REPEATED CUE EXPOSURE EFFECTS ON SUBJECTIVE AND PHYSIOLOGICAL INDICES OF CHOCOLATE CRAVING

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ABSTRACT & INTRODUCTION
Abstract

- **The Point:**
  - To see if the effects of unreinforced chocolate cues in people reporting chocolate cravings

- **Measurement:**
  - Self Report & Saliva

- **Session Time Frame:**
  - 1-3 Days

- **Results:**
  - A decrease in chocolate cravings in the experimental group, no changes in the control group
The purpose of the study was to find ways to reduce chocolate cravings as they may be unwanted or become harmful when considering binge eating

- Important to gain insight into the craving process to develop ways to reduce cravings

A reason chocolate is appealing:

- Combination of sugar and fat
- Chocolate substitutes don’t “cure” chocolate cravings

Chocolate may make you feel better, but it’s short lived and is shown to prolong poor moods when it’s consumed for comfort.
The Introduction, con’t.

- Why cravings?
  - Unlike alcohol dependency and binge eating, cravings aren’t psychiatrically conflicted
- Chocolate cravings were shown in both Spanish and American women
  - Though pre-menstrual cravings were mainly an American thing
- Does mood play a factor in cravings?
  - Of course! But the study couldn’t manipulate moods to show this in a significant way
METHODS; PART ONE
Participants

- Recruited based off of questionnaire which was given to 355 students
- Questionnaire labeled “Chocolate Cravers”
  - “Bad” at postponing a chocolate craving
  - “Would Like” to gain control over their chocolate craving
  - “Difficult” to gain more control over chocolate craving
- 58 recruited
- All female
- Psychology students from the University of Leuven
- 20-24yrs old
Measures

- Chocolate Craving was measured by
  - Subjective Report
    - Online Scale 0-100 (No craving to extreme craving)
    - Self Report
      - “How strong is your craving for chocolate at this moment?”
      - Asked to rate craving every time they hear a tone (every 30 seconds for 2 minutes)
      - The mean was taken for the 4 tone scores for analysis

- Saliva Secretion
  - Measured normal amount of saliva by weighing amount of saliva absorbed by rolls of cotton before and after application to the mouth.
  - Participants were shown where and how to place the cotton in the mouth and how to remove it.
Procedure

- 2, 1 hour sessions
- 1-3 days in between sessions
- No coffee 3 hours prior to sessions
- No chocolate or candy 24 hours prior to sessions
- Participant chose preferred brand of chocolate
- Mood manipulations were also tested to see if it had an effect on cravings, however, there were no significant results.
METHODS; PART TWO
Session One

- Participants filled out
  - Informed consent
  - Biological questionnaire
  - PANAS Scales
- Baseline salivation measurement was taken
- First exposure to chocolate they were allowed to see the chocolate for 27min, reported craving online and salivation was measured
- Then allowed to see (30s), touch (30s) and smell (1min)
- Given a small taste of chocolate
- Participants repeated online survey and salivation was measured
Session One, con't.

- Film fragments were shown followed by four exposure trials
- Measurements were alternated online scale then cotton swab
- Then film fragments and four exposures were repeated
- Last trial lasted 10min (9 min. constantly smelling the chocolate, with a tone probing for online craving every 30s)
- The session consisted of 10 cue exposure trials, 5 salivation measures and 5 online craving measures
- At the end of session the PANAS was re-administered
Session Two

- This session was similar to session one
- Differences
  - Participants were presented with both negative and positive movie clips
  - PANAS scales were administered before the second clip
Control Group

- Session similar to first except the participants only received exposure to chocolate at the beginning and the end of the session
Data analysis

- A 2x2x3 (group x session x trial) ANOVA was preformed on the amount of saliva secreted and on the online craving scores.
- The experimenters followed up with planned comparisons to check for effects of exposure within and between sessions in both groups.
DISCUSSION
Discussion

- Participants were exposed to chocolate in two consecutive sessions with the purpose of extinguishing the cued cravings

- Measuring the cravings:
  - Reporting own subjective cravings
  - Saliva
Experimental Group Results

- Cravings not reduced in single session
- Diminished overall from the beginning to end of sessions
- Diminished between sessions

- There was a significant decrease in craving chocolate from session one to session two for the experimental group (the group that was exposed to chocolate during each trial in a session) for self report and a marginally significant decrease for salivation amount.
Control Group Results

- No reduction between sessions
- Cravings increased within session
- Cravings increased from beginning to end of sessions

- Control group self reported no change in craving chocolate from session one to session two and their salivation amount did not see any difference across session one and two.
What does this tell us?

- A cue-exposure manipulation was effective in reducing subjective craving in the experimental group and not in the control group... in other words...
- Exposure based therapy works to reduce chocolate cravings!!!
However...

- Previous studies, for example fear cues, have implied that there is an initial increase in fear reactions, and then a decrease is seen.
Why were the outcomes different for exposure to chocolate?

- There is a goal to decrease fear when using exposure based therapy, but there was no specified goal during the chocolate exposing sessions. It is possible that the participants were expecting to receive chocolate at the end of the session leading to an increase in within session craving.

- Another possible explanation may be the short duration of the experiment, only lasting 20 and 28 minutes. In another study it was found that craving only extinguished after half an hour of exposure in binge eaters.