3)
Sodium (mg)	94.6 (18.8)	52.1 (17.9)	53.1 (17.4)

*p<.05

Figure 1. Calories consumed by condition

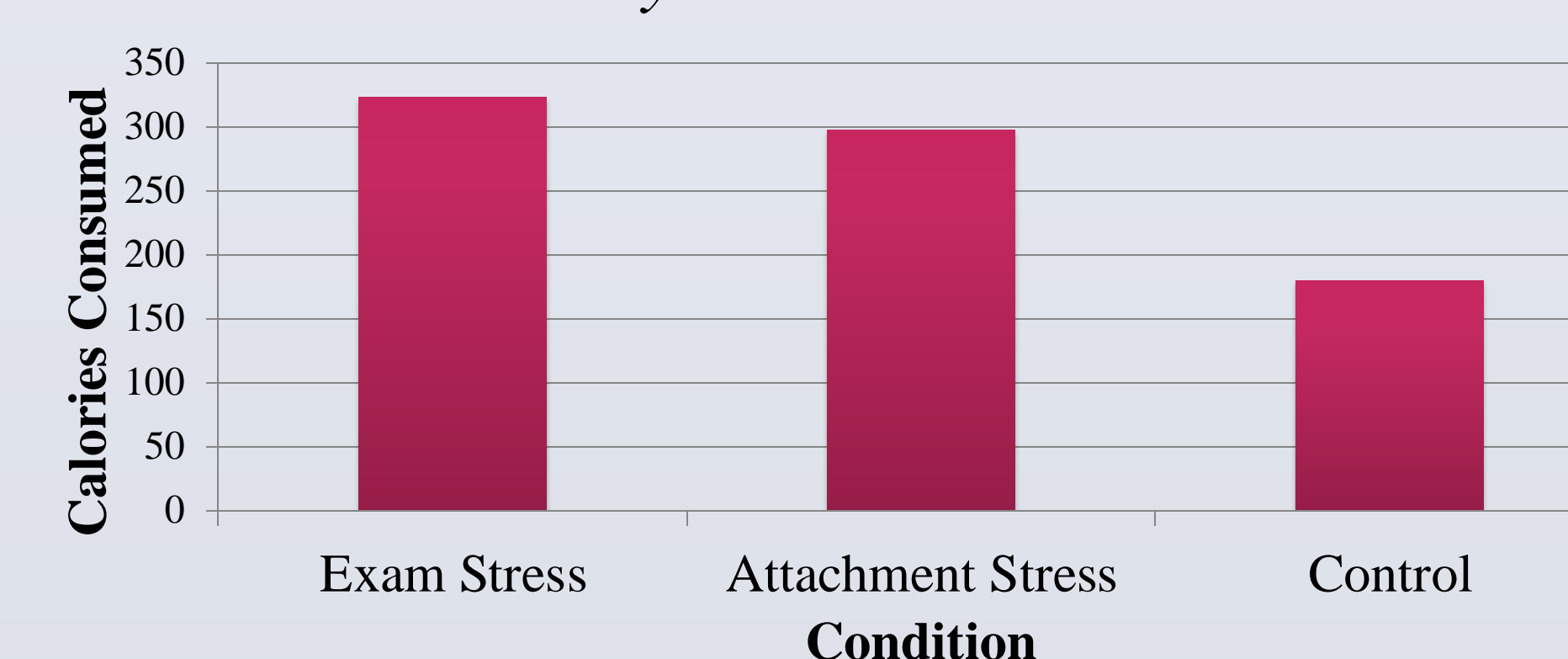


Figure 2. Carbohydrates consumed by condition

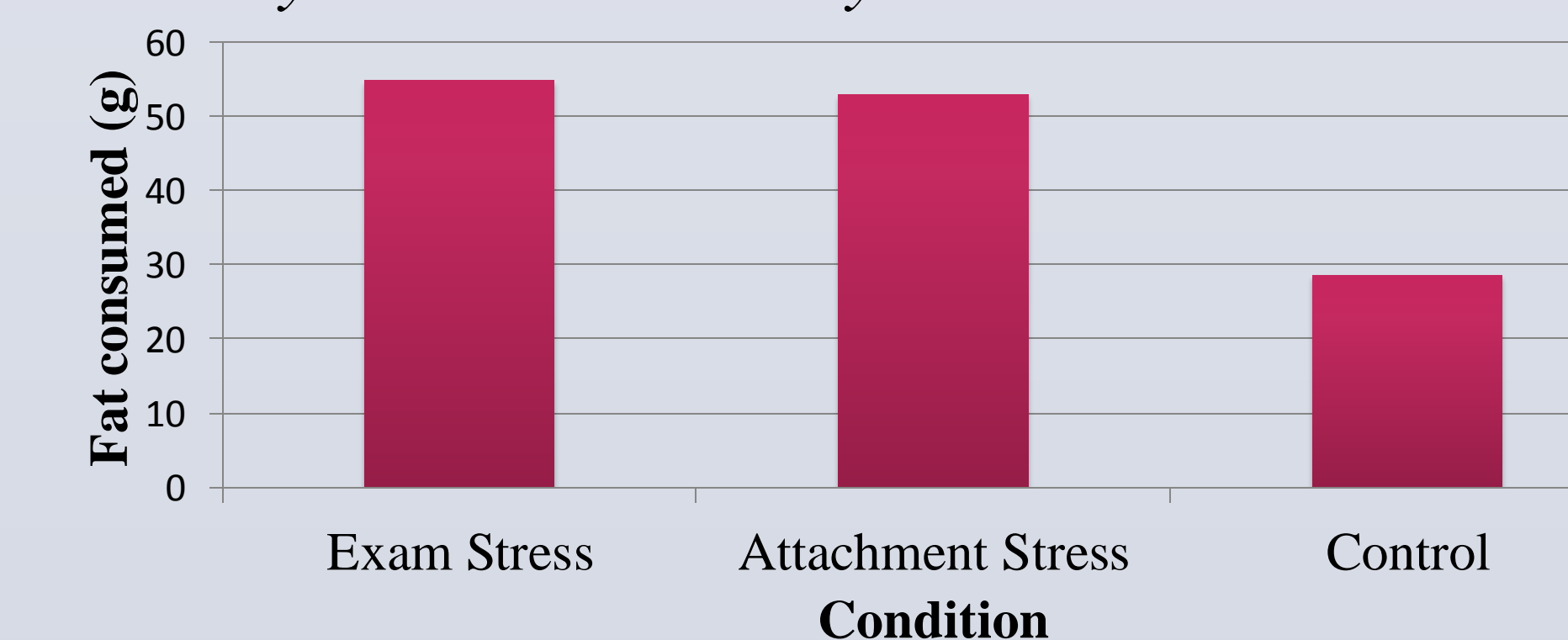
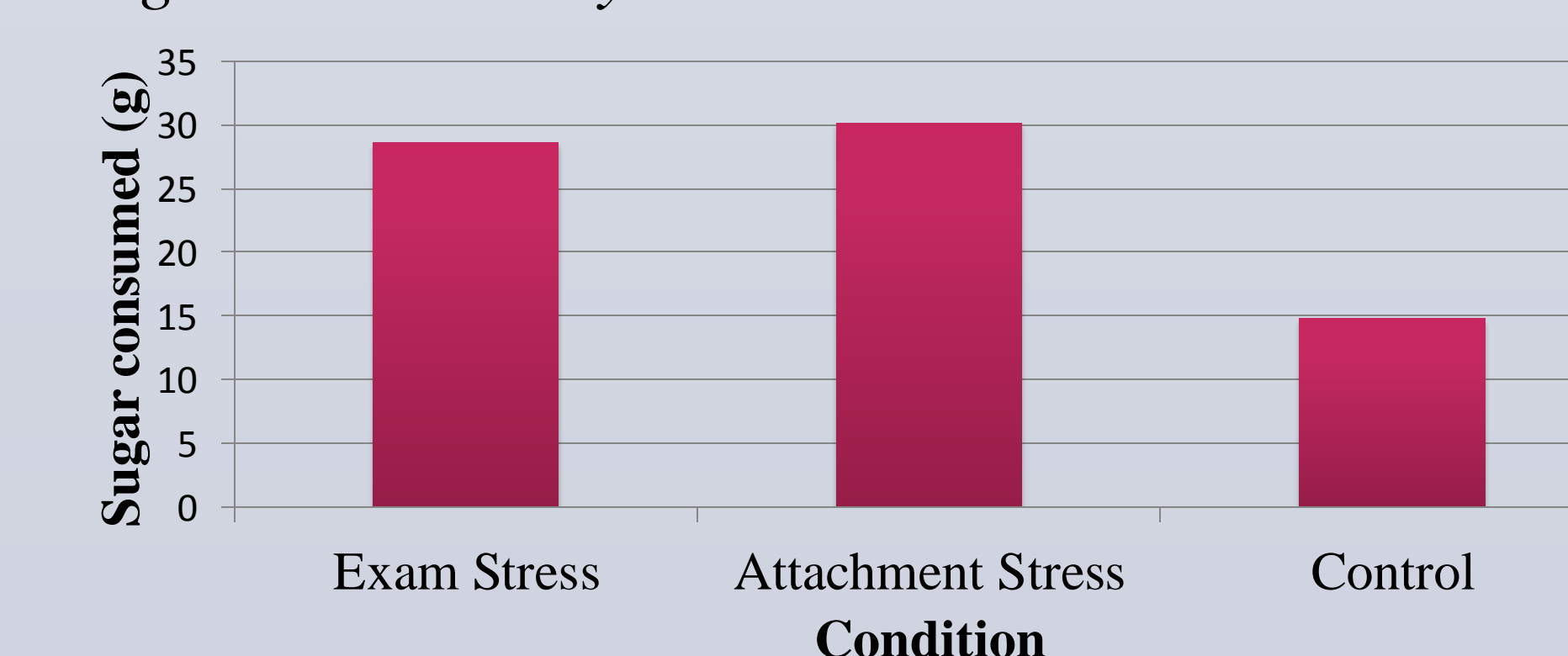


Figure 3. Sugar consumed by condition



Conclusions

In support of the hypothesis, eating behaviours differed as a result of different stressors. Specifically, both the exam stress and the attachment stress condition consumed more of various nutrients than did the control condition. It is possible that different types of stressors induce craving for different food types. Further research should explore differences in food selection and consumption based on different types of stress.

Also of note, although statistically significant differences in stress were not found in the attachment stress group, differences in eating were observed. This demonstrates that perhaps it is not stress per se that is responsible for eating changes in this group, but an unexplored variable, such as depression.

More research into the factors that mediate changes in eating in response to parental attachment themes is required in order to better understand this phenomenon and its relationship to eating disorders.

References

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