

ABSTRACT

Title of Document: UNMET NEED FOR NUTRITION-RELATED SERVICES IN RECENTLY HOSPITAL-DISCHARGED OLDER ADULTS

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Older adults returning home from the hospital may have disabilities that prevent them from obtaining or preparing adequate nutritious food. Additionally, they may have difficulty identifying their need for or accessing services that could provide support. We aimed to identify the level of unmet need for services that may affect nutritional health in community-dwelling older adults. We also compared the prevalence of perceived need for services with objectively assessed need. We explored the need for home health care, transportation, mental health, oral health, vision, grocery delivery, and physical therapy services in 566 community-dwelling, recently hospital-discharged older adults. Almost half (45.6%) of the sample reported unmet need for at least one service. For each service, there was discrepancy between perceived need and assessed need. By improving the screening of hospital-discharged older adults' needs for nutrition-related services, the healthcare community can improve targeting of services to those with the most nutritional risk.

UNMET NEED FOR NUTRITION-RELATED SERVICES IN RECENTLY
HOSPITAL-DISCHARGED OLDER ADULTS

By

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Table of Contents

Acknowledgements	ii
Table of Contents	iii
List of Tables	iv
Chapter 1: Introduction.....	1
<i>Literature Review</i>	3
Chapter 2: Methods	12
Chapter 3: Results.....	18
Chapter 4: Discussion.....	27
<i>Implications</i>	38
<i>Summary of Main Points</i>	42
Appendix 1: Proxy Information.....	43
Appendix 2: Assessment Questions	44
Bibliography	52

List of Tables

Table 1. Demographic and nutritional risk characteristics of the sample.....	19
Table 2. Participant characteristics by reported unmet need for at least one service compared with no reported unmet need.....	20
Table 3. Prevalence of unmet need for services as reported by participant.....	21
Table 4. Number of participants with perceived need for each service, percentage of those with met versus unmet need, indicator for assessed need, and proportion of participants with assessed need for each service.....	22
Table 5. Prevalence of misperceived need and type of misperception for each service.....	26

Chapter 1: Introduction

The older population is growing: in 2010 those over 60 made up 18% of the United States population, and this is projected to increase to 25% by 2030¹. Also increasing is the recognition that older adults prefer to remain in their homes rather than moving in to nursing facilities as they age. This trend is known as “aging in place.” In fact, in a study of seriously ill hospitalized adults, 30% of the 3,263 respondents to a question about their willingness to live permanently in a nursing home indicated that they would “rather die,” and 26% were “very unwilling”². Nursing home care is expensive – a semi-private room in a nursing home in the U.S. cost \$222 per day in 2012³ – and even those who would prefer this type of care may not be able to afford it. Living at home allows older adults to maintain continuity in their lives and saves them money. However, it does come with risks related to the health declines this population is likely to face, especially if they are living with needs that are unmet by the healthcare community.

Older adults returning from hospitalization are an especially vulnerable group⁴ and are likely to be more limited functionally upon discharge than they were upon admission⁵. The physical limitations that are common after an event requiring hospitalization may compromise an individual’s ability to obtain or prepare sufficient food. An older adult who can no longer drive may not be able to get to the store to get groceries, oral health problems may cause difficulties with chewing nutritious foods, and joint issues such as arthritis can compromise one’s ability to shop for and prepare food. Older adults who are undernourished may enter a spiral of declining health: nutrition is important for both healing and the maintenance of good health,

and malnutrition is associated with poor health outcomes, including morbidity^{6,7} and mortality⁸. It is also associated with increased healthcare costs⁹, including increased length of hospital stay^{9,10} and risk of rehospitalization¹⁰.

If older adults are going to live at home, it is important that they receive any necessary support to make sure they can meet their nutritional needs. One approach is to plan for nutritional needs in the hospital discharge process. The care plans currently used in the transition from hospital to home do not typically consider how to address nutritional risk¹¹. If nutrition-related needs are identified during the discharge process, home- and community-based services (HCBS) are available through the Older American Act Nutrition Program (OAANP) and other programs that can help address these needs and prevent the complications that can result from poor nutritional planning. One program that is in place to help Medicaid-eligible persons transition from institutional settings back to the community is Money Follows the Person (MFP). In this model, participants choose the services they will receive; however, they may not know that maintaining good nutrition will be a problem for them or what services could best support their nutritional needs. As of the most recent annual report, released in 2012, only 19 of the 28 states participating in the MFP program offer meal services, and only 13% of the 12,839 MFP participants who had transitioned by the end of December 2011 were using meal services¹². Food or grocery stocking is one of the supplemental services (meaning it is not traditionally Medicaid reimbursable, but can be covered under MFP) included in some MFP programs, however it is a one-time service, and, as of 2014, is only offered by 7 states¹³. Identifying the needs recently hospitalized older adults have that may be

putting them at nutritional risk and the barriers that are preventing them from being met is the first step in understanding how programs and institutions can better incorporate nutrition support into the care transition process.

The present study used data from the Community Connections Demonstration Project to examine unmet needs that could impact nutritional status in a sample of recently hospital-discharged older adults. We also compared the prevalence of perceived need with assessed need for each service. The results highlight areas of focus that may be integrated into the discharge planning process in order to provide more comprehensive nutritional support to older adults returning from the hospital.

Literature Review

Developing effective and efficient support systems to maintain older adult's health in their communities is an important priority for the healthcare system as the older population grows. Maintaining older adults in their homes can save the healthcare system money. Thomas and Mor found that the increase in states' expenditures on OAA Title III registered services and the percentage of Medicaid dollars going toward HCBS from 2000 to 2009 was associated with a decrease in the proportion of low-care nursing home residents¹⁴. In a second study, they projected that if each state were to provide HDMS to an additional 1% of its population of those 65 years and older—allowing them to remain in their homes rather than moving to nursing care facilities—the initial savings to state Medicaid programs would exceed \$109 million for the country as a whole¹⁵. Both the health care system and individuals can benefit from the trend towards “aging in place”.

Unmet needs and health outcomes

However, older adults are often living with unmet needs that result in negative health outcomes and may make it more difficult for them to remain in their homes. Studies have shown that unmet needs in disabled adults are associated with discomfort¹⁶, worsening health, and increased use of medical resources^{16,17,18,19,20,21}. In 2004, researchers found that among those needing help with at least two activities of daily living (ADLs), those with unmet needs were more likely to have experienced falls in the last year, bedsores/pressure sores in the last 3 months, and contractures in the last 3 months¹⁷. Arbaje et al found that unmet ADL need was a significant variable in their model predicting early hospital readmission (defined as readmission within 60 days of discharge) in a sample of 1,351 community-dwelling Medicaid beneficiaries. Those who reported having any unmet functional need had 48% increased odds of early readmission²².

Research has also looked at unmet need with the specific goal of determining its association with acute care needs. Sands et al looked at the association of unmet ADL need with acute care admissions of older adults enrolled in the Program of All-Inclusive Care for the Elderly (PACE), a medical and social service program that provides for the ADL needs of nursing home eligible clients. All subjects had ADL needs, however some of them had been met before enrollment in the program and some had not. The researchers found that those with unmet ADL needs before enrollment had a higher rate of acute care admission, both before and after enrollment. The researchers saw a decline in acute care admissions during the second 6 week period in the program for those who had unmet needs before admission,

suggesting that their health improved after their needs were met by the PACE program¹⁸.

More recently, DePalma et al did a study of the National Long-Term Care Surveys (NLTCs) to determine whether returning to the community from a recent hospitalization with unmet ADL need was associated with probability of readmission²¹. They were able to look at unmet need as determined by interviews from the NLTCs and link that information to Medicare claims data that indicated hospitalizations. Their results showed that those who reported unmet need for ADL help were significantly more likely to be readmitted in the year following the initial hospitalization. Further, the risk of readmission was higher in those who reported unmet need for a new disability that had developed in the three-month period between the index hospitalization and the interview (OR=2.02; 95% CI: 1.24-3.30) than in those who returned home with an unmet need that they had acquired prior to the index hospitalization (OR=1.22; 95% CI: 0.90-1.65)²¹. This demonstrates the importance of screening for functional impairments following an event requiring hospitalization, as meeting needs associated with these new impairments may help reduce the risk of further hospitalization.

Unmet need and nutritional risk

With unmet need, there is a risk of health consequences that are specifically related to nutrition. In a study by Desai, Lentzner, and Weeks, almost half of a nationally representative sample of older adults with unmet need for personal assistance with ADLs reported experiencing a negative consequence as a result. The researchers used data from the Second Supplement on Aging to the 1994 National

Health Interview Survey. Participants were asked if they had difficulty performing each ADL, whether or not they received assistance from another person when performing each activity, and whether or not they needed help/more help with the activity. For five of the seven ADLs (bathing/showering, dressing, eating, walking, and toileting), direct consequences of inadequate personal assistance with the activity within the past month were assessed. The question exploring a consequence of difficulty eating showed that 21.1% of those who had unmet need for assistance with eating reported that there were times when they were hungry but unable to eat¹⁶.

There were one or two directly related consequences explored for each of the five ADLs; however, there are many possibilities for consequences that, though less obvious, are still very closely related to the lack of assistance with a disability. In the context of nutrition, difficulty with getting outside (one of the ADLs explored in the study) could result in difficulty with obtaining groceries, as could difficulty walking. Research has shown that functional impairments are associated with nutritional risk factors, such as food insecurity^{23,24}.

Another study explored consequences associated with or attributed to lack of help with ADLs or instrumental activities of daily living (IADLs) in adults aged 18 to 99 with disability, and found that those with unmet need for two or more ADLs were more likely to experience adverse consequences²⁵. Unmet need was measured by asking individuals if they had help in any of 5 ADLs and 10 IADLs, and whether they needed help or more help. The inclusion of IADLs in this study allowed for the analysis of two additional activities that are directly related to nutrition: ability to prepare meals and ability to shop for food and personal items.

This study found that for those who needed help with the ADL of eating, 14.5% of those with unmet need (in two or more ADLs) reported going hungry, compared with 4.2% of those with met needs. Over twice as many of those with unmet needs (32.0%) reported having lost weight in the last month compared with those with met needs (14.1%), and 11.8% of those with unmet needs reported having been dehydrated in the last month, compared with 4.6% of those with met needs (all differences significant at $p < 0.01$). For those who said they needed help with the IADL of preparing meals, the differences were even more distinct. A greater proportion of those with unmet needs in two or more ADLs reported going hungry due to lack of help in food prep (18.1%, compared with 4.1% of those with met needs), were unable to follow a special diet owing to lack of help cooking (12.7%, compared with 1.4%), and were unable to eat preferred food (22.4%, compared with 3.9%). The third disability explored was the IADL of shopping for groceries and personal items: 10.9% of those with unmet needs were unable to follow a special diet due to lack of help shopping, compared with only 0.7% of those with met needs; and 10.6% missed a meal owing to lack of help shopping, compared with 0.4% of those with met needs²⁵. The data for these last two IADLs especially indicate the potential improvements in nutritional adequacy that meeting older adults' needs can make.

This study was cross-sectional and thus there is no support for a causal relationship, however there is a clear association between unmet needs and negative health outcomes that should not be ignored. Though this study was in adults of all ages, they found that two thirds of those living alone and needing more help were age 65 and older, demonstrating that unmet need is a significant issue for the older

population²⁵. Older adults who return home from the hospital with unmet needs are in a vulnerable state, and meeting these needs can help prevent the spiral of declining health that leads to rehospitalizations and further disability.

Reasons for unmet need

The reasons for unmet need are multifaceted. Many are systemic, such as lack of communication between hospitals and community services⁴, lack of outreach²⁶, or lack of funds to support the level of need²⁶. There are also social factors: in 2002, La Plante et al found that over 85% of the hours of ADL and IADL assistance that older adults were receiving was provided by unpaid helpers, such as family and friends²⁷. These informal helpers often have other responsibilities to balance and cannot dedicate enough time to caretaking to meet all of the care recipient's needs.

In addition to these external barriers to obtaining help for services in the home, there are also internal barriers that older adults may be dealing with that prevent them from seeking the help they need. Older adults may experience feelings of withdrawal, resignation and low expectations that prevent them from seeking help. Research on help-seeking behavior has found themes of problem minimization, age attribution, lack of information about where to seek help or what is available, perceived service failure and cost issues, and fear of the consequences of seeking help²⁸. Though many of these barriers to seeking help speak to social, psychological, and cultural issues, informational needs (such as "I didn't know you could ask anybody" or "I didn't know how to get more information") are simple to address if healthcare providers and community programs are visible and communicate well.

Just as needs are varied and complex in this population, so are the reasons people may not seek help for their needs; thus it is the role of the healthcare system to develop and use tools that can be used to identify and address these needs, as patients and their caretakers are less likely to do so independently.

Perceived need versus assessed need

Additionally, the level of need perceived by a patient or their caretaker may differ from the level determined by a screening or assessment tool. A study in 2008 looked at the relationships between perceived needs of community-dwelling older adults (as determined by the participant reporting that they ‘would use’ a particular service) versus assessed needs (as determined by various screening questions). This study demonstrated the complexity of determining need and matching need and service usage. For some types of services there was a strong relationship between the perceived needs of the participants and their assessed needs. However, for a large majority of the services, less than half of those with assessed needs reported an interest in the related services. There were also participants who said they would use a service and yet they did not show assessment-based need²⁹. For the assessments based on self-report, this study suggests that different methods of asking about need may result in conflicting information: asking an individual if they need a service directly may result in a different decision than trying to determine if they need the service based on questions that screen for problems the service could address. Research into the most accurate way to assess need for services is warranted. Developing effective and efficient tools for measuring need will make these types of

assessment more objective and contribute to a more seamless and fair system of service delivery.

Measuring unmet need

As stated by the Government Accountability Office (GAO) in their 2011 report on unmet need for services under the Older Americans Act, there are currently no standardized definitions or procedures for measuring need and unmet need²⁶. Assessments for the need for services can be time-consuming and costly, requiring staff and expertise that programs may not have. In 2011, the GAO reported that they were unable to measure the extent of need and unmet need for the different HCBS nationally or consistently across states because state knowledge on these matters was so limited and inconsistent. However, they emphasize the importance of this information as a tool to help services best allocate their limited resources. At the end of the report, the GAO recommends that deliberate efforts be made by the Department of Health and Human Services, other government agencies, and researchers to develop consistent definitions of need and unmet need and to propose procedures for data collection on older adults with unmet needs for HCBS. These definitions and procedures are yet to be developed, and so research must continue to gather information on unmet need in the older adult population. This is an opportunity to investigate nutrition-related need while developing the body of information that will inform future efforts to develop need-measuring tools. Meeting the needs of older adults is a complex task involving effective assessment, targeting and outreach. The reasons for unmet need in this population range from psychological to environmental and from internal to external. Unmet needs in older

adults residing in their homes can compromise an individual's ability to obtain sufficient, nutritious food and can contribute to declining health. Most of the current literature focuses on ADL needs, yet there is a wide range of services that older adults may be in need of. These services have the potential to provide comprehensive support, from helping with transportation to mental health needs, which may in turn help support nutrition status. There currently exists no research that specifically focuses on unmet needs that may be affecting the older, community-dwelling population's ability to obtain adequate nutrition. In this study we aimed to identify the unmet nutrition-related needs as reported by a sample of recently hospital-discharged, community-dwelling older adults, and to examine the differences in perceived need for a service compared with need for the service as determined by an assessment tool or assessment-type question.

Chapter 2: Methods

Data for this study was previously collected as part of the Community Connections (CC) Demonstration Project, conducted in 2005-2006 by Sahyoun et al³⁰. Participants in this study were discharged from the hospital after a stay of at least 3 days for acute short-term illnesses, were 60 years and older, without terminal disease or severe dementia, non-users of HDM services, able to consume solid foods, and able to understand survey questions in English or Spanish (n=566). For some participants, a proxy or substitute respondent answered the questions (n=77).

The perceived unmet needs of the sample were measured using answers to a series of questions about each service. The services investigated were grocery delivery, transportation, physical therapy, home health care, oral health, mental health, and vision. For each service, participants were asked, “Since discharge from the hospital, have you received [service] offered in your community?” (No/Yes/Never heard of it). If the answer was “No”, they were asked, “Do you feel you need [service]?” (No/Yes/Don’t know). Participants were divided into three categories: 1) those who say they receive the service, 2) those who say they don’t receive the service and don’t feel they need it, and 3) those who say they don’t receive the service and do feel they need it. The participants in the third category were defined as having unmet need for that service, and those who received the service or said they didn’t need it were considered without unmet need. We also categorized these responses to define perceived need: we defined those in the first or the third category as having perceived need, and those in the second category were without perceived need. Within the perceived need category there is perceived met need (those who say

they receive the service) and perceived unmet need (those who did not receive it but do feel they need it). Those who answered “Never heard of it” to the first question were not asked if they thought they needed the service, and so it was assumed that they did not. The maximum number of “Never heard of it” responses for any service was 2 out of 566.

To measure nutritional risk, we compared demographic and nutritional risk factors for those with versus without unmet need for each service area. The demographic characteristics looked at were age (under age 75/over age 75), race/ethnicity (non-Hispanic white, non-Hispanic Black, Hispanic), gender (male/female), income bracket (household income in 2004 over \$20,000/under \$20,000), and educational attainment (high school or less/more than high school). We measured food anxiety with answer to the question, “While at the hospital, were you worried about getting enough foods when you returned home?” (No/Yes). We also looked at the participants’ ability to obtain and prepare food. For ability to obtain food, analyzed the following question sequence from the physical functioning section of the questionnaire: first, participants were asked, “How much difficulty do you have shopping [for food and clothes]?” (No difficulty/Some difficulty/A lot of difficulty/Unable to do/Never does for other reasons). If they answered “Some difficulty”, “A lot of difficulty”, or “Unable to do”, they were asked, “Is someone available to help?” (No/Yes). For ability to prepare food, we analyzed a similar sequence of questions, beginning with “How much difficulty do you have preparing meals?” We also measured nutritional risk with the question “Have you, without

wanting to, lost more than 10 pounds over the last 6 months?” (No/Yes) and the question “Do you live alone?” (No/Yes).

In order to explore the difference between perceived need (as measured by the questions listed in the methods above) and need determined by assessment tools or assessment-type questions, we used other questions throughout the questionnaire that indicate need for specific services. Some questions may serve as a more objective assessment of need for the service based on a validated tool, and some may measure need by asking about self-reported problems, for which the service could provide assistance.

Grocery Delivery

We measured the need for grocery delivery services in two different ways. The first was if the participant answered that they had difficulty shopping. The second took into account the next question in the sequence: if they answered that they had at least some difficulty shopping, they were asked if someone was available to help. If they had difficulty shopping and no one was available to help, we considered them to be in need of grocery delivery services. If they did not have difficulty or they had difficulty but someone was available to help, they were not in need.

We also explored the effect of help on perceived need in those who had difficulty. To do this we removed those who did not have difficulty from the category of assessed need and compared perceived need of those who did versus did not have help with their difficulty shopping.

Home Health Care

We measured the need for home health care in two different ways. The first was based on the participants' self-reported difficulties with ADLs. These difficulties were measured in the questionnaire with questions asking if participants had difficulty with each of the 7 ADLs (bathing, dressing, self-care, walking across a room, eating, using the toilet, transferring in and out of bed). Possible answers were no difficulty, some difficulty, a lot of difficulty, or unable to do. Assessed need for home health care was defined as at least some difficulty with at least two ADLs³¹. For each ADL there is a follow-up question asking, "Is someone available to help?" (No/Yes/Don't know). Those who answered "No" or "Don't know" were considered to have difficulty and no help. The second method for defining need for home health care was at least some difficulty and no help for at least two ADLs.

Transportation

We assessed the participants' need for transportation services with their answer to the question "How much difficulty do you have riding in a car or taking transportation for seniors?" (No difficulty/Some difficulty/A lot of difficulty/Unable to do). Those who say they have at least some difficulty were defined as having assessed need.

Mental Health

We assessed need for mental health services based on low cognitive functioning with the questions from the 22-item Adult Lifestyles and Function Interview-Mini-Mental State Examination (ALFI-MMSE; range 0-30 points) questionnaire. Participants were categorized as having impaired cognitive

functioning if the ALF-MMSE score was below 17³². We also measured need for mental health services based on the presence of depressive symptoms, as measured by the 5-item Geriatric Depression Scale (GDS-5; range 0-5 points). Participants with a score of 2 or greater were categorized as having depressive symptoms³³.

Dental or Oral Health

We assessed the participants' perceived need for dental or oral health services with their answer to the question "How often do you limit the kind or amount of food you eat because of problems with your teeth or dentures or partial plates?" (Always/Very often/Sometimes/Seldom/Never).

Vision

We assessed the participants' perceived need for optometric services with their answer to the question, "How is your eyesight (with glasses or contacts if you wear them)?" (Excellent/Very good/Good/Fair/Poor). If the response was "Fair" or "Poor", the participant was categorized as having assessed need for vision services.

Physical Therapy

We assessed the need for physical therapy based on the participants' answer to the question "How much difficulty do you have walking across the room?" (No difficulty/Some difficulty/A lot of difficulty/Unable to do). Assessed need for physical therapy was defined as having at least some difficulty with walking.

Statistical Methodology

Statistical Analysis Software 9.2 was used to analyze the data. We used Chi-square tests to determine if differences were significant in demographic characteristics and nutritional risk factors between those with unmet need for at least

one service compared with no reported unmet need. We also used chi-square tests, or Fisher's exact tests if cell sizes were less than 5, to determine if there were significant differences in the prevalence of perceived need in those with or without assessed need for a service.

Chapter 3: Results

Sample Characteristics

Table 1 shows demographics and nutritional risk characteristics of the sample. A majority of participants were female (72.6%), age 75 and over (63.6%), and non-Hispanic white (73.7%). They tended to be lower income, but most had more than a high school education. Almost 15% reported being anxious about getting enough food when returning from hospital. A majority said they have difficulty shopping and reported being unable to cook. Almost half of the participants said they live alone and almost half reported having lost 10 or more pounds in the past 6 months.

Table 2 shows the univariate analysis comparing prevalence of unmet need within demographic and nutritional risk categories. The characteristics that were significantly associated with unmet need were older age, non-White, difficulty shopping, inability to prepare meals, and at least 10 pounds of weight lost in the past 6 months.

Unmet Need

Almost half (45.6%) of the participants reported unmet need for at least one of the services explored in this study (Table 3). Approximately one-fifth of participants reported unmet need for vision services and oral health services (21.8% and 19.3%, respectively). Over one-tenth of participants reported unmet need for transportation service (11.3%), and just under one-tenth reported unmet need for physical therapy and home health care (9.4% and 8.5%, respectively). Twenty-three participants

(4.1%) reported unmet need for grocery delivery services, and only 10 participants (1.8%) reported unmet need for mental health services (Table 3).

Table 1. Demographic and nutritional risk characteristics of the sample (n=566).

Characteristic	n	%
Gender		
<i>Male</i>	155	27.4
<i>Female</i>	411	72.6
Age		
<i>Under 75</i>	206	36.4
<i>75 and over</i>	360	63.6
Race/Ethnicity		
<i>Non-Hispanic White</i>	417	73.7
<i>Non-Hispanic Black</i>	60	10.6
<i>Hispanic</i>	89	15.7
Annual Household Income*		
<i>More than \$20,000</i>	154	27.6
<i>\$20,000 or less</i>	405	72.4
Education		
<i>High school graduate</i>	392	69.3
<i>Less than high school</i>	174	30.7
Food Anxiety		
<i>Not anxious in hospital</i>	483	85.3
<i>Anxious in hospital</i>	83	14.7
Difficulty Shopping		
<i>None</i>	176	31.1
<i>At least some</i>	390	68.9
Ability to Prepare Meals		
<i>Able</i>	309	54.6
<i>Unable</i>	257	45.4
Weight Loss in Past 6 Months [†]		
<i>Less than 10 pounds</i>	321	57.7
<i>10 pounds or more</i>	235	42.3
Live Alone		
<i>No</i>	327	57.8
<i>Yes</i>	239	42.2

* Data about income was missing for 7 participants (n=559).

[†] There were 10 “don’t know” responses for the question about weight loss. These responses were included with “Less than 10 pounds”.

Table 2. Participant characteristics by reported unmet need for at least one service compared with no reported unmet need (n=566).

Characteristic	No Unmet Need (%)	With Unmet Need (%)
Gender		
<i>Male</i>	55.5	44.5
<i>Female</i>	54.0	46.0
Age*		
<i>Under 75</i>	57.5	42.5
<i>75 and over</i>	49.0	51.0
Race/Ethnicity**		
<i>Non-Hispanic White</i>	58.5	41.5
<i>Non-Hispanic Black</i>	51.7	48.3
<i>Hispanic</i>	37.1	62.9
Annual Household Income [†]		
<i>More than \$20,000</i>	59.1	40.9
<i>\$20,000 or less</i>	52.6	47.4
Education		
<i>High school graduate</i>	57.6	42.3
<i>Less than high school</i>	47.1	52.9
Food Anxiety		
<i>Not anxious in hospital</i>	55.7	44.3
<i>Anxious in hospital</i>	47.0	53.0
Difficulty Shopping**		
<i>None</i>	64.8	35.2
<i>At least some</i>	49.7	50.2
Ability to Prepare Meals**		
<i>Able</i>	61.8	38.2
<i>Unable</i>	45.5	54.5
Weight Loss in Past 6 Months* ^{††}		
<i>Less than 10 pounds</i>	58.3	41.7
<i>10 pounds or more</i>	48.9	51.1
Live Alone		
<i>No</i>	54.0	46.0
<i>Yes</i>	54.7	45.3

* p≤0.05

** p<0.01

[†] Data about income was missing for 7 participants (n=559).

^{††} There were 10 “don’t know” responses for the question about weight loss. These responses were included with “Less than 10 pounds”.

Table 3. Prevalence of unmet need for services as reported by participants (n=566).

Service	Total Unmet Need* (%)
Vision	21.8
Oral Health	19.3
Transportation	11.3
Physical Therapy	9.4
Home Health Care	8.5
Grocery Delivery	4.1
Mental Health	1.8

* Unmet need was defined as those who said they did not receive the service and that they did need it.

Perceived Need and Assessed Need

The prevalence of perceived need for services ranged from 65.2% for home health care to 2.3% for mental health services (Table 4). The services with the highest level of perceived need (home health care and physical therapy) were also the services which participants were more likely to report receiving, rather than needing (Table 4). A large majority of perceived need for home health care and physical therapy services was met (87.0% and 79.1%, respectively). The rate of met need for all of the other services ranged from 34.3% for grocery delivery down to 7.6% for oral health.

Table 4 compares the proportion of participants who had perceived need for each service with the proportion who had need for that service as indicated by more objective assessment-type questions. For most services, the amount of assessed need was higher than the amount of perceived need. Twice as many participants reported difficulty with transportation as perceived need for transportation services. One-fifth of participants had impaired cognition and two-fifths showed depressive symptoms, however only 2.3% perceived need for mental health services. While only 6.2% of

participants perceived need for grocery delivery, over ten times as many said that they have at least some difficulty shopping. However, when self-reported help with shopping was included in the assessment, the proportion of those with assessed need decreased to 4.6%.

Table 4. Number of participants with perceived need for each service, percentage of these with met versus unmet need, indicator for assessed need, and proportion of participants with assessed need for each service (n=566).

Service	Perceived Need n (%)	% With Perceived Need Whose Needs Were Met Versus Unmet*		Assessment Indicator	Assessed Need** n (%)
		Met	Unmet		
Grocery Delivery	35 (6.2)	34.3	65.7	Difficulty shopping Difficulty shopping and no help	390 (68.9) 26 (4.6)
Transportation	101 (17.8)	36.6	63.3	Difficulty using transportation	187 (33.0)
Physical Therapy	254 (44.9)	79.1	20.9	Difficulty walking	283 (50.0)
Oral Health	118 (20.9)	7.6	92.4	Limiting food due to oral problems	95 (16.8)
Mental Health	13 (2.3)	23.1	76.9	Impaired cognition [†] Depressive symptoms ^{††}	117 (20.7) 227 (40.6)
Home Health Care	369 (65.2)	87.0	13.0	Difficulty with 2+ ADLs Difficulty and no help with 2+ ADLs	342 (60.4) 136 (24.0)
Vision	141 (24.9)	12.8	87.2	Fair/poor eyesight	170 (30.0)

* Those who received the service were categorized as having met need, those who did not receive the service but said that they needed it were categorized as having unmet need.

** Assessed need was determined using the answers to assessment tools (for depression and cognition) or assessment-type questions (for all other services).

[†] Adult Lifestyles and Function Interview-Mini-Mental State Examination score <17

^{††} 5-item Geriatric Depression Scale score ≥ 2

Perceived need and assessed need for physical therapy and vision were less distinct. Half of participants reported difficulty walking, with 44.9% expressing need for physical therapy. Thirty percent of participants reported fair or poor eyesight, and

a quarter perceived need for vision services. Perceived and assessed need for oral health services were also similar, but for this service there were more participants who perceived need (20.9%) than who reported limiting food due to oral problems (16.8%).

The rate of perceived need for home health care services (65.2%) was higher than the rate of assessed need. Similar to grocery delivery, help with difficulties had an effect on the assessment for this service: the prevalence of perceived need was over twice as high when difficulty with 2 or more ADLs was the assessment (60.4%) compared with when difficulty and no help with 2 or more ADLs was used to determine need (24.0%).

For many of the services, the prevalence of perceived need was significantly higher in those with assessed need, compared with the prevalence of perceived need in those without assessed need. Significantly more participants who reported difficulty using transportation had perceived need for transportation services (25.7%) compared to those with no difficulty (13.9%; $p=0.0006$). Over half (54.4%) of those reporting difficulty walking had perceived need for physical therapy services, which was significantly more than prevalence of perceived need in those with no difficulty (35.3%; $p<0.0001$). Almost half (47.4%) of those who reported limiting their food intake due to oral health problems had perceived need for oral health services, and significantly fewer (15.5%) of those who did not limit intake had perceived need ($p<0.0001$). For home health care, significantly more of those reporting difficulty with 2 or more ADLs had perceived need for the service (73.9%), compared with those reporting difficulty with less than 2 ADLs (51.8%; $p<0.0001$). Of those

reporting difficulty and no help with 2 or more ADLs, 77.9% had perceived need for home health care services, which was again significantly higher than the prevalence of perceived need among those with difficulty and no help for less than 2 ADLs (61.2%; $p=0.0003$). Almost twice as many of the participants reporting fair or poor vision had perceived need for vision services (38.2%, compared with 19.2% of those reporting excellent, very good, or good vision), and this difference was also significant ($p<0.0001$). Comparing those with and without difficulty shopping, there was no significant difference in the proportion that had perceived need for grocery delivery services (6.2% and 6.3%, respectively). However, when using difficulty and no help as the assessment, significantly more of the participants with assessed need also had perceived need (23.1%, compared with 5.4% of those with no difficulty or who had help; $p=0.0034$). There was no significant difference in the proportion of participants with perceived need for mental health services between assessment groups, for both the cognitive assessment and the depression assessment.

Misperceived Need

Table 6 shows misperceived need, defined as perceived need that does not correspond with assessed need. Forty percent of participants had misperceived need for physical therapy services. Just over half (56.3%) of these had difficulty walking but did not perceive need, and 43.7% had perceived need with no difficulty.

Forty percent of participants had misperceived need for mental health services based on the GDS-5. Most of these individuals (97.3%) had assessment-based depressive symptoms, but did not perceive need for mental health services. Fewer participants (22.1%) had misperceived need for mental health services based on the

ALF-MMSE. The majority of those with misperceived need based on the cognitive assessment (91.2%) were assessed with impaired cognition but did not perceive need.

The rate of misperceived need for home health care services based solely on difficulty with 2 or more ADLs was 36.2%. Just under half (43.4%) had 2 or more ADL difficulties but did not perceive need, while 56.6% had fewer than 2 ADL difficulties and perceived that they needed the service. The rate of misperceived need was higher (51.8%) when difficulty and no help with 2 or more ADLs was used as the assessment. In this comparison, a large majority (89.8%) of the misperceived need was from participants who had perceived need for the service but no assessed need.

One-third (33.9%) of participants had misperceived need for transportation services. Almost three-quarters (72.4%) of these participants responded that they had difficulty using transportation, but did not perceive need for the service, while 27.6% had perceived need for the service but no difficulty.

Thirty-two percent of participants had misperceived need for vision services. Of these, 58.0% reported poor vision but no perceived need for services, and 42.0% reported good or excellent vision but had perceived need.

Just over one-fifth (21.7%) of participants had misperceived need for oral health services. Forty percent of these individuals reported limiting their food intake due to oral problems but did not perceive need for services, and sixty percent did not report limiting their intake, but had perceived need.

When only considering whether or not participants had difficulty shopping, the prevalence of misperceived need was highest for grocery delivery (66.6%). However, when taking into account whether or not the participant reported having

help with shopping, the prevalence of misperceived need decreased to 8.7%. In this assessment, those with no difficulty shopping and those who had difficulty but had help were combined. To examine more closely the effect of help on perceived need for those who had difficulty shopping, we also compared perceived need and need defined as difficulty and no help only for those who reported difficulty (n=390). Most of those in this category had help with shopping and did not perceive need for the service (88.7%). There were 20 participants (5.1%) with difficulty shopping who did not have help but did not perceive need, 6 (1.5%) who had no help and did perceive need, and 18 (4.6%) who perceived need even though they reported having help.

Table 5. Prevalence of misperceived need and type of misperception for each service (n=566).

Service Assessment	Misperceived Need* Frequency (Percent)	Type of Misperception	
		<i>Assessed Need with No Perceived Need</i> Percent**	<i>Perceived Need with No Assessed Need</i> Percent**
Grocery Delivery			
<i>Difficulty Shopping</i>	377 (66.6)	366 (97.1)	11 (2.1)
<i>Difficulty Shopping and No Help</i>	49 (8.7)	20 (40.8)	29 (59.2)
Home Health Care			
<i>Difficulty and No Help with 2+ ADLs</i>	293 (51.8)	30 (10.2)	263 (89.8)
<i>Difficulty with 2+ ADLs</i>	205 (36.2)	89 (43.4)	116 (56.6)
Physical Therapy	229 (40.5)	129 (56.3)	100 (43.7)
Mental Health Services			
<i>Depression Assessment</i> [†]	226 (40.4)	220 (97.3)	6 (2.7)
<i>Cognitive Assessment</i>	126 (22.3)	115 (91.3)	11 (8.8)
Transportation Services	192 (33.9)	139 (72.4)	53 (27.6)
Vision Services	181 (32.0)	105 (58.0)	76 (42.0)
Oral Health Services	123 (21.7)	50 (40.7)	73 (59.3)

* Misperceived need is defined as perceived need that does not correspond with assessed need.

** Percent given for type of misperception shows percent of total participants with misperceived need for that service based on an assessment-type question.

† There were 7 participants missing from the depression assessment (n=559).

Chapter 4: Discussion

This sample of older adults returning from the hospital represents a population that is nutritionally at-risk. These individuals tend to be lower income and older, and many have difficulty shopping for or preparing food. Fifteen percent reported anxiety about getting food when they returned home from the hospital, and almost half said they had lost 10 or more pounds in the past 6 months. Those with at least one unmet need were especially at risk, as they were significantly more likely to report being older, non-White, and unable to prepare meals, to have lost at least 10 pounds in the past 6 months, and to have difficulty shopping. Though nutritional risk exists, hospital referrals to older adult nutrition services are uncommon^{4,11} and dietitians are not well utilized in the discharge process¹¹. In our study, almost half of the participants reported unmet need for at least one service that has the potential to impact nutrition status.

We must gain a better understanding of why unmet need exists in this population so that we can more effectively target programs to needy individuals. The questions that can help our understanding of this issue are: 1) Do older adults recognize their own need for help? and 2) Do older adults know about services that can help meet their needs? To help those who do not recognize their own need, we must find effective tools to identify that need. To help those who are unaware of services, we must improve education and outreach.

Unmet Versus Met Perceived Need

Participants reported unmet need for all seven services explored in this study. Home health care and physical therapy had the highest rate of perceived need, and most of this was met need. These may be the services to which recently hospitalized older adults most frequently receive referral or recommendation. However, unmet need for these services still exists: the prevalence was 9.4% for physical therapy and 8.5% for home health care.

Vision services had the highest rate of unmet need (21.8%), and only 18 participants reported receiving vision services. Oral health had the second highest rate of unmet need (19.3%), and only 9 participants reported receiving oral health services. These trends suggest that recently hospitalized older adults feel a need for vision and oral health services that is often overlooked. Increased screening may be necessary for these services.

The rate of overall perceived need for transportation services (17.8%) was almost as high as the rates for oral health and vision, however a higher proportion of this need was met. Nevertheless, 11.3% of the participants reported unmet need for transportation.

Grocery delivery and mental health services showed low prevalence of both perceived need (6.2% and 2.5%, respectively) and unmet need (4.1% and 1.8%, respectively). Need may be low for grocery delivery services in this population, but, as discussed below, the need for mental health services is under-recognized by this population, and intervention from the healthcare community may be necessary.

Perceived Need Versus Assessed Need

For all services except for mental health, there were significantly more participants who reported perceived need for the service within the group with assessed need, compared with the amount of perceived need among those without assessed need. This suggests some level of relationship between participants' perceived need and the answers to these assessment-type questions. However, for every service, there were participants for whom perceived need and assessed need did not correspond. We will explore these differences and possible explanations for the discrepancies.

By comparing perceived need for a service with assessed need, we can see that the method used to determine need via self-report can impact the response given. The following is a discussion of each service area and the differences observed between the participants' perception of need and the level of need based on an objective assessment. When perceived need and assessed need did not match, we refer to an individual as having 'misperceived need'. Though, for the most part, our assessment measures are not validated, they provide a more objective perspective on need. Misperceived need in this study represents discrepancy between a participant's report of a problem or disability that may be addressed by a particular service, and whether or not they perceive need for that service.

Grocery Delivery

Over ten times the number of participants who had perceived need for grocery delivery services reported difficulty shopping. However, a large majority of those with difficulty shopping reported having help, and when difficulty shopping with no

help was used as the assessment measure, the rate of assessed need decreased to be lower than the rate of perceived need.

Misperceived need was much higher when comparing perceived need with assessed need defined as difficulty shopping than when comparing it with need defined as difficulty shopping with no help. Almost all of the misperceived need based on difficulty shopping was assessed need with no perceived need, suggesting that most of those with difficulty shopping did not think they needed grocery delivery services. The decrease in misperceived need that occurred when the question about help was taken into account shows that having help with grocery shopping plays a large role in whether or not this population feels they require services to help them get groceries.

Of those with misperceived need based on the difficulty shopping and no help, the majority was perceived need with no assessed need. Since the category of those with no assessed need included both those with no difficulty and those with difficulty who had help, we did a comparison without the participants with no difficulty to determine whether any of those who did have difficulty perceived need for the service despite having help. There were 18 participants who reported perceived need even though they said they had help with shopping. This raises the complicating issue of whether or not the help an individual has is sufficient. A study by LaPlante et al found that most people reporting unmet ADL need got some help, but that it was not all of the help they needed. The authors state that the issue is not whether those with needs get help, but how much help they get²⁷.

These results demonstrate the importance of asking questions that provide the most complete picture of an individual's situation in order to determine need. In the instance of grocery delivery services, this may include difficulty shopping, what help is available, and whether that help is sufficient and consistent.

Transportation

One-third of the sample reported that they had at least some difficulty riding in a car or taking transportation for seniors, however only 17.8% said they used or needed transportation services. Of those with misperceived need, a large proportion had assessed need but did not perceive need. These individuals may have had assistance and thus did not perceive the need for services, but the survey did not ask for information about help with transportation difficulty. It is also possible that, although these individuals had difficulty, they did not perceive need for the service because they did not feel they had any reason to leave their home. Having assistance with mobility may improve their engagement in the community.

Most of the perceived need for transportation in this sample was unmet. Poor access to transportation restricts access to food and community resources, and has been associated with nutritional risk³⁴ as well as functional deterioration³⁵ in community-dwelling older adults. The nutritional status of an older adult – especially one who does not have severe disabilities – may improve if they have assistance with transportation, allowing them to access grocery stores and community resources, such as congregate meals. Transportation is also a factor in social support, especially for older adults in rural areas³⁶, and research has shown a relationship between social support and both functional decline³⁷ and eating behaviors³⁸. It is important that the

population of older adults living at home is educated about the potential uses and benefits of transportation services so that they will take advantage of any assistance that is offered.

Physical Therapy

A relatively large percentage of participants had perceived need for physical therapy (44.9%). Twenty percent of this perceived need was unmet need, indicating that this population may not actively seek out physical therapy services or may have difficulty accessing them. Half of the participants reported at least some difficulty walking. Previous research has shown that measures of walking ability based on self-report may underestimate functional ability, compared with performance-based measures³⁹. Based on these findings, it is likely that the assessment question asking how much difficulty participants had walking underestimated the true level of difficulty in the sample.

Though the sample as a whole showed similar rates of perceived need and assessed need, perceived and assessed need for each individual did not necessarily coincide: 40.5% of the sample had misperceived need for physical therapy. The portion of the sample who perceived need for physical therapy but did not report any difficulty with walking (43.7%) may have had another physical ailment that they felt could be addressed with physical therapy. Ability to walk was chosen as the assessment tool in this study due to its potential relationship with nutritional risk, as difficulty with walking could result in difficulty with shopping or cooking. Physical function status has been associated with food insecurity, and is considered part of the special nature of food insecurity experienced by older adults⁴⁰.

The more concerning type of misperceived need for this service was difficulty walking with no perceived need for physical therapy. One hundred twenty-nine participants (56.3% of those with misperceived need) recognized that they had at least some difficulty walking, but did not feel they needed physical therapy services. There is a possibility that some participants felt their disability was too severe to be addressed by physical therapy, or, on the other hand, knew they had difficulty but did not think it was enough of a problem to require any sort of treatment. The latter explanation would be in line with the findings of Walters, Iliffe, and Orrell, who found themes of resignation and low expectations in older adults who did not seek help for their needs. There also may have been some participants who were unaware that physical therapy could help them with their ability to walk, or that their ability to walk has consequences for their quality of life. Walking gait speed has been associated with survival in older adults⁴¹, and difficulty walking has been associated with both mortality and nursing home admission⁴².

Physical therapy can improve balance and strength, preventing falls and fractures, and improving older individuals' odds against further functional and nutritional decline. This is especially important for those leaving the hospital, as older adults are likely to decline in functional abilities while hospitalized⁵. It is important to educate those who are leaving the hospital about the availability of physical therapy and how it can help maintain their health at home. Screening for physical function disabilities upon discharge can help prevent unmet need, and may require performance-based measures, as older adults may under-report physical disability.

Home Health Care

Perceived need for home health care was higher than the perceived need for any other service: 65.2% of participants either received the service or said that they needed it. The rate of assessed need was similar when measured using difficulty with two or more ADLs as the assessment (60.4%), but was much lower when using difficulty and no help with two or more ADLs (24.0%). Misperceived need was lower when need was defined as difficulty with ADLs. These differences suggest that this population perceives their need for home health care based on the difficulties they have with ADLs, whether or not they have help. This may be because the help that they do have is insufficient. LaPlante et al found that over 85% of the assistance older adults were receiving was informal, unpaid help²⁷. This type of assistance may not be as consistent or reliable as a formal home health care service. This trend in misperceived need contrasts with that seen in difficulty shopping. This suggests that participants found the assistance they had with shopping to be adequate, and consequently they did not need grocery delivery services, but that the assistance they had with ADLs was not adequate.

When determining the need for home health care services, it is important to take into consideration the help an older adult has with ADLs, but it is also important to qualify whether that help is reliable and consistent. Unmet need may arise if it is assumed that those with informal help with ADLs do not need home health care services.

Oral Health

One-fifth of the participants showed perceived need for oral health services. The rate of misperceived need for this service was the lowest, at 21.7%. Interestingly, there was also a high rate of unmet need for oral health services. This implies that these older adults recognize that they have oral health problems and many are willing to express a need for care, but that they are not receiving oral health services.

Research has shown that poorer dentition is associated with lower nutritional status⁴³. Difficulty chewing and oral pain can discourage afflicted individuals from eating, or cause preference for softer foods, which tend to be less nutritious. The assessment question used in this study confirms that oral health can affect food intake in this population: 16.8% of participants reported that they limit the kind or amount of food they eat because of problems with their teeth, dentures, or partial plates. This is comparable to results of a recent study showing that 17.3% of a sample of homebound older adults reported always or often limiting their food intake due to problems with their teeth or dentures⁴⁴. In the same study, 93.5% of the subjects answered yes when asked, “Are you interested in home-based dental care?” This is much higher than the rate of interest in the present study, which could be due to the extra detail provided in the question: inquiring specifically about home-based dental care may make it much more appealing to someone who has difficulty leaving their home. It could also be due to the phrasing “are you interested in”, as compared to the “do you need” phrasing of the question in the present study. Asking about interest rather than need implies less of a commitment and may prevent an individual from

feeling inclined to minimize his or her problems. On the other hand, simply asking about “interest” in a service is a less specific approach to capturing need. These technicalities in phrasing and information provided in a question are important to consider when trying to obtain an accurate depiction of need via self-report.

Despite the prevalence of difficulties with oral health and the interest in oral health services, unmet need is high for dental care. There is a need for oral healthcare services for homebound older adults⁴⁴. Programs are developing throughout the United States, aiming to bring education and oral health services to older adults and their caregivers. Until home-based dental services are common, transportation services may help in provide older adults with access to dental health specialists to improve their ability to chew⁴⁵.

Mental Health

Only 2.3% of the older adults in this study received or reported need for mental health services, however 20.7% had impaired cognition and 40.6% had depressive symptoms. These assessments were based on validated assessment tools. Our results suggest that older adults do not recognize or acknowledge that they have mental health issues to address, or they do not think that mental health services can help them. A study by Black et al that showed a high prevalence of unmet need for older adult mental health care also found little concordance (3%) between a current psychiatric disorder and a self-rated mental health status of poor/very bad. Based on these results, the authors hypothesized that older adults may not seek out care or accept services because they do not recognize or acknowledge that they have a mental health problem⁴⁶. The authors also state that physicians and nurses may not recognize

that those in need could benefit from mental health services for various reasons, including lack of knowledge about older adult mental health problems, the attribution of psychiatric symptoms to normal aging, or the minimization of psychiatric symptoms by the individuals themselves. Mental health service use is complicated beyond the scope of the current study, however our results show that older adults are unlikely to perceive themselves as needing mental health services, though need exists based on assessments.

Depression has been associated with functional impairment⁴⁷, decreased appetite⁴⁸ and malnutrition⁴⁹ in community-dwelling older adults. Cognitive status has been associated with functional status decline³⁷, and thus can contribute to nutritional risk. Psychotherapy can be effective to treat depression in older adults, but is infrequently prescribed⁴⁷. Research has also shown that cognitive training can improve both self-reported and performance-based measures of daily function and cognitive abilities⁵⁰. Medication to treat mental health problems may interfere with nutritional status, but this can be prevented or postponed by catching mental health decline in its earlier stages and treating it before medication becomes necessary. Screening older adults who are leaving the hospital for mental health needs can help determine who may benefit from services. Screening by an informed healthcare professional is especially important given that older adults are unlikely to recognize their own need or seek services independently.

Vision

A quarter of participants either received vision services or said they needed them. When compared with participants' responses when asked to rate their vision, 32.0% had misperceived need. Over 100 participants reported that their vision was "fair" or "poor" but did not say they needed vision services, and 76 participants rated their vision as "good" or better, but said that they needed the service. The most likely reasons for these differences include the subjective nature of rating one's own vision, and lack of participant recognition of how vision services would be helpful to them.

There is no available research in the literature on the relationship between vision and nutritional risk. However, it is reasonable to infer that difficulty seeing would interfere with activities such as getting to the grocery store, reading labels and menus, and cooking. Additionally, poor vision is associated with risk of falls⁵¹, which may lead to functional decline, and established risk factor for decreased nutritional status.

In this sample, vision services showed the highest rate of unmet need. Vision screening is relatively straightforward, given that ocular function is immediately apparent, and some problems can be quickly addressed with glasses. Vision has wide-reaching implications, for nutritional risk and beyond, and addressing this area of unmet need among community-dwelling older adults has the potential to improve their health and quality of life⁵².

Implications

There is unmet need for nutrition-related services in the population of older adults returning from the hospital, in addition to nutritional risk factors, such as

difficulty shopping, difficulty cooking, and weight loss. The data presented in this study show the complexity of identifying need for services in this population. We know that these individuals are at risk, and yet many are not receiving support. Why is this and what can we do to reduce unmet need? The GAO has recommended that efforts be made to develop consistent definitions of need and unmet need and to propose procedures for collecting data on unmet need for HCBS. By determining the best way to measure need, we can develop more efficient screening methods that can be used to target services to those who would benefit most.

Current widely used care models focused on providing services to older adults transitioning back into the community do not emphasize nutrition services⁵³. MFP is a Medicaid-based model that is being implemented in many states, and some states offer nutrition services, however utilization is low¹². In the MFP program participants select the services they will receive, however our data suggest older adults may not recognize some of their needs. Many reported difficulties, but then did not perceive need for services that could help them with these difficulties.

Reasons for not pursuing HCBSs among this population include individuals not understanding or accepting their needs (due to denial of or resignation to their problems)²⁸ and not knowing how to access services (services may not conduct enough outreach or an individual may not know how to request them)^{28,54}. The root of these reasons is a lack of education of older adults, caretakers, and healthcare providers about factors affecting nutritional status and the HCBSs that are available to help. In 2010, Casado, van Vulpen, and Davis examined data from the National Long-Term Care Survey to explore the reasons why caregivers of older adults were

not using HCBS⁵⁴. They found that “Lack of service awareness” was the most reported cause among those with unmet need. The authors state that lack of awareness could have been an underlying cause to two other often-reported reasons: “No special reason or never thought of it” and “Service not available”. Locher et al state that those who are better educated may be better informed about the quality of their diet and the impact that diet has on health³⁴. Though these researchers are referring to general education, well-designed and well-targeted nutrition education interventions have the potential to improve nutrition knowledge and empower older adults⁵⁵.

Education of patients may also help address the mindset of resignation or denial that could prevent older adults from seeking help. For every assessment we used, there were individuals who had difficulties, but who did not express interest in the corresponding service. Previous research on help-seeking behavior in older adults and their caretakers showed that many of the study subjects had low motivation to seek help, with a strong sense of resignation, withdrawal, and low expectations. They may minimize a problem, especially when they feel embarrassed about it, or attribute it to age-related changes. Others did not pursue services because they lacked information on what was available or whom they should approach²⁸. These trends in older adult mentality suggest a need for objective screening for services upon hospital discharge, as well as education of patients and caretakers. Involving dietitians in the discharge process can facilitate detection of nutritional risk, education of clients on appropriate actions to address it, and referral to HCBSs.

Our study had some limitations, given that it was a secondary analysis based on pre-existing data. We were unable to explore the reasons participants who had difficulties did not express need for services. For questions asking whether or not the participant had help, we do not have information on how much help they received. Older adults receiving assistance do not always get all the help they need¹⁸, and so assuming that those who have help are not at need may underestimate need for services. Additionally, the assessment measures (except for the mental health assessments), were based on self-report, and so were not truly objective assessments. However, this means we were able to look at the different perspectives this population has on their own need. We can see that, though an individual may recognize that they have an issue, they do not always perceive need for a service that may help address it. Another limitation is that a proxy was used for 13.6% of the participants, and so some of the responses reflect the perception of a family member or spouse/life partner.

This study was an initial exploration into perceived and unmet needs for services that can affect nutrition status. With the information available, and considering the complexity of unmet need in recently hospital-discharged older adults, we were only able to skim the surface of the issues surrounding each service. Each of the services explored has been studied in this population in some capacity, but research is sparse on their relationship with nutritional risk. In order to continue to find ways to minimize nutritional risk in community-dwelling older adults, more research must be done investigating barriers to obtaining help with nutrition-related services. We need more information older adults' knowledge about the impact of

nutrition on their health and how different services might help them fill in nutritional gaps, as well as the effect of education about these issues on help-seeking behavior and service use. Research on how those with unmet needs cope with their problems can also provide insight into help-seeking behavior.

Summary of Main Points

- There is unmet need for nutrition-related services in the population of older adults who are returning home from the hospital.
- There is inconsistency in older adults' own perceived need and their answers to assessment-type questions that indicate need for services.
- Recently hospital-discharged older adults may recognize their immediate difficulties, but may not be knowledgeable of what help is available or appropriate, nor the importance of addressing these needs for health-recovery. Consequently, the healthcare system must examine their approach to providing for the nutritional needs of these individuals. Hospital dietitians can be a valuable resource for assessment and education in the discharge process.

Appendix 1: Proxy Information

A proxy (substitute respondent) was used for 77 participants (13.6%). The following table shows the relationship of the proxies to the individuals they represented, as reported in the survey.

Proxy relationships to respondents: number reporting a relationship and percentage of total proxies reporting that relationship (n=77).

Proxy Relationship	Number	Percent of Proxies
Spouse/Life Partner	29	37.7
Son/Daughter	39	50.7
Son-/Daughter-in-law	1	1.3
Grandchild/Great Grandchild	2	2.6
Brother/Sister	1	1.3
Niece/Nephew	1	1.3
Roommate/Friend/Neighbor	2	2.6
Don't know/Unsure	2	2.6

Appendix 2: Assessment Questions

The following questions are from the Community Connections Demonstration Project, conducted in 2005-2006 by Sahyoun et al³⁰.

Grocery Delivery

PHYFUN12A. How much difficulty do you have shopping (for food and clothes) (READ OUT FIRST 4 RESPONSES TO PARTICIPANT AND SHOW CARD)?

No difficulty.....1 (NEXT QUESTION IS PHYFUN13A)
Some difficulty.....2 (NEXT QUESTION IS PHYFUN12B)
A lot of difficulty.....3 (NEXT QUESTION IS PHYFUN12B)
Unable to do.....4 (NEXT QUESTION IS PHYFUN12B)
NEVER DOES FOR OTHER REASONS.....5 (NEXT QUESTION IS PHYFUN13A)
Don't know.....77 (NEXT QUESTION IS PHYFUN13A)
Refused.....88 (NEXT QUESTION IS PHYFUN13A)

PHYFUN12B. Is someone available to help?

No.....1 (NEXT QUESTION IS PHYFUN12C)
Yes.....2 (NEXT QUESTION IS PHYFUN13A)
Don't know....77 (NEXT QUESTION IS PHYFUN13A)
Refused88 (NEXT QUESTION IS PHYFUN13A)

Home Health Care

PHYFUN1A. Because of a health or physical impairment how much difficulty do you have bathing or showering (READ OUT FIRST 4 RESPONSES TO PARTICIPANT AND SHOW CARD)?

No difficulty.....1 (NEXT QUESTION IS PHYFUN2A)
Some difficulty.....2 (NEXT QUESTION IS PHYFUN1B)
A lot of difficulty.....3 (NEXT QUESTION IS PHYFUN1B)
Unable to do.....4 (NEXT QUESTION IS PHYFUN1B)
NEVER DOES FOR OTHER REASONS...5 (NEXT QUESTION IS PHYFUN2A)
Don't know.....77 (NEXT QUESTION IS PHYFUN2A)
Refused.....88 (NEXT QUESTION IS PHYFUN2A)

PHYFUN1B. Is someone available to help?

No.....1 (NEXT QUESTION IS PHYFUN1C)
Yes.....2 (NEXT QUESTION IS PHYFUN2A)
Don't know....77 (NEXT QUESTION IS PHYFUN2A)
Refused88 (NEXT QUESTION IS PHYFUN2A)

PHYFUN2A. How much difficulty do you have dressing or undressing (READ OUT FIRST 4 RESPONSES TO PARTICIPANT AND SHOW CARD)?

No difficulty.....1 (NEXT QUESTION IS PHYFUN3A)
Some difficulty.....2 (NEXT QUESTION IS PHYFUN2B)
A lot of difficulty.....3 (NEXT QUESTION IS PHYFUN2B)

Unable to do.....4 (NEXT QUESTION IS PHYFUN2B)
NEVER DOES FOR OTHER REASONS.....5 (NEXT QUESTION IS
PHYFUN3A)
Don't know.....77 (NEXT QUESTION IS PHYFUN3A)
Refused.....88 (NEXT QUESTION IS PHYFUN3A)

PHYFUN2B. Is someone available to help?

No.....1 (NEXT QUESTION IS PHYFUN2C)
Yes.....2 (NEXT QUESTION IS PHYFUN3A)
Don't know....77 (NEXT QUESTION IS PHYFUN3A)
Refused88 (NEXT QUESTION IS PHYFUN3A)

PHYFUN3A. How much difficulty do you have taking care of your personal appearance (READ OUT FIRST 4 RESPONSES TO PARTICIPANT AND SHOW CARD)?

No difficulty.....1 (NEXT QUESTION IS PHYFUN4A)
Some difficulty.....2 (NEXT QUESTION IS PHYFUN3B)
A lot of difficulty.....3 (NEXT QUESTION IS PHYFUN3B)
Unable to do.....4 (NEXT QUESTION IS PHYFUN3B)
NEVER DOES FOR OTHER REASONS.....5 (NEXT QUESTION IS
PHYFUN4A)
Don't know.....77 (NEXT QUESTION IS PHYFUN4A)
Refused.....88 (NEXT QUESTION IS PHYFUN4A)

PHYFUN3B. Is someone available to help?

No.....1 (NEXT QUESTION IS PHYFUN3C)
Yes.....2 (NEXT QUESTION IS PHYFUN4A)
Don't know....77 (NEXT QUESTION IS PHYFUN4A)
Refused88 (NEXT QUESTION IS PHYFUN4A)

PHYFUN4A. How much difficulty do you have using the toilet, including getting to the toilet (READ OUT RESPONSES TO PARTICIPANT OR SHOW CARD)?

No difficulty.....1 (NEXT QUESTION IS PHYFU5A)
Some difficulty.....2 (NEXT QUESTION IS PHYFUN4B)
A lot of difficulty.....3 (NEXT QUESTION IS PHYFUN4B)
Unable to do.....4 (NEXT QUESTION IS PHYFUN4B)
NEVER DOES FOR OTHER REASONS.....5 (NEXT QUESTION IS
PHYFUN5A)
Don't know.....77 (NEXT QUESTION IS PHYFUN5A)
Refused.....88 (NEXT QUESTION IS PHYFUN5A)

PHYFUN4B. Is someone available to help?

No.....1 (NEXT QUESTION IS PHYFUN4C)
Yes.....2 (NEXT QUESTION IS PHYFUN5A)
Don't know....77 (NEXT QUESTION IS PHYFUN5A)
Refused88 (NEXT QUESTION IS PHYFUN5A)

PHYFUN5A. How much difficulty do you have getting in and out of bed (READ OUT RESPONSES TO PARTICIPANT OR SHOW CARD)?

No difficulty.....1 (NEXT QUESTION IS PHYFUN6A)

Some difficulty.....2 (NEXT QUESTION IS PHYFUN5B)
A lot of difficulty.....3 (NEXT QUESTION IS PHYFUN5B)
Unable to do.....4 (NEXT QUESTION IS PHYFUN5B)
NEVER DOES FOR OTHER REASONS.....5 (NEXT QUESTION IS
PHYFUN6A)
Don't know.....77 (NEXT QUESTION IS PHYFUN6A)
Refused.....88 (NEXT QUESTION IS PHYFUN6A)

PHYFUN5B. Is someone available to help?

No.....1 (NEXT QUESTION IS PHYFUN5C)
Yes.....2 (NEXT QUESTION IS PHYFUN6A)
Don't know....77 (NEXT QUESTION IS PHYFUN6A)
Refused88 (NEXT QUESTION IS PHYFUN6A)

**PHYFUN6A. How much difficulty do you have walking across the room (READ
OUT RESPONSES TO PARTICIPANT OR SHOW CARD)?**

No difficulty.....1 (NEXT QUESTION IS PHYFUN7A)
Some difficulty.....2 (NEXT QUESTION IS PHYFUN6B)
A lot of difficulty.....3 (NEXT QUESTION IS PHYFUN6B)
Unable to do.....4 (NEXT QUESTION IS PHYFUN6B)
NEVER DOES FOR OTHER REASONS.....5 (NEXT QUESTION IS
PHYFUN7A)
Don't know.....77 (NEXT QUESTION IS PHYFUN7A)
Refused.....88 (NEXT QUESTION IS PHYFUN7A)

PHYFUN6B. Is someone available to help?

No.....1 (NEXT QUESTION IS PHYFUN6C)
Yes.....2 (NEXT QUESTION IS PHYFUN7A)
Don't know....77 (NEXT QUESTION IS PHYFUN7A)
Refused88 (NEXT QUESTION IS PHYFUN7A)

**PHYFUN7A. How much difficulty do you have eating (READ OUT RESPONSES
TO PARTICIPANT OR SHOW CARD)?**

No difficulty.....1 (NEXT QUESTION IS PHYFUN8A)
Some difficulty.....2 (NEXT QUESTION IS PHYFUN7B)
A lot of difficulty.....3 (NEXT QUESTION IS PHYFUN7B)
Unable to do.....4 (NEXT QUESTION IS PHYFUN7B)
NEVER DOES FOR OTHER REASONS.....5 (NEXT QUESTION IS
PHYFUN8A)
Don't know.....77 (NEXT QUESTION IS PHYFUN8A)
Refused.....88 (NEXT QUESTION IS PHYFUN8A)

PHYFUN7B. Is someone available to help?

No.....1 (NEXT QUESTION IS PHYFUN7C)
Yes.....2 (NEXT QUESTION IS PHYFUN8A)
Don't know....77 (NEXT QUESTION IS PHYFUN8A)
Refused88 (NEXT QUESTION IS PHYFUN8A)

Transportation

PHYFUN13A. How much difficulty do you have riding in a car or taking transportation for seniors (READ OUT FIRST 4 RESPONSES TO PARTICIPANT AND SHOW CARD)?

- No difficulty.....1 (NEXT QUESTION IS PHYFUN14A)
- Some difficulty.....2 (NEXT QUESTION IS PHYFUN13B)
- A lot of difficulty.....3 (NEXT QUESTION IS PHYFUN13B)
- Unable to do.....4 (NEXT QUESTION IS PHYFUN13B)
- NEVER DOES FOR OTHER REASONS.....5 (NEXT QUESTION IS PHYFUN14A)
- Don't know.....77 (NEXT QUESTION IS PHYFUN14A)
- Refused.....88 (NEXT QUESTION IS PHYFUN14A)

Mental Health

Depression

DEPASSMT1. Are you basically satisfied with your life?

- No.....1 (NEXT QUESTION IS DEPASSMT2)
- Yes.....2 (NEXT QUESTION IS DEPASSMT2)
- Don't know....77 (NEXT QUESTION IS DEPASSMT2)
- Refused88 (NEXT QUESTION IS DEPASSMT2)

DEPASSMT2. Do you often get bored?

- No.....1 (NEXT QUESTION IS DEPASSMT3)
- Yes.....2 (NEXT QUESTION IS DEPASSMT3)
- Don't know....77 (NEXT QUESTION IS DEPASSMT3)
- Refused88 (NEXT QUESTION IS DEPASSMT3)

DEPASSMT3. Do you often feel helpless?

- No.....1 (NEXT QUESTION IS DEPASSMT4)
- Yes.....2 (NEXT QUESTION IS DEPASSMT4)
- Don't know....77 (NEXT QUESTION IS DEPASSMT4)
- Refused88 (NEXT QUESTION IS DEPASSMT4)

DEPASSMT4. Do you prefer to stay at home rather than going out and doing new things?

- No.....1 (NEXT QUESTION IS DEPASSMT5)
- Yes.....2 (NEXT QUESTION IS DEPASSMT5)
- Don't know....77 (NEXT QUESTION IS DEPASSMT5)
- Refused88 (NEXT QUESTION IS DEPASSMT5)

DEPASSMT5. Do you feel pretty worthless the way you are now?

- No.....1 (NEXT QUESTION IS DEPASSMT6)
- Yes.....2 (NEXT QUESTION IS DEPASSMT6)
- Don't know....77 (NEXT QUESTION IS DEPASSMT6)
- Refused.....88 (NEXT QUESTION IS DEPASSMT6)

Cognitive Health

COGASSMT1. What year are we in?

Answered correctly.....1 (NEXT QUESTION IS COGASSMT2)
Answered incorrectly.....2 (NEXT QUESTION IS COGASSMT2)
Don't know.....77 (NEXT QUESTION IS COGASSMT2)
Refused88 (NEXT QUESTION IS COGASSMT2)

COGASSMT2. What season are we in?

Answered correctly.....1 (NEXT QUESTION IS COGASSMT3)
Answered incorrectly.....2 (NEXT QUESTION IS COGASSMT3)
Don't know.....77 (NEXT QUESTION IS COGASSMT3)
Refused88 (NEXT QUESTION IS COGASSMT3)

COGASSMT3. What month are we in?

Answered correctly.....1 (NEXT QUESTION IS COGASSMT4)
Answered incorrectly.....2 (NEXT QUESTION IS COGASSMT4)
Don't know.....77 (NEXT QUESTION IS COGASSMT4)
Refused88 (NEXT QUESTION IS COGASSMT4)

COGASSMT4. What is today's date?

Answered correctly.....1 (NEXT QUESTION IS COGASSMT5)
Answered incorrectly.....2 (NEXT QUESTION IS COGASSMT5)
Don't know.....77 (NEXT QUESTION IS COGASSMT5)
Refused88 (NEXT QUESTION IS COGASSMT5)

COGASSMT5. What day of the week is it today?

Answered correctly.....1 (NEXT QUESTION IS COGASSMT6)
Answered incorrectly.....2 (NEXT QUESTION IS COGASSMT6)
Don't know.....77 (NEXT QUESTION IS COGASSMT6)
Refused88 (NEXT QUESTION IS COGASSMT6)

COGASSMT6. What state are we in?

Answered correctly.....1 (NEXT QUESTION IS COGASSMT7)
Answered incorrectly.....2 (NEXT QUESTION IS COGASSMT7)
Don't know.....77 (NEXT QUESTION IS COGASSMT7)
Refused88 (NEXT QUESTION IS COGASSMT7)

COGASSMT7. What county or district are we in?

Answered correctly.....1 (NEXT QUESTION IS COGASSMT8)
Answered incorrectly.....2 (NEXT QUESTION IS COGASSMT8)
Don't know.....77 (NEXT QUESTION IS COGASSMT8)
Refused88 (NEXT QUESTION IS COGASSMT8)

COGASSMT8. What city or town are we in?

Answered correctly.....1 (NEXT QUESTION IS COGASSMT9)
Answered incorrectly.....2 (NEXT QUESTION IS COGASSMT9)
Don't know.....77 (NEXT QUESTION IS COGASSMT9)
Refused88 (NEXT QUESTION IS COGASSMT9)

COGASSMT9. What is the name of the community you live in?

Answered correctly.....1 (NEXT QUESTION IS COGASSMT10)
Answered incorrectly.....2 (NEXT QUESTION IS COGASSMT10)
Don't know.....77 (NEXT QUESTION IS COGASSMT10)
Refused88 (NEXT QUESTION IS COGASSMT10)

COGASSMT10. What is the house number of the street you live on?

Answered correctly.....1 (NEXT QUESTION COGASSMT11)
Answered incorrectly.....2 (NEXT QUESTION COGASSMT11)
Don't know.....77 (NEXT QUESTION COGASSMT11)
Refused88 (NEXT QUESTION COGASSMT11)

COGASSMT11A. I am going to name 3 objects and would like you repeat them after me. Are you ready? INTERVIEWER: SAY 'APPLE, 'PENNY', 'TABLE

Respondent repeated all three objects at 1st try1 (NEXT QUESTION IS COGASSMT11B)
Respondent repeated all three objects after more than one attempt.....2 (NEXT QUESTION IS COGASSMT11B)
Respondent was unable to repeat all three Objects.....3 (NEXT QUESTION IS COGASSMT12A)
Refused.....88 (NEXT QUESTION IS COGASSMT12A)

COGASSMT11B. Record the number of trials needed for respondent to repeat all three, object names.

COGASSMT12A. Please count backwards from 20 by 3.

INTERVIEWER: WHEN RESPONDENT IS COUNTING BACK FROM 20, LISTEN UNTIL RESPONDENT COUNTS TILL '2'. STOP RESPONDENT, CODE AND CONTINUE WITH QUESTIONNAIRE). ANSWER: 20...17...14...11...8....5....2

Respondent got 1 number correct.....1 (NEXT QUESTION IS COGASSMT13)
Respondent got 2 numbers correct.....2 (NEXT QUESTION IS COGASSMT13)
Respondent got 3 numbers correct3 (NEXT QUESTION IS COGASSMT13)
Respondent got 4 numbers correct.....4 (NEXT QUESTION IS COGASSMT13)
Respondent got 5 numbers correct.....5 (NEXT QUESTION IS COGASSMT13)
Respondent was unable to count back...6 (NEXT QUESTION IS COGASSMT12B)
Refused.....88 (NEXT QUESTION IS COGASSMT13)

COGASSMT12B. Please spell the word "world" backwards.

CORRECT ANSWER: DLROW

Respondent got 1 letter in the sequence correct.....1 (NEXT QUESTION IS COGASSMT13)
Respondent got 2 letters in the sequence correct2

(NEXT QUESTION IS COGASSMT13)
 Respondent got 3 letters in the sequence correct.....3
 (NEXT QUESTION IS COGASSMT13)
 Respondent got 4 letters in the sequence correct.....4
 (NEXT QUESTION IS COGASSMT13)
 Respondent got all letters in the sequence correct5
 (NEXT QUESTION IS COGASSMT13)
 Respondent did not get one any letters in the sequence correct.....6
 (NEXT QUESTION IS COGASSMT13)
 Refused.....88
 (NEXT QUESTION IS COGASSMT13)

COGASSMT13. Please repeat the names of the 3 objects that I gave to you a few minutes ago.

Respondent recalled 1 object correctly..... 1
 (NEXT QUESTION IS COGASSMT14)
 Respondent recalled 2 objects correctly.....2
 (NEXT QUESTION IS COGASSMT14)
 Respondent recalled 3 objects correctly.....3
 (NEXT QUESTION IS COGASSMT14)
 Respondent was unable to recall any object correctly.....4
 (NEXT QUESTION IS COGASSMT14)
 Refused.....88
 (NEXT QUESTION IS COGASSMT14)

**COGASSMT14. Please tell me what this object is.
 INTERVIEWER: SHOW THE RESPONDENT A WATCH.**

Respondent correctly identified 1 object.....1
 (NEXT QUESTION IS COGASSMT15)
 Respondent did not correctly identify the object2
 (NEXT QUESTION IS COGASSMT15)
 Refused.....88
 (NEXT QUESTION IS COGASSMT15)

COGASSMT15. Please repeat the following phrase: “No ifs, ands, or buts”.

Respondent able to repeat the phrase in one try....1
 (NEXT QUESTION IS SKIP2)
 Respondent unable to repeat the phrase in one try.....2
 (NEXT QUESTION IS SKIP2)
 Refused.....88
 (NEXT QUESTION IS SKIP2)

Oral Health

GENHLTH28. How often do you limit the kind or amount of food you eat because of problems with your teeth or dentures or partial plates? Would you say (READ OUT RESPONSE OPTIONS TO PARTICIPANT AND SHOW CARD):

Always.....1 (NEXT QUESTION IS GENHLTH29)
 Very often.....2 (NEXT QUESTION IS GENHLTH29)
 Sometimes.....3 (NEXT QUESTION IS GENHLTH29)

Seldom.....4 (NEXT QUESTION IS GENHLTH29)
Never.....5 (NEXT QUESTION IS GENHLTH29)
Don't know.....77 (NEXT QUESTION IS GENHLTH29)
Refused.....88 (NEXT QUESTION IS GENHLTH29)

Vision

GENHLTH15. How is your eyesight (with glasses or contacts if you wear them)?

Excellent.....1 (NEXT QUESTION IS GENHLTH16)
Very good.....2 (NEXT QUESTION IS GENHLTH16)
Good.....3 (NEXT QUESTION IS GENHLTH16)
Fair.....4 (NEXT QUESTION IS GENHLTH16)
Poor.....5 (NEXT QUESTION IS GENHLTH16)
Don't know.....77 (NEXT QUESTION IS GENHLTH16)
Refused88 (NEXT QUESTION IS GENHLTH16)

Physical Therapy

PHYFUN6A. How much difficulty do you have walking across the room (READ OUT RESPONSES TO PARTICIPANT OR SHOW CARD)?

No difficulty.....1 (NEXT QUESTION IS PHYFUN7A)
Some difficulty.....2 (NEXT QUESTION IS PHYFUN6B)
A lot of difficulty.....3 (NEXT QUESTION IS PHYFUN6B)
Unable to do.....4 (NEXT QUESTION IS PHYFUN6B)
NEVER DOES FOR OTHER REASONS.....5 (NEXT QUESTION IS PHYFUN7A)
Don't know.....77 (NEXT QUESTION IS PHYFUN7A)
Refused.....88 (NEXT QUESTION IS PHYFUN7A)

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