Individual Differences in Perceived Influence of Maintaining a Food Diary on Eating Behaviors
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Introduction
Food diaries are the most accurate and unbiased measure of dietary intake in humans (Crawford, Obarzanek, Morrison, & Sabry, 1994; Krantzler et al., 1982). However, the self-monitoring needed to complete a diary might alter eating behaviors (Mossavar-Rahmani et al., 2004; Zepeda & Deal, 2008).

- Keeping food diaries encourages weight loss for dieters (Streit, Elci, Sereika, Styn, & Burke, 2011).
- Food diaries allow individuals to closely follow dietary guidelines (Acharya, Elci, Sereika, Styn, & Burke, 2011).

Food diaries could be useful for intervention.
- Perceptions about the effectiveness of food diaries for influencing eating behaviors may affect willingness to maintain food diaries long and accurately enough to allow for potential health benefits.
- If people do not believe keeping a diary will positively affect their behaviors, they may be less willing to keep one.

However, few studies have examined perceptions of food diary use, or individual differences in these perceptions.
- Gender, age, education, and social status may be related to willingness to complete or perceived usefulness of food diaries (Jørgensen, 1992).

The Current Study
There are three primary aims of the current study:
1. Examine the extent to which individuals believe keeping a food diary is useful for improving dietary habits
2. Examine the extent to which individuals believe keeping a food diary is useful and reasons why
3. Examine individual differences related to these beliefs

Methods
Thirty-four college students participated in a one-week diary study documenting names, types, and amounts of all foods/dinks consumed.

Data from 23 participants (13 females; 21.2 – 47.4 years old; M = 26) who completed all seven days of the diary is included.

After completing the one-week diary, participants rated:
- The extent to which they thought keeping the food diary influenced their eating/drinking behavior.
  - “How much do you think a food diary influenced your eating/drinking behavior?”
    - 1 = Not at all, 5 = Very Much
  - “In what way did keeping a diary influence your eating/drinking behaviors?”
    - Open-ended

- How much they thought the diary was useful
  - “Do you think keeping a food diary was a useful tool?”
    - Yes/No
  - “If so, in what way?”
    - Open-ended

BMI (kg/m²) were calculated based on self-reported height and weight. Approximately 4% of the sample was underweight, 65% were normal weight, 22% were overweight, and 9% were obese (Centers for Disease Control and Prevention, 2011).

Results
Aim 1: A one-sample t-test found that participants believed keeping a diary influenced their eating/drinking behaviors, t(22) = 6.07, p < .001.

<table>
<thead>
<tr>
<th>Reason for Influence</th>
<th>Example</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influence due to new awareness</td>
<td>“I think it really has impacted my behavior now that I see how irregular my eating habits are.”</td>
<td>22%</td>
</tr>
<tr>
<td>Influence due to laziness/ time constraints</td>
<td>“I may have eaten less because of the time it took to document all the food I consume.”</td>
<td>13%</td>
</tr>
<tr>
<td>Influence due to desire for health</td>
<td>“I think it impacted my thinking… I wanted to make sure that I was at least having one healthy meal a day.”</td>
<td>13%</td>
</tr>
<tr>
<td>Influence due to undescribed reason</td>
<td>“It made me want to eat less.”</td>
<td>9%</td>
</tr>
<tr>
<td>No influence/ No response</td>
<td>“I ate as normal.”</td>
<td>43%</td>
</tr>
</tbody>
</table>

Aim 2: 52% of participants believed keeping a diary was useful.

<table>
<thead>
<tr>
<th>Reason for Influence</th>
<th>Example</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Useful for increasing awareness of eating habits</td>
<td>“I became aware of how I mistreat my body with all the junkfood.”</td>
<td>13%</td>
</tr>
<tr>
<td>Useful for dealing with feelings related to food</td>
<td>“It is very cathartic. Especially when someone has had food-related issues in the past.”</td>
<td>4%</td>
</tr>
<tr>
<td>Useful for keeping track of foods eaten</td>
<td>“I like seeing on paper what I have eaten. It makes me think more about what I am eating.”</td>
<td>22%</td>
</tr>
<tr>
<td>Useful for changing future eating habits</td>
<td>“It allowed me to see what I actually consumed on a daily and weekly basis. It was an eye opener and I plan to make some changes because of it.”</td>
<td>13%</td>
</tr>
<tr>
<td>Not useful/ No response</td>
<td>“I ate as normal.”</td>
<td>48%</td>
</tr>
</tbody>
</table>

Aim 3: Ratings of how influential keeping a diary was on eating/drinking behaviors tended to be negatively related to income and education (Table 3).

<table>
<thead>
<tr>
<th>Correlations Between Beliefs About the Food Diary and Demographics</th>
<th>Influential</th>
<th>Useful</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>-0.36†</td>
<td>-0.09</td>
</tr>
<tr>
<td>Income</td>
<td>-0.35†</td>
<td>-0.08</td>
</tr>
<tr>
<td>Age</td>
<td>0.30</td>
<td>-0.09</td>
</tr>
<tr>
<td>BMI</td>
<td>-0.29</td>
<td>-0.05</td>
</tr>
</tbody>
</table>

Note. †p < .10

Females believed keeping a diary a food diary influenced their eating/drinking behaviors more than males, t(21) = 2.52, p = .02 (Figure 1). Females also thought keeping a diary was more useful than males, z(1, N = 23) = 3.49, p = .006 (Table 4).

Discussion
Many participants believed keeping a food diary was useful (52%) and that it influenced their eating behaviors (57%).

Individuals believed keeping a food diary influenced their eating/drinking behaviors due to time constraints, a newfound awareness of their eating habits, and a desire for health changes.

Individuals believed keeping a food diary was useful for increasing awareness of eating habits, keeping track of foods eaten, improving eating-related affect, and changing future eating habits.

These findings are important for future research because:
- Food diaries may be biased accounts of dietary intake.
- Research using food diaries to assess intake should consider new methods for assessing intake, such as using partner diaries to supplement self-reports.
- Food diaries may be useful for interventions focusing on improving dietary habits.

Interventions using food diaries to promote healthy development may be more beneficial for females.
- Females may be more willing to maintain a diary due to their perceptions of its influence on eating/drinking behaviors.

In contrast, individuals with higher incomes and education may be less influenced by food diaries.
- The beneficial aspects of maintaining a diary may not supersede the time-consuming nature of this task for individuals with higher incomes and education.
- Individuals with lower incomes may engage in more unhealthy eating, which may be more influenced by keeping a food diary.

Future research should investigate long-term effects that temporary food diaries may have on eating behaviors.

References


