

Apr 20th, 11:00 AM - 2:00 PM

Effects of Olfactory Sense on Chocolate Craving

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Firmin, Michael W.; Gillette, Aubrey; and Hobbs, Taylor E., "Effects of Olfactory Sense on Chocolate Craving" (2016). *The Research and Scholarship Symposium*. 30.

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Literature Review

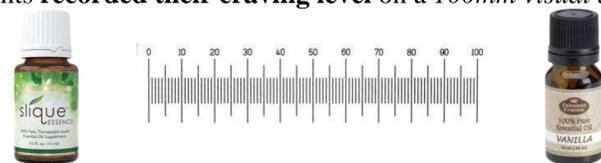
- People *crave* **sweet, carbohydrate-rich foods** and in recent history, **sugar** has increasingly been considered as an *addictive agent* (Avena, Rada, & Hoebel, 2008; Christensen, 2007).
- The word *addiction* first appeared in an 1890 health journal in reference to **chocolate** (Davis & Carter, 2014).
- Jáuregui-Lobera et al. (2012) studied the relationship between *mental imagery* and **craving**, and found that **chocolate is one of America's most-craved foods**.
- In a previous study, Kemps and Tiggemann (2013) assessed the role of the *olfactory sense* on *craving*, and determined that the smell of *methyl acetate* (a neutral scent) **decreased** participants' *cravings* for both savory foods and chocolate foods.

Hypotheses

1. Researchers hypothesized that a *fresh scent (Slique™ Essence)* would **decrease** participants' *cravings* for chocolate foods.
1. Researchers also hypothesized that a *sweet scent (vanilla)* would **increase** participants' *cravings* for chocolate foods.

Method

- **93 female** undergraduate students were recruited from Physical Activity and Christian Living and General Psychology courses at a conservative Midwestern University.
- **12 digital photographs** were presented for *five seconds* each on a projector screen in a lecture classroom, and participants were instructed to *smell* a scent during the *eight second retention period* that followed each photo. The three conditions were: **Slique™ Essence essential oil** (a citrimint blend by Young Living), **vanilla essential oil**, and **no scent**.
- Three groups were presented the photographs in a counterbalanced order.
- Participants **recorded their craving level** on a *100mm visual analogue scale*.



Results

- A **multiple regressions ANOVA** was conducted, and the results were significant: ($F(2, 22) = 73.813, p < .001$).
- Both hypotheses were **supported**:
 1. The sweet scent (vanilla) **increased** *craving* levels
 1. The fresh scent (Slique™ Essence) **decreased** *craving* levels. This occurred across the four types of chocolate foods presented in the study, as seen in Table 1 below.
- A slight *order effect* occurred between the three groups, (**Group 1**: Control, Sweet, Fresh; **Group 2**: Fresh, Control, Sweet; **Group 3**: Sweet, Fresh, Control). Overall, each group had a *similar response pattern*, as seen in the bar graph below.

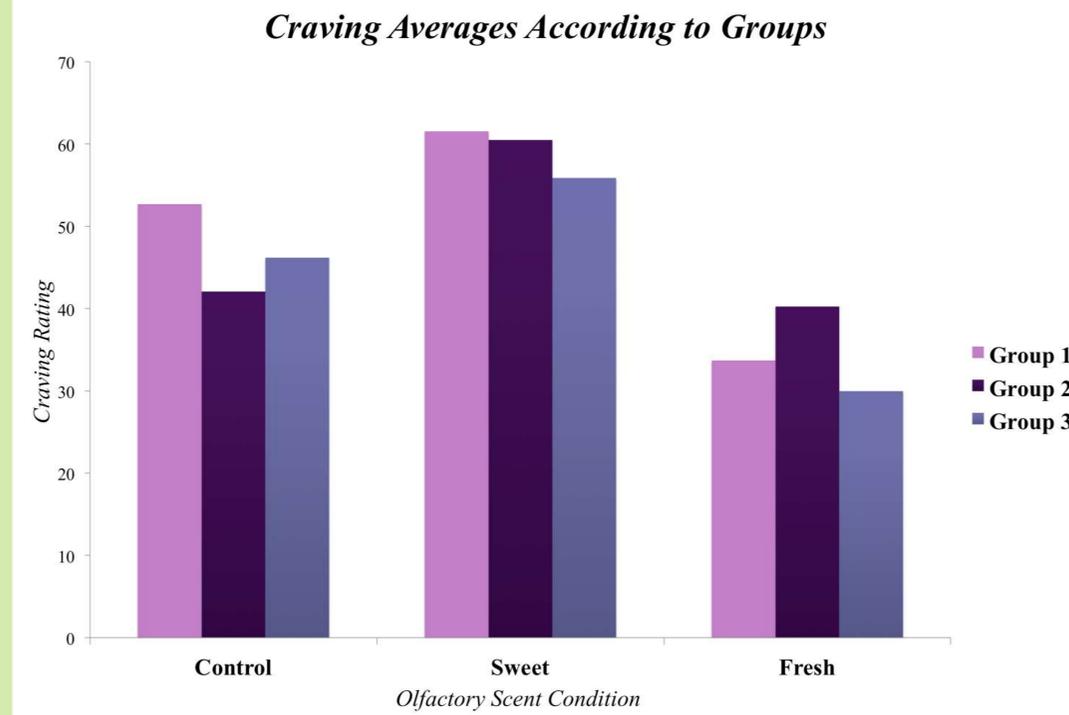


Table 1
Means and standard deviations for food craving ratings for the three scent conditions.

	Total		Cake		Muffin		Ice Cream		Brownie	
	M	SD	M	SD	M	SD	M	SD	M	SD
Control	46.97	6.67	47.07	24.99	43.32	21.55	46.01	25.83	50.33	25.43
Sweet	59.31	4.85	57.82	23.13	56.90	20.35	59.46	24.17	62.42	24.57
Fresh	34.65	4.79	36.02	22.28	33.08	23.36	35.09	24.97	33.96	25.44

Discussion

- The present findings are in agreement with the study being replicated: the **olfactory sense** has an impact on **craving levels**.
- This information has implications for *health professionals, women seeking weight loss, and the general public*.
 - **Health professionals**: Mental health clinicians and practitioners may use this knowledge of scents to alter their treatment plans and intervention strategies for their clients. Although Slique™ Essence is not currently subject to medicinal or prescriptive use, it appears that it is a *helpful tool* in *decreasing one's craving for chocolate foods*. Since Slique™ Essence essential oil is intended to be ingested, it may be capable of *even stronger effects* than the mere inhalation of the scent.
 - **Women seeking weight loss**: Those trying to lose weight may find it helpful to know what scents they should and should not be surrounding themselves with. *Sweet scents* may hinder weight loss attempts, while *fresh scents* may be particularly **supportive** in curbing unwanted *cravings*.
 - **General public**: Individuals are **susceptible** to the stimuli that surrounds them, whether that be images of **chocolate** or other appetitive foods. It is important to be aware of these stimuli and *acknowledge* that scents have the power to increase or decrease one's craving for those particular foods.

References

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