

An intervention to reduce night eating among UNC-CH undergraduate students

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Background

- Weight gain in college is a common problem¹
 - About 4 lbs weight gain on average²
- Night eating may significantly contribute³
 - snacks and meals consumed during evening and early morning hours

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Targeted Key Determinants of the Behavior

Individual + Interpersonal determinants of night-eating behavior⁴:

1. Binge drinking
2. Social pressure
3. Stress

Community Level determinants:

1. Chapel Hill food environment @ night



Logic Model

Resources

Educational
- UNC facebook groups & social media.
- UNC video studio

Environmental
- Takeout Central & Dining facilities

Activities

Educational
- Replace food center social events.
- Decrease binge drinking
- stress busters

Environmental
- Make healthy food more available

Outputs

Programs
- Social media video campaign

Policies
- Increase late-night healthy foods at CDS.
- Tarheel takeout incentives.

Outcomes

Knowledge: understand how night eating leads to wt. gain


Skills: give strategies to avoid night eating

Environment: make healthy foods more available on an off campus

Impacts

Primary: students choose healthier foods at night [health behavior modification].

Secondary: reduce rates of students overweight or obese [improve health outcomes]



Intervention Period: one semester

Educational Intervention:



Our social media educational campaign will model students making healthy late-night choices that will reduce night eating by promoting:

- drinking water with alcoholic beverages to reduce overall alcohol intake
- stress management through physical activity versus eating
- social activities that are not centered around dining out.



Intervention Period: one semester

Environmental Changes

- Increase the availability of healthy foods at late-night dining facilities
 - i. Work with campus dining services to have “healthy” snack machines that require at least **2 “healthy” items** approved by the Campus Dining Services Nutritionist.
- Promote healthy foods on food-ordering services such as Takeout Central
 - i. Incentivise restaurants by listing them as healthy partners (free advertising).



Evaluation: general methods and goals

Measurements: Baseline Fall 2016 Intervention Period: Fall 2017

Primary endpoint: the reduction of individual's overall caloric intake at night (7PM to 5AM), as measured by self-reported frequency * and

Secondary endpoint: changes in the amount of healthy items purchased at night, as measured by purchasing data from Takeout Central and UNC dining services **

* A sample of students will be followed by taking several surveys during the semester

** Dining services sale records stripped of financial and personal data

Evaluation: measuring outputs and outcomes

Measuring process outputs:

1. Are you aware of the campaign aimed to reduce late time eating?
2. How would you rate on a scale from 1 (lowest) to 5 (highest) availability of healthy food choices.

Measuring outcomes:

1. How many times did you engage in night eating (snacks or meals consumed during late evening/early morning) within last month?
2. From Takeout Central ordering data: average caloric amount of transactions from 9PM to 5AM.

Limitations

- **Reach:** intervention through social media will only reach those who use it regularly (90% of 18-29 year olds)
 - Not complete, but good enough
 - Could address in future with expansion of educational materials administered not through social media (buses, blackboard)
 - Still relies on students purchasing healthy items, low SES students (who are at highest risk of poor diet) may not be able to afford them
- **Adoption:**
 - Knowledge-only approach only influences one component of behavior; additional incentives would encourage more adoption
- **Response Bias:**
 - Self-reported measures may lead to embellishment of results (people underestimate intake by 10-15%⁵) (can be somewhat mitigated by tracking of purchases at CDS facilities)
 - Unsuccessful participants may not respond to final survey, resulting in over inflated success ratings among survey respondents (mitigated with baseline data and missing data analysis)

Conclusion

- Synergistic effects through combination of educational and environmental interventions
 - Information provided by social media campaign will **change behavioral attitudes** towards night eating
 - Community-level environmental changes will **increase perceived efficacy** and enable students to more easily change behavior
- Single-semester timeframe enables **regular program adaptation and reevaluation**

References

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