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Self-Reported vs. Performance-Based Assessments of a Simple Mobility Task among Older Adults in the Emergency Department**Kyle M. Roedersheimer, BS,**

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Abstract

Background—Accurate information about the mobility of independently-living older adults is essential in determining whether they may be safely discharged home from the emergency department (ED). We assessed the accuracy of self-reported ability to complete a simple mobility task among older ED patients.

Methods—This was a cross-sectional study of cognitively intact patients aged 65 years and older who were neither nursing home residents nor critically ill conducted in two academic EDs. Consenting participants were asked whether they could get out of bed, walk 10 feet, turn around, and get back in bed without assistance, and if not, whether they could perform this task with a cane, walker, or human assistance. Each participant was then asked to perform the task and was provided with a mobility device or human assistance as needed.

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Results—Of 272 patients who met eligibility criteria and answered the physical task question, 161 (59%) said they could do the task unassisted, 45 (17%) said they could do it with a cane or walker, 21 (8%) said they could do it with human assistance, and 45 (17%) said they would be unable to do it even with human assistance. Among those who said they could do the task either with or without assistance and who were subsequently willing to attempt the task (N=172), discrepancies between self-reported ability and actual performance were common. Of those who said they could perform the task without assistance, 12% required some assistance or were unable to complete the task. Of those who said they could perform the task with a cane or walker, 48% required either human assistance or were unable to perform the task. Of those who said they could perform the task with human assistance, 24% were unable to perform the task even with human assistance.

Conclusion—In this sample of older adults receiving care in the ED, the accuracy of their self-reported ability to perform a simple mobility task was poor, particularly for those who reported some need for assistance. For older adults being considered for discharge who report a need for assistance with mobility, direct observation of the patient's mobility by a member of the emergency care team should be considered.

Keywords

geriatrics; emergency medicine; mobility limitation; walking

INTRODUCTION

Emergency Department (ED) visits in the United States by adults aged 65 years and older now exceed 20 million annually. The majority of these patients live independently and are discharged home following their ED evaluation.¹ Avoiding unnecessary hospital admissions for older adults is important because hospitalizations are expensive and expose patients to the risk of iatrogenic injury and a period of profound activity restriction.^{2,3} Ensuring that older adults discharged home from the ED are able to safely function in their home environment is also important because those who are unable to function safely at home are at risk for falls and return ED visits.⁴ Thus, accurately determining the ability of older ED patients to care for themselves at home is an important task frequently faced by emergency providers.

How emergency physicians assess the ability of older adults to function at home prior to discharge has not been well characterized and likely varies across providers and patients. Available evidence and clinical experience indicates that direct observation of physical function of older patients is not routinely performed by emergency providers.⁵ Among hospitalized patients, discrepancies between a patient's self-reported ability to perform activities of daily living (ADLs) and their actual ability to perform these activities are common, with patients overestimating their ability 35% of the time for some tasks.^{6,7} Older ED patients are on average healthier than older hospital inpatients but have high rates of acute illness and injury that might reduce their mobility or alter their ability to assess their mobility.⁸ Thus, conclusion arrived from inpatient data may not be valid for ED patients. The Timed Up and Go test has been examined as a possible predictor of return ED visits and hospitalizations,⁹ but no published studies have described the accuracy of self-reported

assessments of functional status in older patients in the ED despite this being identified as a priority by experts in geriatrics and emergency medicine.¹⁰

The purpose of this study is to determine the accuracy of self-reported ability to get out of bed, walk 10 feet, and return to bed, among cognitively intact, independently-living older adults in the ED. We hypothesized that a substantial portion of older patients would overestimate their ability to perform this task.

MATERIALS AND METHODS

Study Design, Setting, and Selection of Participants

This was a cross-sectional study of adults aged 65 years or older presenting to two academic EDs in the United States serving racially and socioeconomically diverse populations of older adults. Enrollment was conducted between 9 a.m. and 9 p.m. seven days a week over a period of two months at each site. At each site, potentially eligible patients were identified by review of the electronic tracking board for individuals aged 65 or older. Patients were eligible if they did not suffer from cognitive impairment and were not experiencing a life-threatening illness or injury. Cognitive impairment was defined by a Six-Item Screener score of 3 or less.¹¹ Life-threatening illness was considered present for patients with an emergency severity index triage score of 1 or based on the judgment of the treating emergency provider. The study was approved by the Institutional Review Boards at both sites, and signed informed consent was obtained from all participants who stated they were willing to attempt the physical task.

Data Collection

Data were collected by research assistants using an in-person interview in the ED with a standardized questionnaire. Responses were recorded on paper and then entered into a secure electronic database. Prior to beginning the study, research assistants completed training sessions both on the general conduct of clinical studies, and on the specific protocol of the present study. Additionally, a study investigator observed each research assistant until he or she demonstrated the ability to independently complete the study protocol.

Measures

After collecting sociodemographic information, participants were asked a physical task question, "In your current state of health, do you think you can get out of bed, walk ten feet, turn around, and get back in bed? If so, would you be able to do so without assistance, with a cane or walker, or with someone assisting you?" This question was asked of all eligible patients regardless of the presence of acute or chronic lower extremity pathology that might make it difficult or impossible to ambulate. At the time that participants answered this question, they had already been informed, as part of the initial description of the study, that they would subsequently be asked to perform this task. Those participants who agreed to attempt the task and stated that they thought they could do the task, either with or without assistance, were then asked to perform the task. Before initiating the task, the gurney was lowered as much as possible, the back of the gurney was raised to a sitting position, the guard rail was lowered, and the floor space next to the bed was cleared. A distance of 10 feet

from the side of the gurney was measured and marked. A cane, a walker, and human assistance were made available to the patient but only provided to the patient if requested or if the patient was unable to make progress with the task. Patients who were visibly unstable were shadowed by one or more research assistants in order to ensure that the patient would not injure themselves while attempting the task; shadowing, by itself, was not regarded as human assistance. For patients who required assistance or were unable to complete the physical task, this finding was reported to the treating physician. Disposition was determined by extraction from the electronic medical record for all patients who agreed to attempt the task. For patients who were either unable or unwilling to attempt the task, disposition was recorded if known at the end of the data collection period for that day.

Data Analysis

For the entire sample, we report the percentages of participants with each level of self-reported ability to complete the mobility task. Among the subset of participants who also attempted the task, we report the percentages of participants performing the task at various levels of assistance by category of self-reported ability to complete the task. Reasons why participants were unwilling to attempt the task are also reported. Overestimation and underestimation of ability to complete the task are reported. Differences in rates of overestimation along with 95% confident intervals of differences are reported for males vs. females and for individuals with normal cognition and those with mild cognitive impairment. These two comparisons were selected prior to analysis: the former based on our hypothesis that males would be more likely to overestimate ability, the later because of previously reported differences in accuracy based on cognition.^{6,13} Discharge rates are reported for the entire sample and by subgroups of patients based on reported and actual ability to complete the task.

RESULTS

Two hundred and seventy-two patients met eligibility criteria and answered the question regarding their self-reported ability to get out of bed, walk 10 feet, and return to bed: 124 of these patients were from the emergency department at Cooper Medical School of Rowan University in Camden, New Jersey and 148 were from the emergency department at the University of North Carolina in Chapel Hill, North Carolina. Of these 272 patients, the mean age was 75, 66% were white, 31% had a college education, and 29% lived alone (Table 1). When asked about their ability to complete the physical task, 59% said they could do the task unassisted, 17% said they could do the task with a cane or walker, 8% said they could do the task with human assistance, and 17% said they would be unable to do the task even with human assistance.

The 45 participants who reported they would be unable to do the task, even with human assistance, were not evaluated further. An additional 55 participants were unwilling to attempt the task. Of the remaining 172 patients who attempted the performance-based task, 77% (N=132) accurately assessed their ability to do the task (i.e. self-reported ability and observed ability agreed), 3% (N=5) underestimated their ability (i.e. required less assistance than they said they would), and 20% (N=35) overestimated their ability (i.e. required more

assistance than they said they would or were unable to do the task; Table 2). Overestimation was more common among participants who said that they could do the task with either a cane or walker (48%) or with human assistance (24%) and less common among those who said that they could do the task without assistance (12%). The percentage of patients who overestimated their ability to do the task was similar among males and females (15% vs. 14%; difference = 1%, 95% Confidence Interval (CI) -9% to 13%). Those with a Six-item Screener score of 4 or 5, indicating mild cognitive impairment, had higher rates of overestimation than those with a score of 6, indicating normal cognition (24% vs. 10%; difference = 14%; 95% CI 5% to 24%). Twenty-three of the 55 patients (42%) who declined to attempt the task did not give a reason why they declined. Among those who gave a reason, the most common reasons were weakness and fear of falling (Table 3).

Among all patients who answer the question regarding ability to complete the task and for whom disposition was known (N=231), 46% (95% CI 40% to 53%) were discharged. The percentage of patients discharged to home was 53% (95% CI 45% to 61%) for those who stated that they would be able to do the task without assistance, 41% (95% CI 26% to 57%) for those who stated they would need a cane or walker, 47% (95% CI 27% to 68%) for those who reported they needed human assistance, and 26% (95% CI 15% to 42%) for those who reported they would be unable to complete the task even with human assistance. Among those who attempted the task (N=172), 55% (95% CI 47% to 62%) were discharged. The percentage of patients discharged home was 59% (95% CI 50% to 68%) of those who were able to walk 10 feet without assistance, compared to 68% (95% CI 46% to 85%) of those who could walk with a cane or walker, 19% (95% CI 7% to 43%) who only could walk with human assistance, and 36% (95% CI 20% to 55%) of those who were unable to complete the task even with human assistance.

LIMITATIONS

This study has several limitations. We assessed a single task, which does not completely characterize an individual's ability to safely care for themselves at home. Some patients who can get out of bed and walk might lack the capacity to take medication correctly, make a phone call for help, or sustain appropriate levels of hygiene or nutrition. Further, getting out of a hospital bed may be easier or more difficult than getting out of a bed at home owing to differences in the height or firmness of beds or the presence of obstacles and hand rails or equivalent. The accuracy of self-reported ability to get out of bed and walk 10 feet and return to bed may be higher than self-reported ability with other tasks.⁷ We assessed self-reported mobility using a single question in the context of a research study in which patients were told they would then be asked to perform the task. Unstructured assessments with the opportunity for clarifying questions and collateral information from family or ED staff, as might occur during the course of clinical care, may be more or less reliable than a single question. We compare self-reported vs. actual ability to do the task by gender and cognition. Other factors, such as depressive symptoms or perceived physical competence, which may influence the accuracy of assessments, were not considered.¹¹ We also did not include patients with moderate or severe cognitive impairment. Responses from patients with moderate or severe cognitive impairment are probably even less reliable than responses from patients with no or mild cognitive impairment.^{6,13}

Almost one-quarter of participants were unwilling to attempt the task. The reasons given suggest that many of these individuals would have had more difficulty doing the task than they said they would. For example, a participant who said they could do the task with a cane or walker but were unwilling to attempt the task because of weakness or fear of falling, even though these assistive devices were made available to the patient, might need more assistance than just a cane or walker. However, without testing these participants, we cannot be certain of their abilities, and the overestimation rates for all participants may be higher or lower than the estimates we obtained from the subset of participants who attempted the task.

The study sample was obtained from patients seeking care in two EDs in the eastern United States, one serving a mostly urban population and one a mostly suburban and rural population. The findings may not generalize to patients seeking care in other regions of the US.

DISCUSSION

In this sample of older adults without moderate or severe cognitive impairment receiving care at one of two US EDs, we observe moderate rates of overestimation of self-reported ability to perform a simple but important physical task. Overestimation was more common among those who reported some need for assistance with the task and among those with mild cognitive impairment. Two findings from our study are consistent with findings from other studies: 1) older adults are often inaccurate in self-reported ability to perform basic physical tasks;^{6,7,12–15} and 2) individuals who report difficulty with function are more likely to be inaccurate than patients who report no difficulty.^{6,12} Prior work has focused on hospitalized patients^{6,7,14} and community dwelling older adults.^{12,13} Our work expands on this literature by examining the accuracy of self-reported mobility in the ED, a clinical setting which is unique because of the complexity and acuity of the patients and important because it contributes half of all inpatient hospital admissions in the US.¹⁶

In our sample, patients were more likely to overestimate their ability than underestimate their ability, meaning they were more likely to report they could do something but actually were unable. In two studies of community-dwelling older adults, the more common problem observed was underestimation, meaning individuals reported they could do less than they could actually do.^{12,13} We offer two possible explanations of this difference: 1) among ED patients, an acute process may impair a patient's mobility more than they had anticipated; and 2) some ED patients may overestimate their mobility because they want to go home.

Clinical judgment is required to extrapolate information obtained via direct observation in the ED to determine a patient's prospects for safe mobility at home. For example, an older patient who can walk with the assistance of a research assistant or nurse providing support under each axilla may not be able to walk with the assistance of their frail spouse. Stairs within a home or part of an entry way may present an additional challenge. Also, not all overestimations are equal. A patient who reports they can walk unassisted but actually needs a cane may be able to remain mobile at home by using walls for support. A patient who reports they can walk with an assistive device but actually requires human assistance to walk is likely to be bed bound or fall if they go home alone.

We observe a relatively high discharge rate for those who reported they would be able to complete the task and lower discharge rates for those reporting they would require assistance or be unable to complete the task. This trend is also seen across actual ability to complete the task. However, 36% of patients who said they would be unable to complete the task were discharged. Our interpretation of this finding is that there are many determinants of whether a patient requires hospitalization, and some patients who are unable to walk may be safely discharged, particularly if this is their baseline level of function and they have sufficient help at home.

Although our results indicate that patients are often unreliable in their ability to describe their own capacity for function, one might think that physicians would be able to accurately judge a patient's ability without direct observation. Two studies have examined this question: estimated sensitivities and specificities for the ability of treating physicians to correctly characterize gait impairments in hospitalized patients that they are currently caring for range from 82% to 87% and 45% to 92%, respectively.^{7,14} These results are not encouraging. Further, these physicians would presumably have greater awareness of gait impairments in their patient than would emergency physicians because inpatient providers typically have a longer period of time available to assess their patients.

In conclusion, our findings suggest that for older adults being considered for discharge to an environment without continuous care, direct observation of the patient's mobility by a member of the emergency care team should be considered, particularly for patients who report some need for assistance or have mild cognitive impairment. We suggest that this assessment be made early during the ED visit, because disposition momentum and the challenge of arranging additional outpatient care may make it difficult for emergency providers to change disposition late during the ED visit. The impact of directly observing the mobility of older ED patients on disposition, falls, returns ED visits, and the overall cost of medical care requires further investigation.

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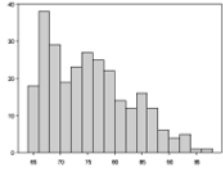
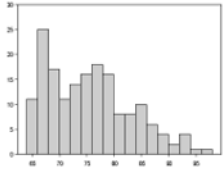
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Table 1

Demographic characteristics and disposition of study participants. Those who attempted the task are a subset of those who answered the question about their ability to do the task. Values are n (%) unless otherwise reported. Age histograms use 2-year bins: the leftmost bin is the number of patients aged 65 or 66 years; the rightmost bin is the number of patients aged 97 or 98 years.

| Variable | Answered Question N = 272 | Attempted task N = 172 |
|-----------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Age, yr, mean (SD) | 75 (7.5) | 75.1 (7.6) |
| |  |  |
| Female | 159 (59) | 106 (62) |
| Race | | |
| White | 180 (66) | 113 (66) |
| Black | 76 (28) | 49 (28) |
| Other | 15 (6) | 10 (6) |
| Lives Alone | 80 (29) | 48 (28) |
| Level of education | | |
| Less than high school | 126 (46) | 73 (43) |
| High school graduate | 60 (22) | 38 (22) |
| College graduate | 84 (31) | 59 (35) |
| Discharged | 107* (46) | 94 (55) |
| Self-report of physical function | | |
| Can do without assistance | 161 (59) | 122 (71) |
| Can do with cane or walker | 45 (17) | 33 (19) |
| Can do with human assistance | 21 (8) | 17 (10) |
| Unable | 45 (17) | NA |

* Disposition available for 231 of 272 patients.

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Observed ability of patients to get out of bed, walk 10 feet, and return to bed, by self-reported ability to perform this task. Values are N (row %).

Table 2

| Self-reported ability to do task | Observed ability to do task | | | | Total |
|----------------------------------|-----------------------------|----------------------------|------------------------------|---------------|-------|
| | Without assistance (N=112) | With cane or walker (N=19) | With human assistance (N=16) | Unable (N=25) | |
| Without assistance | 107 (88) | 4 (3) | 2 (2) | 9 (7) | 122 |
| With cane or walker | 2 (6) | 15 (45) | 4 (12) | 12 (36) | 33 |
| With human assistance | 3 (18) | 0 (0) | 10 (59) | 4 (24) | 17 |

Table 3

Reasons why participants were unwilling to attempt the task, by self-reported ability to complete the task (n=55). Values are n (row %). Reasons other than “no reason given” are not mutually exclusive.

| Self-reported ability to do task | Reason unwilling to attempt task | | | | | | Total |
|----------------------------------|----------------------------------|--------|----------|-----------------|-----------------|--|-------|
| | Injury | Pain | Weakness | Fear of falling | No reason given | | |
| Without assistance | 0 (0) | 4 (10) | 11 (28) | 8 (21) | 18 (46) | | 39 |
| With cane or walker | 2 (17) | 1 (8) | 5 (42) | 3 (25) | 5 (42) | | 12 |
| With human assistance | 0 (0) | 2 (50) | 2 (50) | 2 (50) | 0 (0) | | 4 |
| All | 2 (4) | 7 (13) | 18 (33) | 13 (24) | 23 (42) | | 55 |