Pass the Chicken Tenders: Impacts of External Eating Cues on College Students' Food Consumption

Katherine Hoppe

While people are often well-educated on the nutritious aspects of healthy eating, they are generally unaware of the fact that external cues (e.g. eating with others or in the presence of media, such as TV) lead to greater consumption of food. Additionally, preparing and eating food with other people often aids students in making more nutritious food choices. College students must therefore be made more aware of the effects that their eating contexts have on their food consumption, and should be encouraged to prepare and eat food with other students.

For many students, college is a time in which they are thrust into experiencing much greater independence in their lives. One of the areas in which this is true is in their eating choices—what they eat, where, when, and with whom (SC). Many researchers who have explored the dietary habits of college students from a myriad of angles have shown that college students generally do not have healthy eating habits. This is unsurprising to most people, including college students, who are hounded by talk of the "freshman fifteen." Yet, while students are often aware of the most nutritious dietary options to improve their diet, they are commonly uneducated on the specific effects of the context in which they eat (SQ). In fact, when assessing food intake, people tend to give little weight to the external cues that impact intake. However, research shows that the context in which people eat—whether they eat in the presence of others, or media, and the origin of the food—does in fact have an effect on the amount, the type, and the enjoyment of the food consumed (DC). Context impacts the physical and mental health of students. Generally students incur the greatest benefit when eating food with and prepared alongside other students (C/B). Therefore, college students must be made more aware of the effects that their eating contexts have on their food consumption, and should be encouraged to prepare and eat food with other students.

People tend to be unaware of how great an effect external factors can have on their food intake. A number of studies reveal that people often believe that "internal cues" or "nutritious cues" (level of hunger or the perceived nutritious value of food) are more impactful than "external cues" (the presence of other people, or distractions, such as TV) on the choices that are made about food intake (Vartanian, Herman, & Polivy, J., 2016). The general public does not assign sufficient value to external cues. In one study, in which participants were asked to predict the amount of food someone will consume based on a given scenario, they displayed a clear bias towards internal cues. In other words, people tend to believe that hunger or appearance of food plays a larger role in food intake than external factors, such as the presence of other people, do. However, if this bias is present, people "may underestimate how much food they or other people will eat in many situations, particularly when normative [i.e. external] cues promoting eating are present" (Vartanian et. al., 2016, abstract). When people are unaware of the effects that external cues have on their food intake, they are less able to compensate for these effects (warrant). In a similar study, participants were asked to rate how relevant different situational factors were to "appropriate food intake." For example, to what degree, on a scale from 1 to 7, does the level of hunger determine the appropriate food intake? Analysts found that participants ignored virtually all external cues "despite evidence indicating that perceptions of how much is an appropriate amount to eat are affected by external eating cues" (Vartanian, Reily, Spanos, McGuirk, Herman, & Polivy, 2017, abstract). It appears that people are generally unwilling to admit that external cues can and do affect food intake. Whatever these effects are, whether positive or negative, if students are unaware of the effects that external cues can have on their actions, they will be unable to adjust consumption or eating context accordingly.

It is important to not only be aware of the fact that external cues have a noticeable effect on one's food consumption, but to also know what these effects are. Knowing these effects allows one to have the proper response to

[Back to Table of Contents]

them (warrant). One important external factor that affects food consumption is the presence of distractions, such as media or television, when eating, which generally leads to unhealthful food consumption. In a study done of approximately 1000 college students in the Twin Cities, Laska, Hearst, Lust, Lytle, & Story, M. (2015) found a strong positive correlation between eating in front of the television and consuming sugar-sweetened beverages and fast food (p. 2140). It is generally agreed that these foods and beverages have less nutritious benefits than vegetables and fruits. Analysts also monitored how many fruits and vegetables participants consumed. A similar study monitored the energy intake of participants in several different situations. First, they were asked to eat a meal alone without distractions from a buffet. This was used as the baseline to which other values were compared to. In subsequent sessions they were asked to eat from the same buffet, but with different external factors—with friends, strangers, and a TV. The study shows that each of these external factors increases the average energy intake of the participants, where eating with strangers has the smallest overall increase. Increased energy intake means not only a greater consumption of food, but consumption of higher calorie foods, such as cake and rolls, rather than lower calorie foods, namely salad. Interestingly, the male participants were much more affected by the presence of the TV than the female participants were. Additionally, the results of monitoring the attention cues of the participants revealed that they paid the least attention to the food when the TV was present, meaning they were least aware of the amount of food they consumed in this situation (Hetherington, Anderson, Norton, & Newson, 2006, pp.501-503). These are among many studies which describe the negative nutritional effects of eating in front of the television. These effects are likely already general knowledge. What may be more surprising to students, however, is the effects of the presence of other people on students' consumption of food.

Numerous studies on the effects of eating with other people yield assorted results. These tend to vary based on the relationship between the people eating, but, in general, people consume a greater overall amount of food when eating with other people than when eating alone (without the presence of distractions like TV). This is seen in the study done by Hetherington et al. (2006) in which participants had a higher energy intake when they ate with other people, whether those people were strangers or friends, than when they were alone (p.501). Additionally, a study done by Nakata & Kawai (2017) displays that "'social' facilitation of eating" leads to greater enjoyment of food, and therefore greater consumption. Researchers analyzed both young and elderly participants as they ate popcorn alone in front of a monitor and a mirror. When eating in front of the mirror, both age groups consumed more food and indicated a greater enjoyment of the food (pp.26-27). This study shows that eating even in the subconsciously perceived presence of another person leads to greater enjoyment of food. Both of these studies support the hypothesis that the presence of others eating leads to greater consumption of food. Herman (2015) agrees with this in his review of numerous studies done on the topic. One of these studies concludes that eating with others caused an average 44% increase in food consumption (p. 62). It is important to note that in each study participants only increased the amount of food they ate when accompanying parties were also eating. Additionally, Herman explains that researchers find that there is not a faster rate of food consumption, but rather a longer duration, when others are present. These are important factors for college students to be aware of when attempting to modify their eating habits.

This greater consumption of food in the presence of others could be used to argue that the best option for college students would be to eat alone, without distractions (CA). However, this is not the case because the benefits of eating with others can outweigh the costs, especially when students are made conscious of their choices (R). These benefits include increased corporate behavior and group work activity, as seen in research done by Kniffin, Wansink, Devine, & Sobal (2015). They conducted a series of interviews and surveys in firehouses across a city, investigating the cooking, eating, and corporate behaviors of firefighters. Firefighters are required to work long shifts living in close quarters together, so, in a majority of firehouses, workers cook and eat together at least three or four times during a four-day tour. Kniffin et al. (2015) found a positive correlation between communal eating and effective group work and corporate behavior, with an even stronger correlation when firefighters cooked together (p. 294). In other words, cooking and eating together helps individuals perform better in a group and fosters positive social interactions among them. This can be applied to college students, because the living and working conditions of college students are not unlike those of firefighter: they live, work and eat in community (warrant). This can be especially beneficial for increasing roommate cooperation, but could also be applied to friend groups and the numerous students required to complete group projects. If a friend, roommate, or classroom group has the possibility to cook together it will likely benefit their interactions

and productivity together. This is not possible for some students, though, especially underclassmen who have limited access to kitchens, but even these students can benefit from eating meals together. The benefits of cooking homestyle meals and eating together for specifically college students are seen in a study done by Ball & Brown (2012) about "dinner groups" on the campus of Brigham Young University. These dinner groups are self-organized groups of students that would cook for one another and eat together at least 4 dinners a week. The study of these groups reveals, like the Kniffin et al. (2015) study, that eating together leads to improved relations among participating individuals. In fact, both studies include participants mentioning that eating the homestyle meals together creates a "family" atmosphere (Kniffin et. al., 2015, p.290. Ball & Brown, 2012, p. 32).

Additionally, despite the fact that eating with others generally leads to greater food or energy intake, studies show that eating with others leads to more nutritious food intake. The study of dinner groups reveals that preparing food for one another and eating together leads to "eating more home-cooked meals and more fruits and vegetables. Students also mentioned increased motivation to eat healthfully"(Ball & Brown, 2012, p.32). Eating with others can cause greater intake of nutritious food. These findings align with the results of the Hetherington et. al. (2006) study. Participants ate more salad when they ate with strangers or friends than the other two situations. Therefore, although students may consume more food in general when eating with others, they should still be encouraged to do so because of the fact that they will likely eat more nutritious food. This is especially true when students eat home-cooked food that they, or those they are eating with, have prepared. Among other studies (Pachucki, Karter, Adler, Moffet, Warton, Schillinger, … O'Connell, (2018)), the Laska et. al. (2015) study reveals a correlation between nutritious food intake and home meal preparation. In fact, "...all three facets of food preparation (more frequent meal preparation at home, preparation of one's own dinner, preparation of meals with vegetables)... remained significantly associated with a greater consumption of fruits and vegetables"(p. 2138). Because of this, in addition to being encouraged to eat together, students should be encouraged to prepare their own meals, or eat food prepared by friends, if it is possible. This could be done most effectively through the dinner group models seen in Ball & Brown (2015) in which students only had to cook food a few times a month, but were still able to consistently participate in the dinner groups (p. 31).

This idea that eating with others improves nutrition in students' meals could be refuted by a study done on participants from the Diabetes Study of Northern California (DISTANCE). In this study, Pachucki, Karter, Adler, Moffet, Warton, Schillinger, D., … O'Connell (2018) investigated an extensive group of people and found no real correlation between eating with others and more nutritious or healthful food consumption (p. 207) (CA). However, in Pachucki's (2015) study, the mean age of participants was 63.3, while the previously mentioned studies were conducted on young adults. This means that either age or living situation may lead to difference in factors that affect food consumption, so the results from Pachucki's (2015) are not necessarily valid in the current discussion (R). Further studies should be conducted on specifically college students in the area of effects of eating with others to solidify this hypothesis.

In conclusion, college students need to be made more aware of the effects of their eating contexts. Currently, the general population is largely uninformed about the ways in which the presence of other people or the location where they eat affects them. These effects include higher energy intake, greater amounts of nutritious foods eaten—namely fruits and vegetables—and improved teamwork and community relations. Students should be taught of these effects and should be encouraged to eat and prepare food with one another. If they are aware of the effects they can reap the benefits, such as improving relations with other people by intentionally eating with them. However, if they are not aware, they will continue to consume more food than is actually necessary for them. More research should also be done to better understand how eating context effects specifically college students. College is a time in which lifelong habits are established, so these habits should be as beneficial to students as possible.

References

Ball, B., & Brown, L. B. (2012). Qualitative Description of College Students' Dinner Groups. *Journal of Nutrition Education & Behavior*, 44(1), 29–35. https://doi.org/10.1016/j.jneb.2011.04.008

Hetherington, M. M., Anderson, A. S., Norton, G. N. M., & Newson, L. (2006). Situational effects on meal intake: A comparison of eating alone and eating with others. *Physiology & Behavior*, 88(4/5), 498–505. https://doi.org/10.1016/j.physbeh.2006.04.025

Herman, C. P., (2014). The social facilitation of eating. A review. *Appetite*, 86, 61-73. https://doi.org/10.1016/j.appet.2014.09.016

Kniffin, K. M., Wansink, B., Devine, C. M., & Sobal, J. (2015). Eating together at the firehouse: How workplace commensality relates to the performance of firefighters. *Human Performance*, 28(4), 281–306. https://doi.org/10.1080/08959285.2015.1021049

Laska, M. N., Hearst, M. O., Lust, K., Lytle, L. A., & Story, M. (2015). How we eat what we eat: Identifying meal routines and practices most strongly associated with healthy and unhealthy dietary factors among young adults. *Public Health Nutrition*, 18(12), 2135–2145. https://doi.org/10.1017/S1368980014002717

Nakata, R., & Kawai, N. (2017). The "social" facilitation of eating without the presence of others: Self-reflection on eating makes food taste better and people eat more. *Physiology & Behavior*, 179, 23–29. https://doi.org/10.1016/j.physbeh.2017.05.022

Pachucki, M. C., Karter, A. J., Adler, N. E., Moffet, H. H., Warton, E. M., Schillinger, D., … O'Connell, B. H. (2018). Eating with others and meal location are differentially associated with nutrient intake by sex: The diabetes study of Northern California (DISTANCE). *Appetite*, 127, 203–213. https://doi.org/10.1016/j.appet.2018.03.020

Vartanian, L. R., Herman, C. P., & Polivy, J. (2016). What does it mean to eat an appropriate amount of food? *Eating Behaviors*, 23, 24–27. https://doi.org/10.1016/j.eatbeh.2016.07.002

Vartanian, L. R., Reily, N. M., Spanos, S., McGuirk, L. C., Herman, C. P., & Polivy, J. (2017). Hunger, taste, and normative cues in predictions about food intake. *Appetite*, 116, 511–517. https://doi.org/10.1016/j.appet.2017.05.044