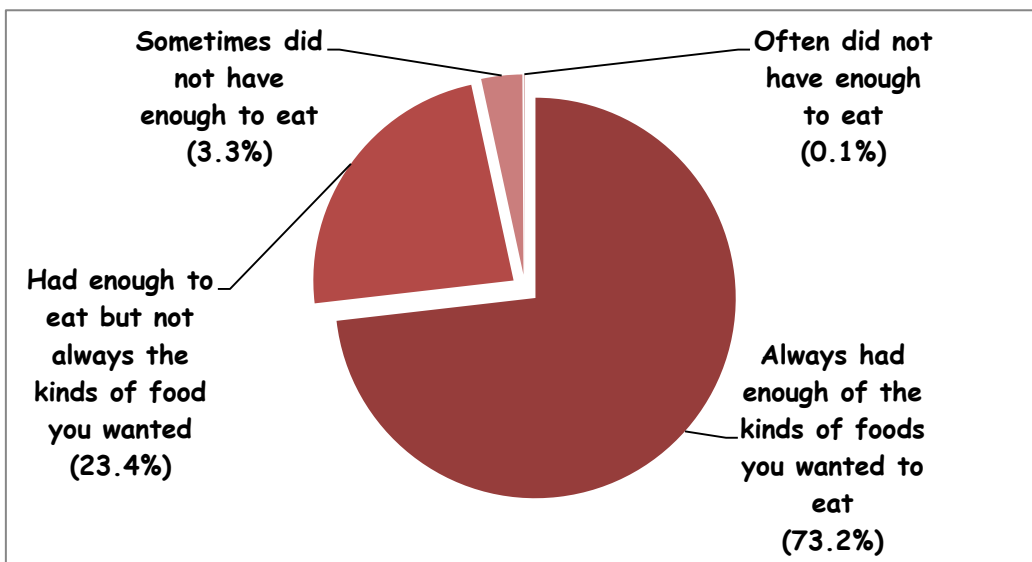


Food insecurity is defined as the lack of access to adequate food due to lack of money and other food resources.¹ Food insecurity is associated with negative health outcomes for women and children. Children growing up in food insecure households are more likely to have poor health,² higher levels of iron deficiency resulting from reduced nutrient intake,³ and higher probability of illness leading to increased emergency room and hospital visits.² Children in food insecure households are also more likely to have lower levels of parent-child attachment, lower cognitive scores, and experience more developmental delays than those living in food secure households.⁴ The Healthy People 2020 (HP2020) objective is to reduce very low food security among children to 0.2 percent.⁵

Labels of Food Insecurity were changed by the USDA in 2006 to the following: “**Low food security** (old label=Food insecurity without hunger) includes reports of reduced quality, variety, or desirability of diet. Little or no indication of reduced food intake.”⁶ In contrast, “**Very low food security** (old label=Food insecurity with hunger) includes reports of multiple indications of disrupted eating patterns and reduced food intake.”⁶ This brief assesses the level of food insecurity among Missouri households with two-year-old toddlers from the MoCHAPS survey, 2010 - 2013.

Figure 1. Food Security Status of Missouri Households with two-year-olds, MoCHAPS (2010-2013)

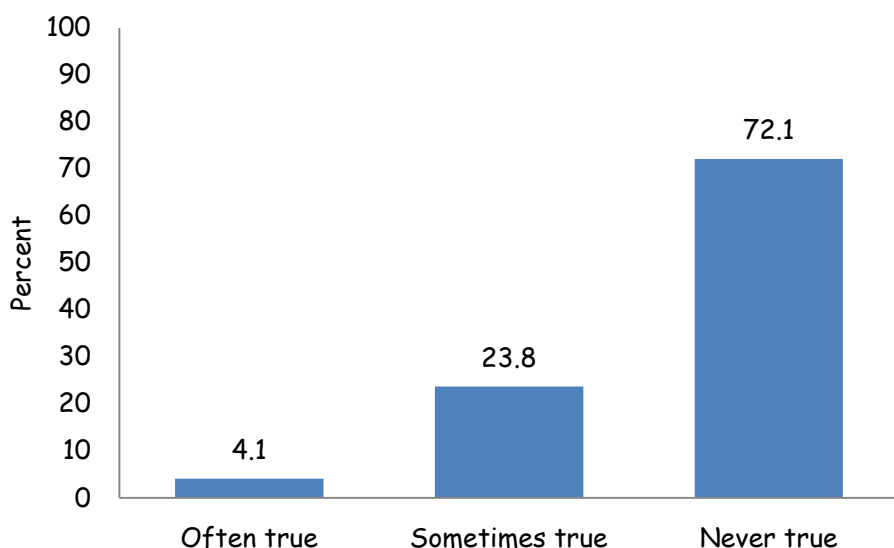


When respondents were asked, “Which best describes the food eaten in your household in the past 12 months?”, most Missouri mothers responded that they “always had enough of the kinds of foods they wanted to eat” (73.2%), “had

enough to eat but not always the kinds of food they wanted” (23.4%), or “sometimes did not have enough to eat” (3.3%). Very few mothers (0.1%) reported that “they often did not have enough to eat” (Figure 1).

In response to the question, “In the past 12 months, were you worried that food would run out before you got money to buy more?” most Missouri mothers said, “Never true” (72.1%), “Sometimes true” (23.8%) or “Often true” (4.1%). Those who answered “Never true” were classified as ‘food secure; those who responded “sometimes true” and “often true” were classified as being “low food secure” and “very low food secure,” respectively (Figure 2).

Figure 2. Worry about running out of food before obtaining money to buy more, MoCHAPS (2010-2012)



Based on answers to the two questions used to assess food insecurity, the overall prevalence of food insecurity among Missouri households with two-year-old toddlers was approximately 27 percent for the years 2010-2013. Of these, approximately 4 percent can be identified as having very low food security (Appendix 1).

Very low food security was most common among the following:

- Mothers under 20 years of age (8.3%)
- African Americans (8.2%)
- Unmarried mothers (7.4%)
- Medicaid enrolled children (6.9%)
- Children with low birth weight (7.0%)

In 2013, responses to additional questions about food access revealed that 8.6 percent of Missouri mothers with toddlers received food from a church, food pantry, food bank or food kitchen. Approximately 10 percent reported that they ate less than they should have because there wasn't

enough money to buy food. Over one fourth of Missouri toddlers are living in food insecure households, though less than 5 percent are classified as very low food secure. The prevalence of food insecurity is higher in Missouri than the national average of 21.1 percent.⁷ This demonstrates the need for early identification of women and children in food insecure households as they interact with the health care system through hospitals, emergency rooms and other public health venues. Addressing this issue early is likely to alleviate the food insecurity-related adverse health outcomes that are most likely to develop in the life courses of Missouri mothers and their toddlers.

References:

1. Andersen SA. Core indicators of nutritional state for difficult-to-sample populations. *J Nutr.* Nov 1990;120 Suppl 11:1559-1600.
2. Cook JT, Black M, Chilton M, et al. Are food insecurity's health impacts underestimated in the U.S. population? Marginal food security also predicts adverse health outcomes in young U.S. children and mothers. *Adv Nutr.* Jan 2013;4(1):51-61.
3. Skalicky A, Meyers AF, Adams WG, Yang Z, Cook JT, Frank DA. Child food insecurity and iron deficiency anemia in low-income infants and toddlers in the United States. *Matern Child Health J.* Mar 2006;10(2):177-185.
4. Hernandez DC, Marshall A, Mineo C. Maternal depression mediates the association between intimate partner violence and food insecurity. *J Womens Health (Larchmt).* Jan 2014;23(1):29-37.
5. U.S. Department of Health and Human Services. Healthy People 2020. *Nutrition and Weight Status.* <http://www.healthypeople.gov/2020/topics-objectives/topic/nutrition-and-weight-status>. Accessed December 28, 2015.
6. Coleman-Jensen A, Gregory, C., and Singh, A. Household food security in the United States in 2013 (Economic Research Report No. 173). In: U.S. Department of Agriculture ERS, ed. Washington DC 2014.
7. Family Resources and Health Care Cost 2014 National Health Interview Survey (NHIS) – Child. www.childhealthdata.org/browse/survey/results?q=3407&r=1. Accessed January 13, 2016.

The Missouri Child Health Assessment Program Survey (MoCHAPS) is a two-year follow-up to the Missouri PRAMS survey. MoCHAPS was developed in 2007 and has since been conducted annually except for 2009. The objective of the survey is to assess the health of Missouri's toddlers and their quality of life from birth to two years of age. The data gathered can help inform health policy and guide maternal and child health programs to utilize resources more efficiently. MoCHAPS asks questions about health access, child care, nutrition and physical activity, immunizations, breastfeeding, health conditions, injury, safety, exposure to secondhand smoke, breastfeeding and many other topics.

Mothers who responded to the PRAMS survey are the target population. The MoCHAPS survey is sent when their children are about two years of age. MoCHAPS collects data through three mailed survey batches, a total of approximately 1,000 surveys each year. For 2010-2013, the average weighted response rate was 50.0% ($n = 1694$). MoCHAPS data are weighted to be representative of all Missouri moms with two-year-old toddlers.

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MoCHAPS Brief
 Food Insecurity in Missouri Households
 Missouri Child Health Assessment Program Survey (MoCHAPS)

Appendix 1.

Maternal and Child Characteristics by Food Security Status
 MoCHAPS (2010-2012)

Maternal Characteristics	Food Security	Low Food Security	Very Low Food Security
Overall	72.1	23.8	4.1
Age			
Under 20 years	57.8	33.9	8.3
20 to 29	68.4	27.1	4.5
30 years +	80.3	16.9	2.8
Race/Ethnicity			
White	74.4	22.2	3.4
African American	63.8	28.0	8.2
Education			
Less than High School	59.1	37.3	3.6
High School or equivalent	59.0	35.6	5.4
More than High School	80.3	15.9	3.7
Marital status			
Married	80.5	17.5	2.1
Other	58.6	34.0	7.4
Residence			
Urban	75.0	21.2	3.8
Rural	63.2	31.9	5.0
WIC status			
WIC enrolled	52.7	42.0	5.3
Not WIC enrolled	79.7	16.7	3.6
Medicaid status			
Medicaid enrolled	53.7	39.4	6.9
Not Medicaid enrolled	82.9	14.5	2.5
Birthweight			
<2500g	60.8	32.2	7.0
≥2500 g	73.0	23.2	3.8
General Health*			
Excellent or very good	74.8	21.2	3.9
Good	60.2	32.0	7.7
Fair or poor	24.2	60.5	15.2
Weight status*			
Underweight	75.7	19.6	4.6
About the right weight	74.3	21.8	3.9
Overweight	44.6	40.1	15.3

*Mother reported in 2011 & 2012 only.

Based on answers to the question, "In the past 12 months, were you worried that food would run out before you got money to buy more?"