Development and Psychometric Characteristics of the Chocolate Craving Inventory
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Introduction
Chocolate, harvested from a cocoa tree (Theobroma cacao) originates from Mexico. Today, chocolate is one of the most commonly craved substances, particularly among women (Bruinsma & Taren, 1999; Hormes & Timko, 2011; Osman & Sobal, 2006; Rozin et al., 1991). These cravings are defined by a strong “urge” or “want”, often accompanied by persistent, inconvenient actions at attainment (Hormes & Rozin, 2009).

The Attitudes to Chocolate Questionnaire (ACQ; Benton et al., 1998) is one of the few known reliable and valid measures for assessing chocolate craving. Other craving scales have been adapted to measure chocolate, such as the Food Cravings Questionnaire- Trait (FCQ-T; Cepeda-Benito et al., 2000).

Current Study
This study focused on the initial development of a measure of chocolate craving that included three important components of problematic and emotional craving:

• psychological and physiological dependence (e.g., changes in mood, withdrawal)
• interference with daily functioning (e.g., going out of one’s way to get chocolate)
• loss of control when eating (e.g., intense cravings, eating despite being full)

The Chocolate Craving Inventory (CCI; Whitham & Reynolds, 2014) was initially a 36-item measure developed to assess the three domains listed above. The CCI items are evaluated on a 4-point scale, from very like me to very unlike me. The current investigation is a pilot study to examine the reliability and validity of the CCI in a college sample.

Method

Participants and Procedure
The sample consisted of 100 students at a rural state college, 62 female, 24 male and 14 missing information. Participants completed a survey packet with the CCI and other measures in exchange for extra credit in an undergraduate psychology course. A subsample of 20 participants retook the survey one week later to provide evidence of test-retest reliability.

Instrumentation
After participants filled out the CCI they completed the following measures to assess convergent and discriminant validity:

Food Cravings. The 15-item Food Cravings Questionnaire-Trait-revised (FCQ-T-r; Meule et al., 2014) was used.

Depression. The 9-item short form of the paper-and-pencil version of the Hamilton Depression Inventory (HDI; Reynolds & Kobak, 1995) was used.

Extraversion. Extraversion was measured by a 20-item Extraversion Scale (Goldberg, 1999).

Results

Item Analysis and Reliability
Based on item-total scale correlations, six items with $r_{it} < .30$ were dropped, resulting in a 30-item scale. The internal consistency reliability for the 30-item CCI was $\alpha = .96$ and the one-week test-retest was $r_{tt} = .86$.

Validity
Table 1 shows correlations between the CCI and other measures. Evidence for convergent validity is shown by a moderate relationship between the FCQ-T-r and the CCI. Evidence for discriminant validity was demonstrated by a low relationship between the CCI and extraversion. The relationship between the CCI and depression was also low.

Table 1: Intercorrelations and Reliabilities

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. CCI</td>
<td>.96</td>
<td>.45*</td>
<td>.09</td>
<td>.02</td>
</tr>
<tr>
<td>2. Cravings</td>
<td>.95</td>
<td>.11</td>
<td>.17</td>
<td></td>
</tr>
<tr>
<td>3. Extraversion</td>
<td>.95</td>
<td>.40*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Depression</td>
<td></td>
<td></td>
<td>(.92)</td>
<td></td>
</tr>
</tbody>
</table>

Note. Values in parentheses are alpha reliabilities. *p < .01

Discussion
The current investigation yielded high internal consistency and test-retest reliability for the 30-item CCI. A moderate correlation between food cravings and the CCI provided evidence for convergent validity. A low relationship between the CAS and extraversion supports discriminant validity.

As expected, women had higher scores on the CCI than men, ($t = 3.06, p = .003$). Inconsistent with chocolate craving literature, a low relationship to depression was found. These findings could be due to sample characteristics. Future studies will further assess validity of the CAS in a non-college sample.

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