Menu quality and food substitution in early care and education (ECE) programs: the FRESH study

DK Patel1, SB Sisson1, K Sleet1-2, R Rickman1-3, C Love4, T Taniguchi5, VB Jernigan5

1Dept. Nutritional Sciences, University of Oklahoma Health Sciences Center, Oklahoma City OK
2 University Medical Center, Lubbock, TX
3Department of Nutritional Sciences, College of Natural Sciences, University of Texas at Austin, Austin, TX
4School of Health Care Administration, Oklahoma State University, Tulsa, OK
5Center for Indigenous Health Research and Policy, Oklahoma State University, Tulsa, OK

Methods

• Baseline assessment in FRESH; menus and recipes collected from 9 sites
• Nutrient analyses was conducted and a quantitative index used for CACFP compliance score (0-100)
• Food substitutions: equivalent (equal nutrition quality), superior (higher quality) or inferior (lower quality) and summed.

Conclusions

• Menus failed to provide two-thirds of the daily requirement for fiber and energy.
• More than 10% of total calories came from saturated fat and protein content was too high as compared to the requirement.
• Sodium content on menus was double the requirement while added sugars were within the limit.
• Menus were fairly compliant with the CACFP guidelines however, there is a room for improvement.
• Foodservice personnel training may enhance nutritional quality of meals and substitutions.

Fig. 1 Compliance with the Child and Adult Care Food Program (CACFP)

Fig. 2 Substitution quality (%)

Introduction

• Children consume two-thirds of dietary intake at Early Care and Education Programs
• Challenges: rural location and reduced food access
• Child and Adult Care Food Program (CACFP) reimburses providers for serving nutritious meals to children.
• Menu evaluation determines dietary quality of the food and opportunities for improvement in the Native American community

Purpose

Determine nutrient content, Child and Adult Care Food Program (CACFP) compliance, food substitution to assess menu quality in tribally-affiliated ECE programs.

Table: Nutrient on menus

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Mean nutrient content on menus</th>
<th>Two-third requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiber</td>
<td>3.5 ± 0.5 g</td>
<td>12-16</td>
</tr>
<tr>
<td>Saturated fat</td>
<td>10.5 ± 3.4 g</td>
<td>&lt;10% of total calories</td>
</tr>
<tr>
<td>Energy</td>
<td>643.7 ± 106.6 Kcal</td>
<td>666-1067</td>
</tr>
<tr>
<td>Protein</td>
<td>29.7 ± 4.4 g</td>
<td>9-12.6 g</td>
</tr>
<tr>
<td>Added sugar</td>
<td>2.7 ± 1.4 g</td>
<td>&lt;10% of total calories</td>
</tr>
<tr>
<td>Sodium</td>
<td>1046.53 ± 255.8 mg</td>
<td>533-666</td>
</tr>
</tbody>
</table>

Conclusions

• Menus failed to provide two-thirds of the daily requirement for fiber and energy.
• More than 10% of total calories came from saturated fat and protein content was too high as compared to the requirement.
• Sodium content on menus was double the requirement while added sugars were within the limit.
• Menus were fairly compliant with the CACFP guidelines however, there is a room for improvement.
• Foodservice personnel training may enhance nutritional quality of meals and substitutions.

Acknowledgements

We would like to acknowledge the participants in the study and Osage Nation. This study was funded by the National Institute on Minority Health and Health Disparities (R01MD011266). Support was provided by the Department of Nutritional Sciences and the Center for Indigenous Health Research and Policy.