Hospital-Associated Functional Decline: The Role of Hospitalization Processes Beyond Individual Risk Factors

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OBJECTIVES: To investigate the combined contribution of processes of hospitalization and preadmission individual risk factors in explaining functional decline at discharge and at 1-month follow-up in older adults with nondisabling conditions.

DESIGN: Prospective cohort study.

SETTING: Internal medicine wards in two Israeli medical centers.

PARTICIPANTS: Six hundred eighty-four individuals aged 70 and older admitted for a nondisabling problem.

MEASUREMENTS: Functional decline was measured according to change in modified Barthel Index from premorbid to discharge and from premorbid to 1 month after discharge. In-hospital mobility, continence care, sleep medication consumption, satisfaction with hospital environment, and nutrition intake were assessed using previously tested self-report instruments.

RESULTS: Two hundred eighty-two participants (41.2%) reported functional decline at discharge and 317 (46.3%) at 1 month after discharge. Path analysis indicated that in-hospital mobility (standardized maximum likelihood estimate (SMLE) = −0.48, $P < .001$), continence care (SMLE = −0.12, $P < .001$), and length of stay (LOS) (SMLE = 0.06, $P < .001$) were directly related to functional decline at discharge and, together with personal risk factors, explained 64% of variance. In-hospital mobility, continence care, and LOS were indirectly related to functional decline at 1 month after discharge through functional decline at discharge (SMLE = 0.45, $P < .001$). Nutrition consumption (SMLE = −0.07, $P < .001$) was significantly related to functional decline at 1 month after discharge, explaining, together with other risk factors, 32% of variance.

CONCLUSION: In-hospital low mobility, suboptimal continence care, and poor nutrition account for immediate and 1-month posthospitalization functional decline. These are potentially modifiable hospitalization risk factors for which practice and policy should be targeted in efforts to curb the posthospitalization functional decline trajectory.
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Key words: functional decline; activities of daily living; hospitalization; mobility; incontinence care

Hospitalizations for nondisabling conditions such as pneumonia or exacerbations of chronic conditions frequently result in new disability,[1] failure to recover from the prehospitalization functional loss,[2,3] or even continued functional decline.[4–8] Because hospital-related functional decline is associated with a wide range of negative outcomes, including institutionalization[9] and death,[4] risk factors for in-hospital functional decline have been extensively studied.

Research has traditionally focused on personal risk factors, such as preexisting functional and cognitive status, comorbidities, age, and severity of illness.[10] Malnutrition[11,12] and depression[13] have also been shown to increase the risk of hospital-related functional decline. In an attempt to discern the role of risk factors for in-hospital functional deterioration that are amenable to change, research is focusing on the role of hospitalization-related processes and patient experiences. In-hospital mobility has consistently been shown to be directly related to posthospitalization functional outcomes,[14–16] and low nutrient intake during hospitalization has been shown to be associated with functional dependency at discharge.[17]

A comprehensive depiction of the factors leading to posthospitalization functional decline[18] suggests that factors contributing to the development of hospitalization-associated disability include preillness determinants of functional reserve, severity of the acute illness, and processes of hospitalization, such as medications used,

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undernutrition, mobility, characteristics of the hospital environment, and support for independence, but these factors have never before been empirically tested together. The current study—Hospitalization Process Effects on Functional Outcomes and Recovery (HoPE-FOR) (see Figure 1 for an elaboration of the study model)—aimed to fill this gap by testing a comprehensive set of prehospitalization personal risk factors and a wide range of hospitalization processes in older adults with nondisabling conditions at admission and their relationship to functional decline at discharge and at 1-month follow-up.

METHOD

Study Population

This prospective cohort study was conducted in the internal medicine units of two Israeli tertiary medical centers from February 2009 to August 2011. Persons assessed for potential recruitment included older adults (≥70) urgently admitted for nondisabling diagnosis who were able to communicate in Hebrew, Russian, or Arabic. Initial exclusion criteria were admission for stroke or being in a coma, mechanically ventilated, or completely dependent in basic functions. Individuals who were not able to provide written informed consent or who did not have a proxy (if they had a score of 5 or less on the Short Portable Mental Status Questionnaire[19]) were also excluded.[6]

The Israel Ministry of Health and each of the medical centers' ethical review boards approved the study protocol. All participants provided written informed consent.

Data Collection

Participants were interviewed four to six times, depending on their length of stay (LOS). The baseline interview asked about information on function upon admission and 2 weeks before hospitalization, as well as nutritional status, sleep medication consumption (SMC) and depressive symptoms at admission, and demographic characteristics. Participants were surveyed up to three additional times during the hospitalization stay, each assessment pertaining to the following processes within the previous 24 hours: mobility level, continence care, SMC, and nutritional intake. At discharge, data were collected on satisfaction with the hospital's physical and human environment (defined as relationship between the medical staff and the patients, e.g., interpersonal communication, maintenance of privacy) and current functional status. One month after discharge, self-reported (telephone interview) data on current functional status and rehospitalization within the 1-month follow-up period were collected. Caregivers' reports in cases of death were also recorded. The interviewers were trained to administer the study protocol and achieved a good level of consistency (kappa = 0.88–0.96) on the main study measures.

Information on participants' severity of acute illness, chronic comorbidities, and LOS was retrieved from their medical records. Participants' and caregivers' information on rehospitalization and in-hospital mortality was also cross-validated with hospital data.

Outcome Measures

The study outcomes were defined as any decline in function, measured as change in Barthel Index (BI),[20] from premorbid function to discharge and from premorbid function to 1-month follow-up. Any improvement was transformed into zero to reflect lack of decline.

Assessment of Personal Risk Factors

Premorbid functional status (defined as functioning in the 2 weeks before hospitalization) was assessed using the 11-item modified BI,[20] consisting of individuals' self-assessment of their independence in performing basic activities of daily living (ADLs). Instrumental activities of daily living (IADLs) were also assessed using Lawton and Brody's eight-item scale.[21] Admission functional status was assessed using only the BI, as described above. Level of

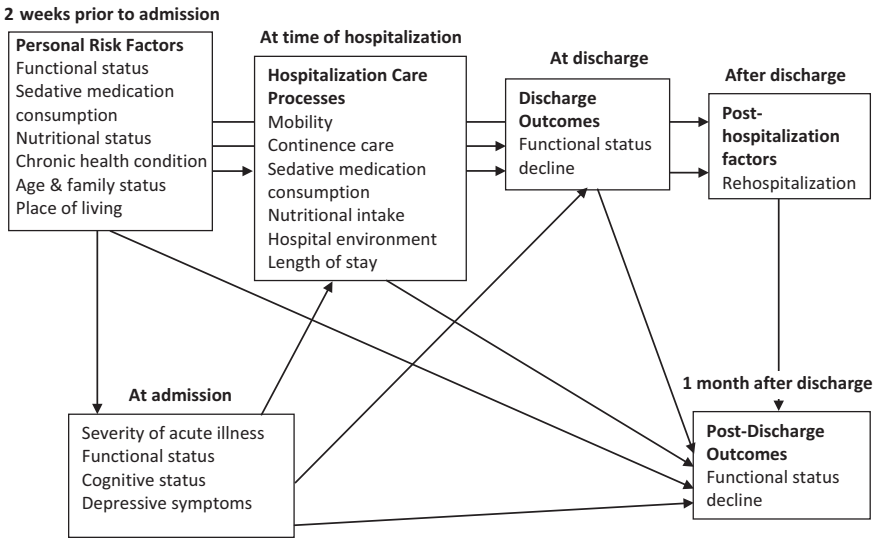

Figure 1. Model of hospitalization process effects on functional outcomes and recovery.

mobility before admission was assessed using the Yale Physical Activity Survey (YPAS).[22] Total scores ranged from 0 to 142, with higher scores indicating greater intensity and frequency of physical activity. Continence care was evaluated based on participants' report on their most common voiding patterns (use of urinary catheters (UCs), adult diapers, commodes or urinals, or self-toileting) in the previous 2 weeks. The lowest score (1) was assigned to UCs and the highest (4) to self-toileting.[23]

Cognitive status was measured using the Pfeiffer Short Portable Mental Status Questionnaire.[19] Total scores ranged from 0 to 10 correct items, with higher scores indicating better cognitive status.

Nutritional status was assessed using the Malnutrition Universal Screening Tool,[24] which is specifically designed for healthcare settings and older adults. The measure relies on body mass index (BMI), a weight loss score, and an acute disease score summed as low (0), medium (1), or high (≥2) malnutrition risk.

Medication sedative load (MSL) was established by applying a sedative load formula based on the information on the type and number of SMCs in the month before hospitalization.[25] Scores range from 0 to 6, with higher scores indicating higher sedative potential of SMCs. Depressive symptoms were measured using the Tucker short 10-item interviewer-assisted Depression Rating Scale.[26] Total scores range from 25 to 100, with higher scores indicating greater number and frequency of depressive symptoms.

Chronic health condition was assessed using the Charlson Comorbidity Index.[27] Severity of acute health condition was assessed using the Acute Physiology and Chronic Health Evaluation II.[28] Demographic information on age, sex, education, place of living, and marital and economic status was collected at the first interview.

Assessment of Hospitalization Processes

In-hospital care processes were defined as processes pertaining to the basic activities hospitalized individuals perform, such as mobilization, nutritional intake, sleep medication care, and continence care or that pertain to the entire hospitalization period (e.g., the hospital's environment or LOS).[18]

In-hospital mobility was assessed using a modified mobility index designed to assess ambulation level in hospitalized individuals.[14,15] Participants were asked about the frequency of all mobility efforts of any type (physical therapy, initiated by others, self-initiated) during the previous 24 hours. Scoring and groupings of the score have been previously described.[15] In-hospital nutritional intake (mean of proportions of daily caloric intake) was estimated based on self-report of quantities consumed at each of three main meals (breakfast, lunch, dinner) and relative caloric value of each meal.[29] Hospital environment was assessed using the Perceived Hospital Environment Quality Index,[30] which gauges participants' perceptions of the hospital physical and human environment. In-hospital MSL and continence care were assessed using the same measures applied at baseline (as detailed above) during all available in-hospital interviews.

Data Analysis

Total scores for each subscale and scale were calculated, and missing values were replaced with the mean of the same scale for each participant as long as at least 75% of the items were not missing. Differences between the two study sites were tested for, and no statistically significant differences in change in function at discharge or at 1-month follow-up were found. Subsequently, data from the two sites were merged. Intercorrelations among the main study variables were explored using simple Pearson correlations. Chi-square analyses were used for categorical data.

Path analysis was used to test the full model (Figure 1). A major benefit of path analysis is that it enables testing for mediation without risking capitalization on chance and provides estimates of the magnitude, significance, and direction of hypothesized causal connections between sets of variables, as the model suggests. Functional decline at discharge and at 1-month follow-up were used as endogenous variables (variables with causal links (arrows) leading to them from other variables in the model)[31] and defined as the proximal and distal outcomes, respectively. Premorbid and admission personal risk factors (as described above) were used as exogenous factors (represent independent variables),[31] and processes of hospitalization (in-hospital mobility, continence care, sedative medication consumption, nutritional intake, hospital environment, LOS) as mediating factors. Rehospitalization within the 1-month follow-up period was defined as a mediating factor for the distal outcome. Parameter estimates were collected using maximum likelihood.

The model was tested by evaluating the significance of the estimated path coefficients and evaluating four goodness-of-fit statistics. Chi-square was used as a traditional measure of fit, often reported in path analyses, despite its limited validity in large samples.[32] The Comparative Fit Index (CFI), Normed Fit Index (NFI), Incremental Fit Index (IFI), and Root Mean Square Error of Approximation (RMSEA) were also reported to complement the data analysis and to allow for a more-comprehensive assessment of the goodness of fit. With a sample size greater than 600, models should have a RMSEA of 0.05 or less and a CFI, a NFI, and an IFI of 0.95 or greater[33] to represent good fit between the model and the data. Bootstrapping was performed to test the mediation effect.[31]

Conservative power calculations were made based on the most-restrictive variable (rehospitalization, dichotomous) and taking into account the number of exogenous factors in the model. Considering a one-way significance level of 5%, there was 80% power to detect an at least 10% difference between the groups (in level of functional decline).[34] Data analyses were performed using the IBM SPSS 19.0 package and the IBM AMOS 19.0 package (SPSS Inc., Chicago, IL) for the path analyses.

RESULTS

Of 3,622 participants meeting the age requirement, 1,488 were excluded based on the initial exclusion criteria. Participants who could not be reached (because of intensive medical treatment or severely deteriorated physical condition) after five attempts within 48 hours after admission

(24.1%) were also excluded from the sample. Four hundred eighty-seven (22.7%) of the potential pool refused participation. The main reasons for refusal were feeling weak or tired and privacy concerns. No difference was found in age, sex, or ethnic background with regard to refusal or to not being screened during the first 48 hours of hospitalization. Ninety-eight participants (4.6%) were not recruited because of poor cognitive status and lack of an available proxy who could provide consent. Additional reasons for attrition and exclusion appear in Figure 2. Six hundred eighty-four participants completed all data collection phases, 113 of whom (16.5%) participated together with a proxy, mainly family members.

Age ranged from 70 to 100 (mean ± standard deviation 78.9 ± 5.8), half the participants were female, more than 57.0% were married, and 89.8% were community dwellers. See Table 1 for full sample description. Table 2 summarizes descriptive statistics for the potential risk factors and the hospitalization process factors. On average, participants stayed in the hospital for 6.2 ± 4.8 days (median 4 days, range 3–7 days). During their stay, mean caloric intake was 0.6 ± 0.3, corresponding to 60% of recommended caloric intake per day, and 37.1% of participants consumed less than half the recommended portions. In-hospital mobility averaged 10.6 ± 4.3 on a scale from 0 to 14. Most participants (51.9%) were classified as highly mobile (walked on average at least once daily outside their room), 30.1% were moderately mobile (walked only inside their room), and 18.0% were restricted to bed or only transferred from bed to chair. Average score on the in-hospital continence scale was 3.4 ± 1.0. Most participants (64.3%) used the toilet, 11.0% mostly used commodes or urinals, 15.5% used adult diapers, and 9.2% used a UC. Average in-hospital MSL was 0.7 ± 1.0. Most participants (57.5%) did not consume any sleep medications; of those who did, the average MSL was 2.1 ± 0.6. Approximately 20% of participants were rehospitalized during the 1-month period after discharge. Two hundred eighty-two participants (41.2%) reported functional decline at discharge and 317 (46.3%) at 1-month follow-up.

In univariate analysis (Table 2), almost all the risk factors and process factors showed significant associations with the outcomes as expected, with the exception of comorbidity score and risk of malnutrition for functional decline at discharge and prehospitalization medication sedative load (MSL) and satisfaction with the hospital human environment for functional decline at 1-month follow-up.

Model Testing

The full model (Figure 1) was tested with all variables that were significantly associated with at least one of the outcomes in the univariate analysis. This yielded marginal fit indices. Removing nonsignificant paths ($P < .05$) and variables that were not significantly associated with the outcomes (cognitive status, MSL, hospital environment), resulted in a model including chronic and acute conditions,

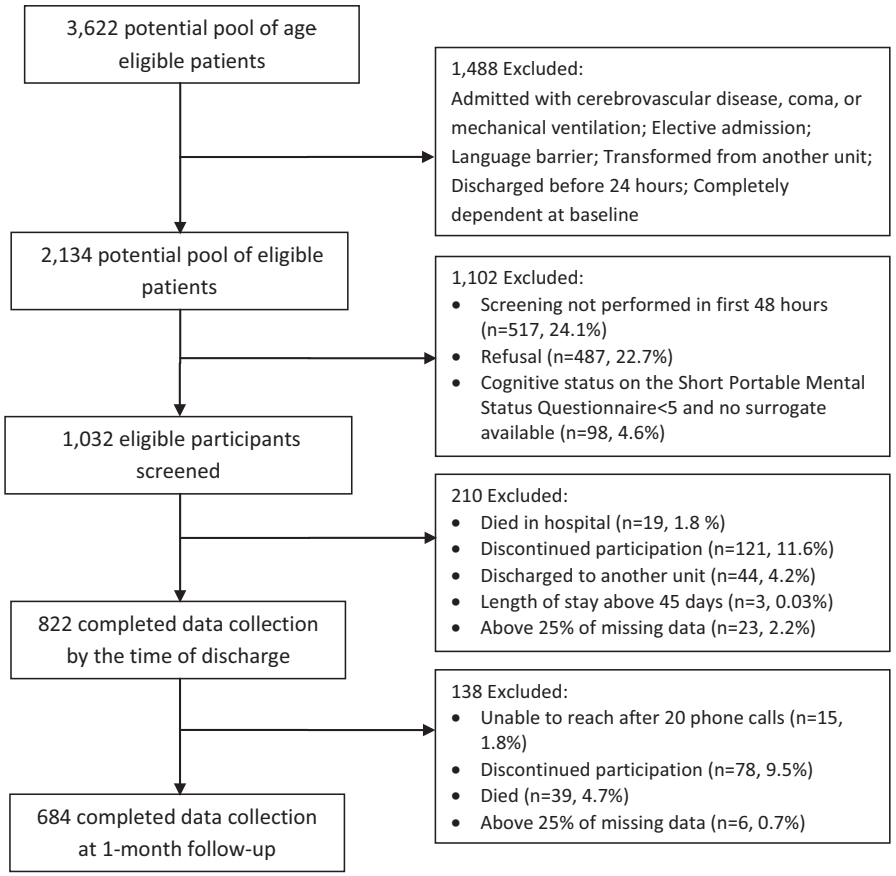

Figure 2. Participant flow.

Table 1. Characteristics of the Study Population (N = 684)

Characteristic	Value
Age, mean ± SD	78.9 ± 5.8
Female, n (%)	346 (50.6)
Education, years, mean ± SD	10.4 ± 5.2
Married or living with partner,[a] n (%)	391 (57.2)
Living status,[a] n (%)	
At home	613 (89.8)
Retirement community	57 (8.4)
Long-term care	13 (1.9)
Ethnic group, n (%)	
Jewish	614 (89.2)
Arab	72 (10.7)
Work status, n (%)	
Retired	660 (96.5)
Volunteer	12 (1.7)
Part time	12 (1.7)
Economic status,[a] n (%)	
Above average	248 (37.3)
Average	288 (43.2)
Below average	131 (19.6)
Type of hospital, n (%)	
Large teaching hospital	511 (74.7)
Medium community hospital	173 (25.3)
Cognitive impairment,[b] n (%)	81 (11.8)
Risk of malnutrition (Malnutrition Universal Screening Tool), n (%)	
Low	316 (46.2)
Medium	128 (18.7)
High	240 (35.1)
Continence care before admission, n (%)	
Urinary catheter	14 (2.0)
Adult diapers	79 (11.5)
Commode or urinal	20 (2.9)
Self-toileting	571 (83.5)
Premorbid basic activity of daily living (modified Barthel Index), n (%)	
Independent (≥80)	548 (80.1)
Partially dependent (40–79)	104 (15.2)
Dependent (≤40)	32 (4.7)
Depression symptoms (Tucker short Depression Rating Scale), n (%)	
Borderline depression (60–69)	126 (18.4)
Depression (≥70)	92 (13.5)
Sleep medication consumption before admission, n (%)	
No sleep medication	391 (57.2)
Any amount of sleep medications	293 (42.8)

SD = standard deviation.

[a] Missing data for 1 to 18 participants.

[b] Short Portable Mental Status Questionnaire score ≤5.

prehospitalization and admission function, and depression as exogenous factors and in-hospital caloric intake, continence care, level of mobility, and LOS as mediating factors. The model accounted for 64% of the variance in functional decline at discharge and 32% at 1-month follow-up. The process factors partly mediated the association between the risk factors and outcomes. In the final path analysis (Figure 3), the standardized regression weights and their significance are indicated along each line. The chi-square for the final model was 114.1, with 60 degrees of freedom ($P = .001$), CFI was 0.988, IFI was 0.988, NFI was 0.975, and RMSEA was 0.036 (90% confidence interval = 0.026–0.046).

All mediation effects presented in the model were significant. Caloric intake mediated the relationship between nutritional status, depression symptoms, ADLs at admission, and functional decline at 1-month follow-up; in-hospital continence care mediated the relationship between prior continence care, severity of illness, ADLs at admission, premorbid IADLs, and functional decline at discharge; and in-hospital mobility mediated the relationship between prior continence care, ADLs at admission, and functional decline at discharge. Functional decline at discharge mediated the relationship between in-hospital mobility, continence care, LOS, and functional decline at 1-month follow-up.

DISCUSSION

To the knowledge of the authors, this is the first study to test a comprehensive model of the relationship between several types of in-hospital care processes and functional decline, accounting for a multitude of personal predisposing risk factors. In a cohort of older adults hospitalized for nondisabling conditions, in-hospital mobility and continence care were directly related to functional decline at discharge, and in-hospital nutritional intake was directly associated with functional decline at 1-month follow-up. In addition, in-hospital mobility and continence care were indirectly (through the mediation of at-discharge functional decline) related to functional decline at 1-month follow-up. These results were evident after accounting for preadmission functional, cognitive, and nutritional status; chronic comorbidities; acute severity of illness; and depressive symptoms. Because posthospitalization functional decline has been extensively shown to affect a broad range of adverse outcomes, including institutionalization, falls, poor quality of life, and even death,[18] identification of a comprehensive set of in-hospital risk factors that may be amenable to change, has important implications for the prevention of such deleterious effects.

Preventing hospitalization-associated disability is possible only if modifiable risk factors are identified. These factors may be associated with a priori risk or with in-hospital care received.[18,35] Although personal risk factors have received ample attention in the literature,[18] the role of in-hospital care has only recently begun to be tested.[14,15] One of the strongest direct correlates of functional decline found was in-hospital mobility. Current literature emphasizes the importance of in-hospital mobility for the prevention of adverse effects of hospitalization,[36,37] yet studies continue to show that 50% to 70% of people in the hospital do not walk outside their room.[14,38] The current study showed similar findings, with 48% of participants reporting confinement to their room.

Although the role of mobility has previously been identified,[14–16] this is the first study to show that, beyond other potentially related in-hospital risks, such as SMC, nutritional intake, the hospital environment, and continence care, and after controlling for numerous personal risk factors, mobility remains an important potentially modifiable risk factor for posthospitalization functional outcomes.

Another major process risk factor of posthospitalization functional decline was in-hospital continence care.

Table 2. Description of the Main Study Variables and Univariate Correlations with Functional Outcomes

Variable	Value	Pearson Correlation Coefficient, *P*-Value	
		Functional Decline at Discharge	Functional Decline at 1-Month Follow-Up
Personal risk factors, mean ± SD			
Short Portable Mental Status Questionnaire score (range 0–10)	8.2 ± 2.2	−0.40, <.001	−0.29, <.001
Charlson Comorbidity Index (range 0–33)	2.4 ± 2.1	0.03, .40	0.13, .001
Acute Physiology, Age, and Chronic Health Evaluation score (range 0–71)	11.4 ± 4.1	0.11, .005	0.09, .04
Yale Physical Activity Survey Index (range 0–142)	27.7 ± 26.6	−0.34, <.001	−0.29, <.001
Total ADL score at admission (range 0–100)	78.2 ± 29.0	−0.61, <.001	−0.38, <.001
Total premorbid ADL score (range 0–100)	88.5 ± 19.8	−0.39, <.001	−0.25, <.001
Total premorbid instrumental ADL score (range 0–16)	10.7 ± 5.3	−0.43, <.001	−0.39, <.001
Tucker short Depression Rating Scale (range 25–100)	52.2 ± 15.7	0.31, <.001	0.24, <.001
Risk of malnutrition (Malnutrition Universal Screening Tool) (range 0–2)	0.9 ± 0.9	0.06, .10	0.08, .03
Continence care before admission (range 1–4)	3.7 ± 0.8	−0.13, .001	−0.12, .002
Medication sedative load before admission (range 0–6)	1.0 ± 1.3	0.14, <.001	0.06, .15
In-hospital process risk factors, mean ± SD			
Length of stay, days	6.2 ± 4.8	0.18, <.001	0.12, .001
Mean of proportions of daily caloric intake (range 0–1)	0.6 ± 0.3	−0.18, <.001	−0.16, <.001
In-hospital mobility (range 0–14)	10.6 ± 4.3	−0.62, <.001	−0.36, <.001
In-hospital continence care (range 0–4)	3.4 ± 1.0	−0.58, <.001	−0.28, <.001
In-hospital medication sedative load (range 0–4)	0.7 ± 1.0	0.16, <.001	0.07, .07
Hospital environment (range 0–5)			
Physical	3.9 ± 0.6	−0.16, <.001	−0.11, .003
Human	3.8 ± 0.8	−0.14, <.001	−0.03, .42
Large teaching hospital, n (%)	511 (74.7)	−0.02, .53	0.06, .10
Postdischarge risk factor			
Rehospitalization within 30 days, n (%)	134 (19.6)		0.16, <.001

SD = standard deviation; ADL = activity of daily living.

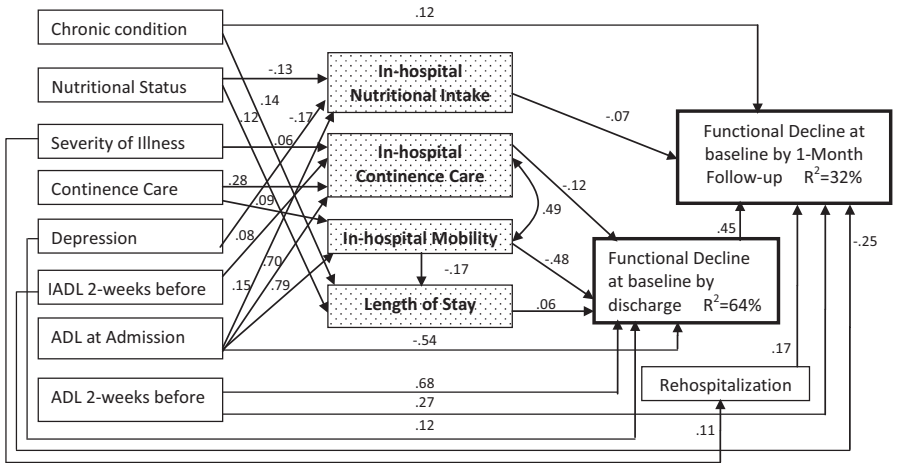

Figure 3. Final model of functional decline at time of discharge and 1 month after discharge. Chi-square = 114.1, degrees of freedom = 60 $P < .001$. Comparative Fit Index = 0.988, Incremental Fit Index = 0.988, Normed Fit Index = 0.975, root mean square error of approximation = 0.036, 90% confidence interval = 0.026–0.046. ADL = activity of daily living; IADL = instrumental activity of daily living.

Preliminary evidence of a subset from the HoPE-FOR study showed that, in a sample of continent hospitalized older adults, the use of adult diapers and UCs led to the development of new urinary incontinence at discharge.[39] The current study shows, for the first time, that when controlling for other pre- and in-hospital risk factors, in-hospital continence care is directly and indirectly (through its relationship with mobility) related to functional decline at discharge. Despite the intercorrelation between in-hospital mobility and continence care, each factor was independently associated with functional decline at discharge. Such findings may indicate that low mobility and use of continence aids form a "double jeopardy" and should be addressed simultaneously.

An important aspect related to basic functioning during hospitalization is nutritional intake, which has been

described as a major area of needed improvement,[40,41] yet research has rarely addressed the relationship between in-hospital food consumption and outcomes.[17] The current study is the first to assess the role of in-hospital nutritional intake beyond other personal and in-hospital care factors, including prehospitalization risk of malnutrition. Although in-hospital nutritional intake was weakly associated with functional decline 1 month after discharge, this was the only in-hospital risk factor that was directly related to the distal functional outcome. There are several potential explanations for why a link was found between in-hospital caloric intake and the distal, but not the proximal, functional outcome. First, the damage that malnutrition causes may take time to evolve and thus emerge only later.[42,43] Second, posthospitalization processes, such as continued malnutrition, that were not accounted for in the current study may instigate the deterioration in function. These potential explanations[44] deserve further investigation.

Two potential in-hospital risk factors—satisfaction with hospital environment and sleep medication consumption—were not retained in the model. To the best of the knowledge of the authors, even though both were previously proposed as potential in-hospital risk factors,[18,45] their direct effect on posthospitalization function was never previously tested.

The current study excluded people with disabling diagnoses, those who required intensive care, and those who underwent surgery. Therefore, the findings may even underestimate the extent and strength of the relationships in a more-disabled population.

Limitations

Several limitations should be noted. First, the study design precludes determination of causality, but data for this study were collected prospectively, and a large array of intervening variables were tested and controlled for, strengthening the ability to suggest directionality. Second, the majority of the data were collected through participant self-report. Performance-based measures of physical functioning could yield a more-accurate account of actual functioning.[46] Nonetheless, self-report is a widely accepted and feasible way to assess functioning in such large-scale studies as the one reported here.[47]

Another limitation is that in-hospital risk factors were assessed up to three times during the hospital stay on 3 consecutive days, after the initial 48 hours after admission. For participants with longer stays, the assessment period constituted less than the majority of the entire stay. Although the potential effects of processes occurring at the later stages of the hospitalization cannot be accounted for, the findings at least suggest that early hospitalization risk factors are associated with proximal and distal functional outcomes.

Last, although generalizability of findings from one country should be made with caution, the in-hospital risk factors described here are associated with care that is universally applicable to basic human needs and functions. Moreover, deficiencies in basic care characteristics have been documented in many other countries and care settings.[14,38,40,48–50] Finally, even though cognitively disabled older adults were included with their proxies, the percentage of these participants was low. The main reason for that was a requirement of availability and intensive involvement of proxy in the data collection process during the entire hospitalization. Because of this requirement, a somewhat different pattern of process factors affecting functional decline may exist for more cognitively disabled individuals.

CONCLUSION

In older adults hospitalized for nondisabling conditions, in-hospital risk factors such as low mobility, suboptimal continence care, and low nutrition consumption account for immediate and 1-month posthospitalization functional decline. These factors constitute potentially modifiable risks of hospitalization in general medicine units, beyond individuals' personal risk, that should be simultaneously addressed in future interventional studies and for which practice and policy should be targeted in efforts to curb posthospitalization functional decline.

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Author Contributions: Zisberg, Shadmi: study concept, obtaining funding, data analysis and interpretation, manuscript preparation. Sinoff, Gur-Yaish: study concept, obtaining funding, critical revisions to manuscript. Tonkikh: data acquisition, analysis, and interpretation, critical revisions to manuscript.

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