**Research Brief** 

## Attitudes, Beliefs, and Barriers Related to Milk Consumption in Older. Low-Income Women

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## ABSTRACT

**Objective:** To determine attitudes, beliefs, and barriers related to adequate milk consumption in lowincome women ages  $\geq 60$  years.

Methods: Nine focus groups were conducted with a convenience sample of 59 women at congregate meal sites in a metropolitan area. Grounded in Social Cognitive Theory, focus group questions were used to explore personal, behavioral, and environmental factors associated with milk consumption.

**Results:** Key response themes indicated a positive attitude for the taste of milk (except for low-fat), a primary belief that milk was important for bones and health, and a primary barrier of gastrointestinal side effects.

Conclusions and Implications: Knowledge regarding the benefits of milk and the dislike of its taste were not the primary reason for the lack of consumption. Instead, gastrointestinal side effects seemed to be the major barrier to adequate consumption. Future nutrition campaigns should test strategies for lactose intolerance management when communicating with low-income older women.

Key Words: low-income population, milk, older adults, women, calcium (J Nutr Educ Behav. 2014;46:554-559.)

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## **INTRODUCTION**

Milk and milk products contribute significant amounts of calcium, vitamin D, magnesium, potassium, phosphorus, vitamin  $B_{12}$ , riboflavin, and vitamin A to the diet.<sup>1,2</sup> According to the Dietary Guidelines for Americans (DGA), calcium, vitamin D, and potassium, all nutrients found abundantly in fluid milk, are current nutrients of public health concern.<sup>2</sup> However, many Americans, especially older females, are not consuming adequate amounts of milk and milk products in their diet.<sup>2</sup> Specifically, women age  $\geq$  50 are drinking only an average of 0.5 cups/d, and the proportion of adults ages  $\geq$  50 years who drink fluid milk has significantly decreased over time.<sup>1</sup> As a related consequence of inadequate milk and milk product consumption, < 10%

of women > 51 years of age are meeting the recommended amount of calcium per day.<sup>3</sup>

Adequate consumption of milk and milk products, especially lowerfat versions, and/or calcium intake has been previously associated with the reduced risk of osteoporosis, high blood pressure, stroke, and some cancers in older adults.<sup>4-8</sup> With the number of adults age  $\geq$  65 years expected to grow to 20% of the population by 2030,9 attention to health care and quality of life has become a pressing issue. Steps to prevent and manage disease through non-pharmacological interventions for older adults, such as improvements in diet quality, are now even more urgent.<sup>2</sup> These concerns are further escalated in populations (eg. low-income) who tend to have lower-quality diets<sup>10</sup> and therefore

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are at a disproportionate risk for chronic diseases.<sup>7,11</sup>

Dislike for the taste of milk, selfperceived lactose intolerance, concern for fat content, lack of knowledge, and lack of concern for meeting calcium needs are reasons cited for why adult women are not consuming the recommended amount of milk and milk products each day.<sup>12-14</sup> Inadequate milk and milk product consumption may also be related to barriers stemming from one's culture and community.<sup>15</sup> To better comprehend the reasons why older, low-income women do not consume adequate milk and milk products, Bandura's Social Cognitive Theory<sup>16</sup> provides a framework for understanding the interaction of behavior, personal factors, and the environment.<sup>17</sup> Furthermore, researchers have noted that addressing an individual's attitude and belief systems is important, particularly in regard to milk and milk product consumption.<sup>14,18</sup> Accounting for attitudes, beliefs, and barriers surrounding milk and milk product consumption in older, low-income women may help provide a more complete picture of their decision-making process regarding consumption of these foods.

Previous data related to milk and milk product consumption habits in

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older adults have been collected using questionnaires.<sup>12-14,18</sup> Although this method is cost-effective and frequently used, a qualitative approach such as the use of focus groups provides an opportunity to elicit thoughtful responses through open-ended questions that may not otherwise be captured in a questionnaire.<sup>19</sup> Focus groups are a key example of formative research, which can be instrumental in developing an effective campaign or intervention.<sup>19</sup> In preparation for a future social marketing campaign, focus groups were conducted with low-income women age  $\geq 60$  years to determine the overarching attitudes, beliefs, and barriers regarding milk and milk consumption based on personal, behavioral, and environmental factors. Although cheese and yogurt were not completely excluded from the study, the main objective was to focus on fluid milk because (1) consumption patterns of milk and milk products has changed over time with less fluid milk but more cheese being consumed<sup>20</sup>; (2) fluid milk (low-fat or non-fat) is lower in sodium and saturated fat, and therefore more nutritious than cheese; and (3) ample time was needed to focus on and understand behaviors related to 1 milk or milk product because reasons for inadequate consumption may vary across foods or beverages.

### **METHODS**

#### Participants and Recruitment

A convenience sample of low-income women age  $\geq 60$  years was recruited from 7 congregate meal sites in an Indiana metropolitan area during the summer, 2010. Recruitment sites were included only if they also were previously approved Supplemental Nutrition Assistance Program-Education eligible sites, based on the population attending or living at congregate meal locations. The authors selected this target population because preliminary research indicates that women age  $\geq 51$  years are more likely to have diets lacking in calcium and are more likely to take a calcium supplement than their younger adult counterparts.<sup>3,21</sup> Once women expressed interest in participating, they were contacted by

## Table 1. Focus Group Questions

#### **Personal factors**

Why do you drink milk?
Is there anything that ever prevents you from drinking milk?
Do you have any specific health concerns related to drinking milk?
Do you have any specific health concerns related to not drinking milk?
Behavioral factors
What beverages do you drink most often?
When do you typically drink milk?
Do you use milk in other ways in addition to drinking it by itself?
Environmental factors
Do your friends or family drink milk?
Do you make your own meals?
Is milk available during your meals to drink?

phone to schedule a time for the focus group. Inclusion criteria for the study were: female and minimum age of 60 years, participation in a congregate meal program and/or residence in low-income apartment housing, and ability to speak English. The Purdue University Human Subjects Institutional Review Board deemed this study exempt. Informed consent was not required as part of this exemption.

Do you have any problems with milk spoiling?

## Procedures

The authors developed a set of 11 focus group questions (Table 1) to explore personal, behavioral, and environmental factors related to milk and milk product consumption, based on the key constructs of Bandura's Social Cognitive Theory (SCT).<sup>16</sup> Questions reflected personal factors (eg, health concerns), behavioral factors (eg, beverages frequently consumed), and environmental factors (eg. availability of milk) that have been previously related to milk consumption in adults and were included in a previous formative research study targeting the same audience.<sup>12,13,18,21</sup> The 3 interacting domains of SCT (personal, behavioral, and environmental factors) have been recognized in explaining human behavior<sup>17</sup> and were a focus of previous research exploring factors associated with calcium and milk and milk product intake.<sup>22,23</sup> Additional questionnaires were used to quantify attitudes toward the taste of milk and milk products (Table 2) and general demographic characteristics. The interviewer read these questionnaires aloud at the beginning of each focus group.

Using the focus group facilitation techniques of Krueger and Casey,<sup>19</sup> an experienced focus group moderator led each group and another researcher assisted the moderator in taking notes. Focus groups were audio-taped. Each participant received a small gift as an incentive for her time, worth < \$10. After the ninth focus group, the primary researcher or focus group moderator determined that saturation was met, as indicated by the repetition of key responses and the lack of new information reported during the latter focus groups.

#### Data Analysis

Focus group audio tapes were transcribed verbatim by 1 team member and verified by the lead researcher (A.M.). The study team, consisting of 4 members, independently analyzed the transcripts using the classic analysis strategy with standard word processing software, as described by Krueger and Casey.<sup>19</sup> Question response themes were coded and summarized for frequency among focus groups by each team member. Overarching themes related to milk and milk product consumption were derived from the transcripts. Once all transcripts were analyzed, the study team convened to discuss common findings and confer major response themes specific to beliefs and barriers related to milk consumption (Table 3).

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