

The Effects of Mindful Eating Education on Increasing Satiety Signals

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Introduction

Mindful eating is a practice that incorporates focusing on thoughts, emotions and sensations within the body. The alteration of the satiety signaling from the GI tract has been linked to the development of obesity. Satiety is defined as a state of fullness where there is no longer an intake of food. Mindful eating techniques could help college students identify their hunger and satiety signals and respond to those cues instead of detrimental environmental or psychosocial cues that could lead to over-eating. Currently, there has not been sufficient research examining the impact of mindful eating education on satiety signals. Giving mindful eating education has the possibility to help people recognize their satiety signals and stop eating sooner.

Purpose

To examine the effects of mindful eating education on increasing satiety signals.

Methods

Participants were recruited from Loma Linda University by word of mouth, flyers, and emails.

The study consisted of 25 participants (Table 1):

- 6 males and 19 females
- Ages 18-30
- 20% followed special diet, 80% did not

• Procedure:

Visit 1 -

- Subjects ate their meal as normal
- Subjects informed investigators when they felt full. Time to satiety and time subjects finished their meal was recorded.
- Subjects filled out the satiety questionnaire

Visit 2 -

- Subjects were given brief mindful eating education
- Subjects then followed same protocol as Visit 1

Visit 3 -

- Subjects were asked to fill out a follow-up survey on change in their diet behavior

- **Instruments:** satiety questionnaire, follow-up survey, and mindful eating educational material

- **Satiety Questionnaire:** questions on demographics, current nutrition habits, and feelings of fullness.

- **Follow-up Survey:** questions on participants being aware of satiety cues, and changes in portion sizes.

- **Mindful Eating Education:** participants were given tips such as asking yourself if you are truly feeling hungry, noticing reactions to food, savoring food, slowing down to eat meals for at least 20 minutes, and consider the steps it takes to bring food from the farm to your table.

Mindful Eating Education

Be aware of your body and your mindset.

Ask Yourself, “Am I....”

- Physically hungry? (on a scale from 1 to 10)
- Eating slowly or quickly?
- Dining in-the-moment- Am I mindlessly munching or noticing each bite?
- Multi-tasking, or truly focused on this meal or snack?
- Bored, stressed, tired, anxious, angry, sad, etc?

Mindful Eating Tips:

- Take a breath and ask yourself, “Am I truly hungry”, before you reach for food
- Begin practicing mindfulness. Start by eating one meal a day in a slower, more aware manner.
- Focus on eating. Avoid doing other activities while you eat (working, talking on the phone, etc.)
- Seat a timer for 20 minutes and take the whole time to eat the meal.
- Eat silently for 5 minutes. (think about what it took to produce that meal, from the sun and water, to the farmer, to the grocer, to the cook).

Table 1. Frequency (%) of Demographic Characteristics within Sample Population (N=25)

Demographic Characteristics	Frequency (%)
Age	
18-25	16 (64)
26-30	9 (36)
Gender	
Male	6 (24)
Female	19 (76)
Special Diet Followed	
Yes	5 (20)
No	20 (80)



Table 2. Mean (SD) of Satiety and Meal Completion (min) Pre and Post Mindful Education (N=25)

	Mean (SD)	P-value
Satiety:		
Satiety time visit 1	14.1 (6.4)	0.459
Satiety time visit 2	14.5 (6.6)	
Meal Completion:		
Meal completion time visit 1	16.1 (6.8)	0.737
Meal completion time visit 2	14.9 (6.8)	
Meal Completion Time Minus Satiety Time:		
Meal completion visit 1 - Satiety time visit 1	2.0 (3.1)	0.008
Meal completion visit 2 - Satiety time visit 2	0.3 (0.8)	

P-values were calculated based on Wilcoxon signed – rank test; SD- standard deviation

Table 3. Significance of Follow-Up Survey and Pre-Questionnaire Responses by Diet Type, Age and Gender

	Diet Type P-value	Age P-value	Gender P-value
How have you changed the rate at which you eat after participating in this study?	0.170 [^]	0.783	0.059 [^]
If so, did the rate at which you eat increase or decrease?	0.062	0.830	0.019
What have you learned from this mindful eating study?	0.133	0.023	.218
Do you prepare your own food?	0.383	0.768	0.031[^]

P- values were calculated based on χ^2 test unless otherwise indicated; [^]p- values calculated based on Fisher exact test.

Results

- No significant difference was found comparing satiety time during visit 1 and visit 2 (P-value = 0.459) (Table 2)
- No significant difference was found when comparing the meal completion time during visit 1 and visit 2 (P-value = 0.737) (Table 2)
- There was a significant difference when satiety time was deducted from meal completion time and compared between visit 1 and visit 2, statistical significance was found (P-value = 0.008) (Table 2)
- A significant association was found between age and response to: What have you learned from this mindful eating study? (P-value = 0.023) (Table 3)
- A significant association was found between gender and response to: Do you prepare your own food? (P-value = 0.031) (Table 3)
- Of the participants, 68% stated they have not changed the rate at which they eat after participating in this study. However, 92% stated they are more aware of satiety and hunger cues after participating in this study.

Conclusion

- Mindful eating can potentially be used as an intervention to increase satiety signals.
- Mindful eating may help people be more aware of satiety and hunger cues.
- Further research is warranted with a larger sample size and longer duration to observe other possible significant outcomes, and to establish appropriate amounts and duration of mindful eating education.

References available upon request.