

ACADEMIC PAPER

A qualitative investigation into the U.S. Department of Agriculture 18-item Household Food Security Survey Module: Variations in interpretation, understanding and report by gender

Jaime S. Foster^{1,2} | Marlene B. Schwartz³ | Robin S. Grenier⁴ | Michael P. Burke⁵ | Emily A. Taylor¹ | Amy R. Mobley^{1,6} 

¹Department of Nutritional Sciences, University of Connecticut, Storrs, Connecticut, USA

²Rudd Center for Food Policy and Obesity, University of Connecticut, Hartford, Connecticut, USA

³Department of Human Development and Family Studies, and Director, Rudd Center for Food Policy and Obesity, University of Connecticut, Hartford, Connecticut, USA

⁴Neag School of Education, University of Connecticut, Storrs, Connecticut, USA

⁵Center for Research in Nutrition and Health Disparities, Arnold School of Public Health, University of South Carolina, Columbia, South Carolina

⁶Department of Health Education and Behavior, University of Florida, Gainesville, Florida

Correspondence

Amy R. Mobley, Associate Professor, University of Florida, Department of Health Education and Behavior 1864 Stadium Road, Gainesville, FL 32611.
Email: amy.mobley@ufl.edu

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Food insecurity, or limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways, affects more than 10% of Americans. The U.S. Department of Agriculture's 18-item Household Food Security Survey Module (HFSSM) is the most common measure used in the United States to assess food insecurity. This measure is to be completed by one adult who reports on the severity of disruptions in the quality and quantity of the household food supply. Recent work suggests that men and women might respond differently to some of the items in this measure. Therefore, the aim of the current study was to further explore how men and women interpret each of the items and specific concepts in this measure. Pairs ($n = 25$) of low-income and food-insecure mothers and fathers of children aged 2.5–10 years participated in one-on-one interviews to answer the HFSSM questions using the think-aloud method. The data were analyzed using basic inductive qualitative methods, and the findings suggest that gender is related to interpretation of key concepts relevant to food insecurity including “household,” “balanced meal,” and “worry.” These findings have policy implications for the use of this measure as a national benchmark of food insecurity such as the potential need for an additional, complementary instrument to include several male reference questions with different terminology.

1 | INTRODUCTION

Household food insecurity is defined as “limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways (Bickel, Nord, Price, Hamilton, & Cook, 2000).” Early efforts to create a measure of food insecurity relied on in-depth interviews with single, low-income mothers as key informants. Key constructs related to disruptions in the quality and quantity of the household food supply were identified resulting in the Radimer–Cornell Index (Kendall, Olson, & Frongillo Jr, 1995; Kendall, Olson, & Frongillo Jr., 1996; Radimer, Olson, & Campbell, 1990). Later, in the mid-1990s, the U.S. Department of Agriculture (USDA) adopted a modified version of the

Radimer–Cornell Index to measure and monitor household food insecurity in the United States, the USDA's Household Food Security Module (HFSSM).

The HFSSM measure is designed to assess the experiences of food insecurity at the adult and child levels, with each item directly relating to diet quality and quantity within the context of limited income (Bickel et al., 2000; Carlson, Andrews, & Bickel, 1999). Furthermore, some items also assess certainty, acceptability and worry related to disruptions in food quality and quantity. This measure, although contested (Barrett, 2010), is commonly accepted as the gold standard. However, recent literature has suggested that food insecurity may be reported differently by gender (Matheson & McIntyre, 2014). Similarly, responses to the 18-item HFSSM varied by

respondent gender when comparing mothers and fathers within the same household (Foster, Adamsons, Vollmer, & Mobley, 2018).

Researchers have previously expressed concerns about how individuals of different genders interpret items or questions from other health-related measures including the Nottingham Health Profile (Donovan, Frankel, & Eyles, 1993) and the Short-Form 36 Health Status Questionnaire (Mallinson, 2002). However, what is ultimately important to understand is not that if responses vary, but why. This can be ascertained in a mental model by considering the way that an individual's values, beliefs, and knowledge influence their decision-making process and choices. Because mental models are internal, elicitation techniques such as the think-aloud method can help researchers understand a participant's mental model (Grenier & Dudzinska-Przesmitzki, 2015). Accordingly, the objective of this study was to investigate how men and women differ in their interpretation of key terms and related response selection when completing the USDA's HFSSM. These findings could have implications of how food security status is assessed in the United States.

2 | METHODS

2.1 | Participants

The University of Connecticut Institutional Review Board approved this study. Pairs ($n = 25$) of low-income, food-insecure, and cohabiting parents of children ages 2.5–10 years old were recruited to participate in one-on-one interviews. Participants were recruited from sites that serve as proxies for low-income status such as Head Start centers and food pantries. One parent of each household was screened for participation in U.S. federal assistance programs and then asked the first three items on the HFSSM. If at least one parent within a couple affirmed, they were eligible. Cohabitation was defined as both parents living within the same household as the child. Parents did not have to be biological parents but needed to be the primary caretakers and guardians of the children. Eligible families were then scheduled for interviews and written informed consent was obtained. Each parent was provided a \$20 gift card incentive for participation at the end of the interview.

2.2 | Measures

Participants self-reported race, ethnicity, employment status, and nutrition assistance program participation. Researchers, trained in cognitive interviewing techniques, conducted the interviews in a private location such as the participants' home or a community partner site. Interviews were videotaped, audio-recorded for backup, and transcribed verbatim. Videotaped footage was used to capture nonverbal responses (e.g., nodding, head shaking, or other body language cues). Mothers and fathers were interviewed and videotaped separately in private rooms to ensure parents did not influence each other's responses.

The interviewer read each question of the HFSSM aloud to the participant and recorded the response. This response was used to calculate the score on the HFSSM. After each question, the interviewer asked scripted and unscripted probes using the think-aloud method to help the participant identify the rationale for his/her answer. As part of the reflexivity process, interviewers debriefed following each interview to

reflect on commonalities and discrepancies in reports by mothers and fathers. Interviewers also kept reflective memos that provide context that may have not been depicted in the videos or demographic questionnaires (e.g., disclosures made after the camera was turned off).

2.3 | Analysis

SPSS Version 20 (Armonk, NY, 2011) was used to analyze the demographic questionnaire descriptive information. The interviews were coded using a basic interpretive approach. This approach allowed for investigation into frequently occurring patterns. Codes (collected in NVivo Pro, Version 11) were derived either in vivo, using key words or phrases from parents, or by researcher discretion to more broadly capture a concept. Discussions about household food availability and insufficiencies are often emotional, and meaning is conveyed in unspoken ways. Facial expressions, significant pauses, and meaningful gestures are described in brackets to provide context to the gravity and emotion of the respondent's communications. These descriptions utilized techniques styled from discourse analysis, which allows a researcher to draw meaning from forms of communication that exceed the spoken and later transcribed words in an interview (Gee, 2014). Accordingly, a coding scheme was developed for this analysis to capture changes in body language during the interview. Body language and significant changes in volume or cadence are described in brackets (e.g., [grimaces]); emphasis is indicated in whole words capitalized (e.g., we REALLY try to avoid that); and pauses are denoted by ellipses (e.g., a 3-s pause [...]).

3 | RESULTS AND DISCUSSION

3.1 | Participant characteristics

Table 1 includes the demographic characteristics of the participants. Overall, couples were racially and ethnically diverse, low income, cohabiting, and raising at least one child aged 2.5–10 years old together. Notably, the majority of the mothers who were not working outside the home identified themselves as stay-at-home parents (44%) versus unemployed (36%), whereas most of the fathers who were not working outside the home identified themselves as unemployed (32%) versus stay-at-home parent (8%). Mothers and fathers' food insecurity scores were significantly but weakly correlated ($ICC = 0.40$, $p = 0.02$) with the majority of fathers reporting less affirmative responses.

The HFSSM contains several key words and phrases that are jargon; with definitions that not only vary by knowledge and expertise but also by life experience. Terms that were interpreted differently between men and women or between the researcher and participant are discussed.

3.2 | "A household"

Merriam-Webster's Dictionary defines a household as "those who dwell under the same roof and compose a family, also, those living together in the same dwelling." The HFSSM uses the term household to identify who is sharing financial and food related resources that is integral for measurement. Mothers' definitions were consistently

TABLE 1 Demographic characteristics of food insecure, low income parents of young children ($n = 50$)

Household level variable	N	(%)
Marital status ^a		
Living with partner	5	20
Married	17	68
Divorced	1	4
Other	2	8
Parental variables		
	Mother n (%)	Father n (%)
Employment status		
Stay at home parent	11 (44)	2 (8)
Employed part-time	4 (16)	4 (16)
Employed full-time	1 (4)	11 (44)
Not employed	9 (36)	8 (32)
Race		
White	15 (60)	14 (56)
Black	3 (12)	5 (20)
Asian	1 (4)	1 (4)
American Indian/Alaska Native	0 (0)	1 (4)
Other	6 (24)	4 (16)
Ethnicity (Hispanic)	5 (20)	8 (32)
Food security, categorical score		
High food security	7 (28)	12 (48)
Marginal food security	14 (56)	10 (40)
Low food security	4 (16)	3 (12)
Very low food security	0 (0)	0 (0)
	Mean (SD)	
Household food security scores	4.3 (2.6)	3.3 (2.6)

^aMarital status is depicted as reported by mothers because marital status was not always reported the same by parents.

accurate. Fathers' definitions lack consistency. Several of the questions in the HFSSM (Table 2) refer specifically to an individual's household. Thus, the respondent's definition of his or her household is important. When asked to define "household," the mothers in this sample consistently referred to their immediate family members who lived with them. Examples include M004: "my three children and my husband and myself," M012: "the people in the house where I live," albeit some more vague, for example, M017: "the family." Fathers' definitions were inconsistent, which suggests that this term might not share a common definition. Some fathers defined a household in the same way as mothers, for example, "my immediate family," while fathers with adult children no longer living at home, or who had non-custodial children they still provided for, included those family members in their discussion of providing food for their families.

I, I just—to me, any, anybody, ... any person that when I go to sleep at night, I gotta be sure they're straight, I consider my household ... [father then listed wife, cohabitating son and daughter and 2 teenage daughters living with their mother].

Other fathers thought a household referred to the physical structure where they lived in, D014: "My household, um, actual home you know? The physical being of a house." Noticeably, fathers often offered those definitions with an upward intonation indicating they were questioning

the definition they delivered. Further, many fathers could not define a household when asked to describe it in their own words, such as D008: "who's the boss, or something like that?" These differences by gender might suggest that cohabiting parents, those that share a "household," interpret and answer the HFSSM differently. Based on these interviews, other terms that parents used as an alternative to household included "my family" or "my immediate family." Several fathers discussed "the people I'm responsible for" in describing who they provided for, fed or ate with, which could be an alternative phrase to use with parents.

It is possible that as the division of household labor changes, whenever a household member can work. There are some fathers who view a household similarly to mothers and others who define a household as the structure, of which they are responsible, as a man, for maintaining (Christiansen & Palkovitz, 2001; Milkie, Simon, & Powell, 1997).

3.3 | "A Balanced Meal"

One of the items in the HFSSM states "(I/we) couldn't afford to eat balanced meals," with answer options including "was that often, sometimes, or never true for (you/your household) in the last 12 months?" When mothers were asked to define "balanced meals," their answers were often consistent with the dietary guidelines for Americans (U.S. Department of Health Human Services and US Department of Agriculture, 2015). Examples included M004: "a meal is like I said, a meat, a starch, a vegetable. Even better if you have a fruit," or M012: "Your meats, your vegetables, your starches, and that, I really think a well-balanced meal." Many mothers referenced food groups, with some specifically citing a previous U.S. food icon, The Food Guide Pyramid. Others made specific references to cultural requirements for a balanced meal such as, M009: "to me, I'm Hispanic, so it would be rice, um, beans, uh, I'm talking about dinner."

In contrast, fathers' definitions of balanced meals fell into one of three categories. First, there were those who were consistent with the mothers and referenced food groups or the DIETARY GUIDELINES, though these were often vague, for example, a father who simply stated D001: "Nutritional guidelines." Second, nearly half of the dads identified "variety" as an important feature of balanced, D008: "more about amount, variety and quality, less about food groups." This category of fathers is interesting, because "balance" from a nutritional standpoint seemed not to matter at all, as long as the diet was not boring and there were options. One father even listed three starchy dishes as an example of a balanced meal, D014: "potatoes, rice, pasta ... you know different things to choose." The third group of fathers stated that balance had no importance to them. For example, D004: "I don't know, to me, food is food."

The purpose of the question is to capture whether the family can afford the foods necessary for nutritionally adequate diets. Conceptually, a balanced meal is relative and subjective, perhaps evident by the fact that Americans vastly under consume foods encouraged in the dietary guidelines and overconsume foods those guidelines discourage (Guenther et al., 2013). Previous literature has noted that low-income food pantry users varied in how they quantified the number of food groups needed to qualify as a "balanced meal," whereas others responded "I don't know," when asked to quantify what a "balanced meal" was (Derrickson, Sakai, & Anderson, 2001). There were notable differences in the way that mothers and fathers define a balanced meal,

TABLE 2 Key statements from the USDA 18-item Household Food Security Module (HFSSM)

HH1	Which of these statements best describes the food eaten in your household in the last 12 months: —enough of the kinds of food (I/we) want to eat; —enough, but not always the <u>kinds</u> of food (I/we) want; —sometimes <u>not enough</u> to eat; or, — <u>often</u> not enough to eat?
HH2	“(I/We) worried whether (my/our) food would run out before (I/we) got money to buy more.”
HH3	“The food that (I/we) bought just didn't last, and (I/we) didn't have money to get more.”
HH4	“(I/we) couldn't afford to eat balanced meals.”
AD1	In the last 12 months, since last (name of current month), did (you/you or other adults in your household) ever cut the size of your meals or skip meals because there wasn't enough money for food?
AD2	In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money for food?
AD3	In the last 12 months, were you every hungry but did not eat because there wasn't enough money for food?
AD4	In the last 12 months, did you lose weight because there wasn't enough money for food?
AD5	In the last 12 months, did (you/you or other adults in your household) ever not eat for a whole day because there wasn't enough money for food?
CH1	“(I/we) relied on only a few kinds of low-cost food to feed (my/our) child/the children) because (I was/we were) running out of money to buy food.”
CH2	“(I/We) couldn't feed (my/our) child/the children) a balanced meal, because (I/we) couldn't afford that.”
CH3	“(My/Our child was/The children were) not eating enough because (I/we) just could not afford enough food.”
CH4	In the last 12 months, since (current month) of last year, did you ever cut the size of (your child's/any of the children's) meals because there wasn't enough money for food?
CH5	In the last 12 months, did (CHILD'S NAME/any of the children) ever skip meals because there wasn't enough money for food?
CH6	In the last 12 months, (was your child/were the children) ever hungry but you just could not afford more food?
CH7	In the last 12 months, did (your child/any of the children) ever not eat for a whole day because there wasn't enough money for food?

Note. Statements are adapted and do not reflect the full 18-item USDA HFSSM (Bickel et al. March 2000). HH = household specific question; AD = adult specific question; CH = child specific question.

which may shed light on differential responses between parents within a household. Perhaps, men are not reacting to the impact of financial strain on their diet quality because they are less knowledgeable about healthy eating standards. Consistent with previous data, men have lower health literacy rates compared with their female counterparts (Berkman et al., 2004; Berkman, Sheridan, Donahue, Halpern, & Crotty, 2011; Kickbusch, 2001; Kutner, Greenburg, Jin, & Paulsen, 2006).

3.4 | Balanced meals for a child

Healthy eating is subjective, but adding to the complexity is the concept of healthy eating for a child. In the HFSSM, parents (or an adult in the household) are asked to describe the adequacy of children's meals. For some mothers, definitions of a balanced meal for a child were consistent with definitions for an adult. For example, M010: “Like, in my mind, you have to have a vegetable and a meat and um, some type of starch or dairy product, too.” Other mothers noted that the health value of the food was important, but similarly important was that the child would eat and enjoy the food, M011:

Um you know that they have enough energy food. You know there's lots of food that is designed to just fill you up instead of like actually being used as energy so, um you know, they're trying to eat as many vegetables as they can. Trying to find vegetables that kids like is a whole new challenge.

Some fathers, even those who didn't mention different food groups for adults, suggested that balanced children's meals should include multiple food groups, such as D017: “I mean I think for a child I think healthier stuff for them. You know dairy products, milk for them. Um vegetables, you

know fruits, stuff like that.” Adding to the variety in responses, while some fathers thought healthy eating for a child and an adult are the same, others noted that acceptability of the food for a child is the most important, for example, D019: “I would think it's the same thing as an adult”, for others, healthy eating is based on a child's preferences, D022: “Um, for an adult, a balanced meal is something that's healthy for him.”

It is apparent that many parents are unclear about what is healthy or balanced for a child and this draws further attention to the need for tailored nutrition education interventions for fathers whose needs may differ from mothers. Previous research suggests that there is a disconnection between child feeding messages and parental interpretation and actions (Sigman-Grant et al., 2010). The lack of consistent and accurate messaging, in addition to or exacerbated by lower educational attainment in low-income populations, might contribute to the difficulty of defining a balanced meal for a child. Further, low-income status has been associated with lower diet quality, which could be a function of both strain in affording healthy food and poor nutrition knowledge (Darmon & Drewnowski, 2008). These data suggest that responses to questions about ability to provide a balanced meal for a child might not accurately assess a family's ability to provide nutritionally sound food to their child, as intended by the HFSSM.

3.5 | Low cost foods

One of the child specific questions refers to the purchases of low-cost foods: “(I/we) relied on only a few kinds of low-cost food to feed (my/our) child/the children) because (I was/we were) running out of money to buy food.” In the present study, parents were asked to describe examples of low-cost foods or meals prepared with low-cost foods. Mothers often referenced specific foods that were affordable, whereas fathers

referenced brands and stores where it is possible to purchase foods at lower prices. Whether or not a parent interprets “low-cost foods” as being synonymous with low quality, calorically dense, nutritionally void foods, or if they interpret “low-cost foods” as simply the store brand food as opposed to the pricier brand name version, could meaningfully alter food security score results. One mother stated, M011: “... low quality, low cost. They are both one of the same”, whereas a father described purchasing store brand as no particular hardship, but rather simply as an example of them relying on low-cost foods. Interestingly, some nutrient dense foods were commonly referred to as low cost, such as eggs used as an example by mothers.

The term “low cost foods” in the HFSSM is intended to evaluate whether or not and with what frequency financial strain is contributing to a family sacrificing their diet quality. Perhaps measuring the frequency usage of less preferred generic brands compared with name brands is meaningful, but that is likely not the intention. Thus, it is prudent to identify terminology that could accurately capture with what frequency parents must rely on low nutritional quality foods to feed their children. This is specifically the case if they would feed their children differently if they had the resources.

3.6 | Worry

In the HFSSM, participants were asked to identify or dissent from statements that others have made about their household and one of these statements includes the concept of worry. The psychological constructs of depression and loneliness are reported differently by men and women (Borys & Perlman, 1985; Kilmartin, 2005). Therefore, it was expected that the construct of worry might similarly vary by participant gender. For the following responses, because the nonverbal communication of participants can juxtapose how emotion might play a role in the ways men and women respond to this question, and convey a different meaning than the words alone, it was included in the transcription coded by using techniques specific to discourse analysis (Gee, 2014). In discussing what worrying about food running out meant to each parent, mothers described their worry using terms such as *stressful*, *nerve wracking*, *depressing*, *hard*, and *difficult*. Despite worry, they seemed to communicate openly about their worry, what caused it, and its consequences. One mother (M006) stated:

I mean that, you know, if you go to the store, you go shopping ... and you thought that would take you to the next, uh, paycheck, and then you realize that um, you know, you're probably coming up a little bit short.

Another mother (M015) stated: “I know that I've worried about that before, just that, um...money is really tight, you know ... And am I gonna be able to get what we need at the store?” Mothers often discussed worrying about being at the store and coming up short, or worrying during the last few days before their next benefits came through.

On the other hand, fathers redirected the conversation to how circumstances could be worse or offered reason for optimism. For example, one father admitted stress but offered hopefulness, D002: “It can be stressful at times. But ... as time goes on, it's getting less and less, 'cause financially we're getting better and better.” Another father, started with how he was optimistic that God would provide,

did admit to stress. Worry could also be a difficult emotion for men to acknowledge. Few fathers came out and directly stated that food insecurity and worry were difficult topics for men to discuss. One father shared that he worried because he viewed food insecurity as an indicator that he is not reaching his potential as a father and provider, D012: “It don't feel good, for one. It, it, it makes you feel, as a parent and as a provider, it makes you feel powerless, you know what I mean?” Another father expressed that although he worried, he felt that worry was part of the shared human experience, D011:

I think it's been a concern just because it's like a part of humanity, just like--the idea of food anxiety and not knowing where, even if you've got piles of food, you know, it's, it's lentils and, you know, stuff that might not be your first choice.

For mothers, overall, although the experience is hard, discussing it with someone appeared therapeutic as often said by mothers and then later noted in analytical memos.

Mothers were forthcoming with their responses. Fathers, on the other hand, often offered a dissenting response, denying the experience of worry. Interestingly, fathers through probing retroactively changed their responses. For example, if they described their home food environment and then a researcher restated the question using language similar to the respondent, they would provide an affirmative response agreeing to food scarcity or worry, when worded differently than the original question. Gender differences could contribute to men under-reporting worry, depression, and anxiety as it relates to household food security, and thus, men's rates of food security could be underrepresented on national assessments.

3.7 | The food just did not last

The concept of food not lasting and a family not having enough money to purchase more is paradigmatic of food insecurity. This topic was particularly emotional for participants to discuss, and the pauses and facial expressions were particularly poignant. Resembling other mothers in this sample, one mother describes the concept of food not lasting as meaning that foods left in their home were not sufficient to create an appealing meal or to eat alone, M001: “yeah that would pretty much be being left with like a few bags of frozen stuff(..) um (...)but nothing particularly that anybody really wants.” Her husband offered a very different perspective. He explains why he would never agree to such a statement, D001:

I mean, that would have to be(...) you know [takes a deep breath](..) there's literally NOTHING [shouted] consumable(... ..)is choked up struggling to speak] and there's a backyard, so there. You know what I mean? You can eat dandelions.

Overall, this mother and father are representative of the sample of mothers and fathers as a whole. Mothers discussed the term “running out of food” often as meaning the inability to serve food when lacking all of the ingredients for a recipe or meal. For example, one mother discussed having pasta sauce and rice, but not having pasta or beans to make complete meals with what she had. This mother selected the “sometimes” response, indicating that when their SNAP allotment

runs out each month, it is impossible to make meals. Fathers, on the other hand, referenced their impoverished and disadvantaged childhood or that it could get worse, therefore, they would not agree. Several indicated that it was because of their wives that they did not experience a worse scenario. For example, D003: "Because my wife always makes sure that we always have enough—and that—it's healthy and it's not just junk food." At present, he felt could not, or should not complain. The manner, in which fathers are complimentary to mothers when describing making do with less, seems to deflect from the insufficiency in the households.

Based on this sample and corresponding data, it appears that the statement as written, "The food that (I/we) bought just didn't last, and (I/we) didn't have money to get more," elicits different interpretation for mothers and fathers. The scenarios provided by fathers were more severe than their present scenario, which they indicated could be worse. Some contextualize their response in other life experiences to minimize their present undesirable situation. Similarly, fathers note that their children will be better off than they were, so there is no need to complain, or worry. Mothers, on the other hand, seem to have a standard in mind for how they want to feed their children and if limited finances prevent them from meeting it, they indicate food insecurity in their responses to the HFSSM. Perhaps women are more susceptible to altering their responses related to social desirability, and because worrying or self-sacrifice for women is socially acceptable or desirable, they can offer an affirmative response (Hebert et al., 1997; Press & Townsley, 1998).

3.8 | Emotional responses as challenges

One concern when conducting interviews about painful topics is that people may not be comfortable answering the questions honestly. For that reason, all participants were asked about worry and related emotions, and if their feelings made it difficult to answer those questions. Mothers often used the word "honesty" in replies such as M009: "No. Um, I'm answering as honest as I can." Some fathers said that while they were answering honestly, they imagine that other men would find it difficult to respond honestly. For example, D003: "Yes, absolutely. Because you, you embarrassed, you don't want other people to know." Overall, responses to this question indicate that for some men, male socialization and gender norms might contribute to difficulty responding to these questions honestly.

4 | CONCLUSION

The HFSSM is a subjective self-report measure completed by both men and women in the United States. However, variations in response by gender have been previously unreported. In the present investigation, varying interpretation of key terms and jargon indicate poor content validity when comparing mothers and fathers and have potential implications in the report or assessment of national food security rates. Further, there were instances of both mothers' and fathers' definitions differing from the intention of the measure. Of particular concern was that men and women differed in defining the key term, "household." This is concerning because "a household" is the unit of reference for all questions in the HFSSM. Further, previous literature has cited gender differences in health literacy, which may play a role in how parents

define a "balanced meal." Women often define health-related concepts based on expert advice, whereas fathers determine parenting and health decisions based on peers and personal experience (Hashima & Amato, 1994). This is particularly important because food security is defined as access to "nutritionally sound food," and the HFSSM only addresses nutritionally quality using the phrase, "a balanced meal." Finally, it appears that life experience and male socialization might alter the responses provided to the more severe items and those related to worry, as men are socialized to be less expressive of those emotions.

It is undeniable that interpretation of the terminology in the HFSSM is complicated by more factors than gender alone. Thus, conversations about gender and food insecurity should not occur without discussing intersectionality. In food-insecure populations, individuals and families face multiple inequities that can impact their lived experience related to food insecurity, and related responses on the USDA HFSSM.

Further, the national safety net targets mothers for nutrition aid and education. This is perhaps most evident in the Special Supplemental Nutrition Assistance Program for Women, Infants and Children, which provides education and food packages to pregnant mothers and children up to 5 years of age. This tendency to view nutrition, child feeding and the need for nutrition assistance as a "single axis," mother-centric condition or responsibility may alienate one-half of all parents, which is increasingly problematic as families are redefining household roles and responsibilities. It is possible that if more men are assuming roles in reporting on food security within a household, that current food insecurity rates are actually higher than what is known because of the potential of men to interpret question differently and underestimate the issue of food security in a household.

To the authors' knowledge, this is the first study to investigate how the gender of a participant may be related to responses on the HFSSM. Because the HFSSM is used in longitudinal assessment, the best approach moving forward could be to create, develop, and validate an additional complementary measure to include several male reference questions. New items could consider changing terminology in questions such as those containing the terms "balanced meal" and "household." This could allow for the more thorough and consistent evaluation of food security without disturbing longitudinal monitoring, while enhancing understanding of food insecurity.

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ORCID

Amy R. Mobley  <http://orcid.org/0000-0002-7477-942X>

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Dr. Jaime S. Foster is a Postdoctoral Fellow with the Rudd Center for Food Policy and Obesity at the University of Connecticut. She was a graduate student in Nutritional Sciences at University of Connecticut, during the time of this project.

Dr. Marlene B. Schwartz is the Director of the Rudd Center for Food Policy and Obesity and Professor of Human Development and Family Studies at the University of Connecticut.

Dr. Robin S. Grenier is an Associate Professor of adult learning and a qualitative methodologist in the Neag School of Education at the University of Connecticut.

Dr. Michael P. Burke is an Affiliated Scholar with the Center for Research in Nutrition and Health Disparities at the University of South Carolina's Arnold School of Public Health.

Emily A. Taylor recently completed the University of Connecticut Coordinated Program in Dietetics, graduating Summa Cum Laude and as an Honor Scholar. She is currently working as an outpatient registered dietitian in the Boston, MA area, and hopes to eventually pursue graduate study.

Dr. Amy R. Mobley is an Associate Professor of Health Education and Behavior at the University of Florida. Prior to that, she was an Associate Professor of Nutritional Sciences at the University of Connecticut. Dr. Mobley studies factors that impact dietary intake and assessment especially in underserved populations.

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