

# Attitudes and Expectations Regarding Exercise in the Hospital of Hospitalized Older Adults: A Qualitative Study

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**OBJECTIVES:** To describe expectations of, and perceived motivators and barriers to, in-hospital exercise of hospitalized older adults.

**DESIGN:** Qualitative study using the framework theory.

**SETTING:** Public hospital general medical wards.

**PARTICIPANTS:** Twenty-eight English- or Spanish-speaking inpatients aged 65 to 103.

**MEASUREMENTS:** Semistructured interviews were conducted at the bedside. Questions explored attitudes and expectations regarding in-hospital exercise. Interviews were tape recorded and transcribed, and content analysis was performed to identify major themes.

**RESULTS:** For most participants (71%), exercise in the hospital meant walking. Only 29% of participants expected to be exercising in the hospital, although three-quarters perceived it to be appropriate. Major themes included motivating factors and barriers to in-hospital exercise. Motivating factors included avoiding the negative effects of prolonged bed rest, promoting a sense of well-being, promoting functional recovery, and being asked to exercise. Barriers included symptoms related to one's illness, institutional barriers, and fear of injury. Most respondents (85%) felt that if the physician suggested exercise, it would influence their decision to do so, yet few (27%) reported that they had spoken to their physician about exercise.

**CONCLUSION:** Hospitalized older adults have positive perceptions about in-hospital exercise, although they must overcome significant barriers to do so. Medical professionals have a strong influence over the exercise behavior of elderly adults in the hospital yet infrequently address the issue. Incorporating motivating factors and removing barriers may increase the effectiveness of in-hospital exercise programs. *J Am Geriatr Soc* 60:713–718, 2012.

**Key words:** elderly; hospitalization-associated disability; functional decline; low mobility; exercise

Approximately one-third of hospitalized older adults will experience a decline in their ability to perform activities of daily living (ADLs) during their hospitalization,<sup>1–3</sup> which is a significant risk factor for nursing home placement and death after discharge.<sup>4–6</sup>

Low mobility and bed rest are important mediators of decreased lower extremity strength and functional decline in the hospital.<sup>7,8</sup> Although clinical trials have demonstrated the effectiveness of multidisciplinary interventions that include exercise, mainly walking, to reduce hospitalization-associated decline in function,<sup>9,10</sup> rates of walking in the hospital are low among hospitalized older adults.<sup>11</sup> Previous studies have documented attitudes toward,<sup>12</sup> motivators of,<sup>13,14</sup> perceptions of,<sup>15,16</sup> beliefs regarding,<sup>17,18</sup> and barriers to<sup>13,19</sup> physical activity or exercise in community-dwelling elderly adults, but little is known about these domains in hospitalized older adults.<sup>20</sup> Understanding attitudes and expectations of hospitalized older adults toward exercise in the hospital is a first step toward developing a strategy to promote exercise in this population.

This study had the following objectives: to describe the attitudes toward and expectations of hospitalized older adults regarding exercise in the hospital, to explore motivators and barriers to exercise in the hospital, and to characterize the role of physicians and nurses in promoting in-hospital exercise. An existing conceptual model of barriers to in-hospital mobility guided the study,<sup>20</sup> which sought to expand the model to include motivators for in-hospital exercise. A qualitative approach was used because it is well suited to exploring attitudes that guide behavior.

## METHODS

### Study Design

This was a qualitative, descriptive study of hospitalized older adults on general medical wards at San Francisco

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General Hospital (SFGH) to obtain in-depth information about perceptions regarding in-hospital exercise. The University of California at San Francisco (UCSF) Committee on Human Research and the hospital approved the study. Written consent was obtained from participants before commencing the formal interview.

### Setting

San Francisco General Hospital is a 282-bed, Level 1 trauma center and safety net hospital for the city and county of San Francisco and a major teaching site for UCSF. This study was conducted on general medical and surgical wards where the nurse to patient ratio is 1:5, and patients share double rooms. Each unit has nursing assistants that help mobilize, feed, and monitor patients. The SFGH Department of Rehabilitative Services employs 20 physical therapists and eight occupational therapists who are available to evaluate and treat patients. SFGH does not have a recreational therapist.

### Subject Recruitment

Eligible patients were aged 65 and older admitted from July 2008 through September 2008 to the Medicine and Family Medicine services. Patients were excluded for the following reasons: language other than Spanish or English; dementia, defined according to the attending physician or five or more errors on the Short Portable Mental Status Questionnaire (SPMSQ);<sup>21</sup> delirium, defined according to the attending physician or the Confusion Assessment Method;<sup>22</sup> being bed-bound; having a hospital stay shorter than 48 hours; if the attending physician felt the patient was inappropriate for the study; or at the interviewer's discretion for concerns of patient safety. Of 90 patients

assessed for eligibility, 22 were discharged before the interview, and the attending physician excluded 26 (10 for dementia; 6 for language; 3 for psychosis; 2 each for delirium, physical disability, and being comatose; and 1 for being at the end of life). Forty-two individuals were approached for consent; 12 refused, and two were excluded based on fatigue and SPMSQ score, leaving a study sample of 28. None of the participants had bed rest orders.

### Data Collection and Measurements

Demographic data (age, sex, marital status, race or ethnicity, language, income, homelessness, reasons for admission, and comorbidities) were collected from the electronic medical record. Baseline (2 weeks before admission) and admission physical function were measured using a modified Katz index of ADLs: bathing, dressing, transferring from bed to chair, using a toilet, and eating.<sup>23</sup> Cognition was measured using the 10-item SPMSQ.

### Interviews

Semistructured, face-to-face interviews were conducted at participants' bedside using an interview guide developed for this study (Table 1). The interview guide was pilot-tested on four participants. A coauthor (CS) conducted the interviews, which lasted approximately 40 minutes. The interview began by exploring participants' exercise in the 6 months before hospitalization. Attitudes about in-hospital exercise were then discussed, targeting four major areas: expectations, beliefs, motivators, and barriers to in-hospital exercise. Self-reports of in-hospital exercise were obtained. All interviews were tape-recorded and transcribed verbatim. Interviews with Spanish-speaking participants were

**Table 1. Interview Guide**

*Introduction:* The purpose of this study is to learn about what people in the hospital think about exercising while they are in the hospital. There are no right or wrong answers to these questions. Please try to answer each question completely and honestly.

- 1) Prior to coming to the hospital, what was your level of physical activity or exercise? Describe.
- 2) When you think of physical activity or exercise in the hospital, what activities come to mind?
- 3) Did you expect to be doing these activities in the hospital? Why or why not?  
Are these activities appropriate for someone like you to be doing in the hospital?  
What are the benefits or harms you expect from these activities in the hospital?  
Do you expect that doing these activities will speed or slow your recovery? Explain.
- 4) Describe your level of activity since coming to the hospital.  
*If some exercise:*  
What are some of the reasons you do these activities in the hospital?  
How do you feel when you do these activities?  
Do you feel able to exercise or be active in the hospital when you'd like? Explain.  
What things make it easier for you to exercise?  
Are there barriers to your exercising in the hospital? Explain.  
Are there things the hospital could do to increase your ability to exercise? Describe.  
*If no exercise:*  
What are some of the reasons why you haven't exercised in the hospital?  
Are there barriers to your exercising in the hospital? Explain.  
Are there things the hospital could do to increase your ability to exercise? Describe.
- 5) Has your doctor or someone on your medical team spoken to you about exercise or physical activity in the hospital?  
Do you think your doctor or medical team wants you to exercise or engage in physical activity in the hospital? Explain.  
If your doctor or medical team advised you to exercise or engage in physical activity, would that influence your decision to do so in the hospital?  
If your family or friends advised you to exercise or engage in physical activity, would that influence your decision to do so in the hospital?

analyzed in Spanish and, after translation, in English. Transcripts were analyzed after each set of four to five interviews. After analyzing 28 interview transcripts, saturation had been reached, with no new themes emerging from the last five interviews.

The data were analyzed to identify important motivator and barrier themes using the framework method,<sup>24</sup> a technique to interpret qualitative data that has five stages: familiarization, identifying a thematic framework, indexing, charting, and mapping and interpretation. Both authors listened to the tapes, read and corrected the transcripts, and developed preliminary themes (familiarization). Regular meetings were held to discuss each

**Table 2. Participant Characteristics (N = 28)**

Characteristic	n (%)
<b>Sociodemographic</b>	
Age	
65-74	11 (39)
75-84	10 (36)
≥ 85	7 (25)
Female	13 (46)
Marital status	
Married	7 (25)
Widowed	7 (25)
Divorced	4 (13)
Never married	10 (36)
Race or ethnicity	
White, non-Hispanic	7 (26)
African American	4 (15)
Hispanic/Latino	9 (33)
Asian	6 (22)
Other	1 (4)
Language	
English	21 (75)
Spanish	7 (25)
Monthly income ≤ \$800	14 (52)
Homeless	5 (18)
Admission	
Reason for admission	
Urinary tract infection	3 (11)
Fall	3 (11)
Cancer	3 (11)
Cellulitis	2 (7)
Other infection	3 (11)
Comorbid conditions	
Hypertension	16 (57)
Chronic lung disease	6 (21)
Diabetes mellitus	6 (21)
Coronary artery disease	3 (11)
End-stage renal disease	3 (11)
Length of hospital stay at interview ≤ 5 days	18 (64)
Anemia (hematocrit < 36)	17 (61)
Number of Short Portable Mental Status Questionnaire errors	
0-1	15 (54)
2-4	13 (46)
Baseline	
Dependent in > 1 ADL	14 (50)
Dependent in transferring	2 (7)
Admission	
Dependent in > 1 ADL	17 (61)
Dependent in transferring	8 (29)
Prior experience with in-hospital physical therapy	
Some exercise in 6 months before hospitalization	21 (75)

ADL = activity of daily living.

**Table 3. Motivators of and Barriers to In-Hospital Exercise**

<b>Motivators</b>	
Avoiding negative effects of bed rest	
Boredom	
Pain	
Functional decline	
Fatigue	
Inactivity	
Improved well-being	
Promotion of functional recovery	
Asked to exercise	
<b>Barriers</b>	
Symptoms	
Institutional	
Lack of encouragement/support	
Tethers	
Discouragement	
Lack of assistive devices	
Unfamiliar surroundings	
Fear of injury	

transcript line by line. An initial thematic framework (identifying a thematic framework) was developed that was used to code each transcript (indexing). Each transcript was independently coded, and interrater agreement about themes and supporting data was 85%. Disagreements were resolved through discussion until consensus was achieved. Individual codes were rearranged according to a thematic reference across respondents (charting). Each passage of text was critically evaluated for support of the thematic framework and the framework revised where necessary. After the data were charted according to core themes, the charts, subject indexes, and research notes were systematically reviewed to further define the concepts (mapping and interpretation). After saturation was achieved, the number of respondents who endorsed a particular theme was counted.

**RESULTS**

**Study Participants**

Participant characteristics are shown in Table 2. The sample included 13 women (46%), seven whites (26%), four African Americans (15%), nine Hispanics (33%), and six Asians (22%) aged 65 to 103 (mean 77.7). Seven participants identified Spanish as their primary language. The top five reasons for admission were urinary tract infection (three participants), fall (three), cancer (three), cellulitis (two), and other infection (three). Approximately 50% of participants had more than one error on testing with the SPMSQ and more than one ADL dependency at baseline; 60% had more than one ADL dependency on admission.

**Findings**

For most participants (71%), exercise in the hospital meant walking; for others, it meant calisthenics, climbing stairs, or any activity that a doctor prescribed. Only 29% of participants expected to be exercising in the hospital, although three-quarters felt that exercise in the hospital, as

they defined it, was appropriate. Participants who expected in-hospital exercise were more likely to have had prior contact with a physical therapist during a past hospital admission (75% vs 47%). None of the participants in this study had bed rest orders, yet only one-quarter reported that their physicians had discussed physical activity or exercise with them during their hospitalization; nevertheless, 85% felt that a recommendation from their physician to walk would influence their decision to do so.

Major themes emerged representing categories of motivating factors and barriers to exercise in the hospital (Table 3). Motivating factors were reasons participants gave to explain their exercise behavior or their desire to exercise in the hospital. Barriers were reasons participants gave for not exercising in the hospital or why exercise in the hospital was seen as particularly difficult.

## MOTIVATING FACTORS

### Avoiding Negative Effects of Bed Rest

Half of the participants mentioned the motivating factor of avoiding the negative effects of bed rest, including avoiding boredom (21%), pain or decline (18%), fatigue (7%), and inactivity (7%). Avoiding boredom was a powerful motivator for exercise. One participant stated: "I doubt you've ever laid in bed. Not a very pleasant thing to do. It sounds pleasant, but after a while it becomes boring." Another responded that he is active "so that I am not bored. So that I am not just lying there." A third said: "Otherwise I'd be staying in bed all day long or staying in the chair so long all day. I might as well do something." These participants found the prospect of hours without any activity or purpose difficult and saw exercise as a way to reduce boredom.

Avoiding physical symptoms associated with bed rest such as physical decline, fatigue, and pain were other motivators for exercise. One participant referred to the feeling of decline from staying in bed: "I have to get out of bed, move around. Otherwise I feel like I'm getting worse." Another stated: "I said if you lay in bed, pretty soon you cannot walk, or you lose your strength. A person laying in bed loses their strength.... I don't care if it's hopping out of bed and walking down the hall, or getting up for a shower." For others, avoiding pain associated with bed rest was a motivator: "I don't just lie on the bed, no, because I feel I am hurting myself, that my bones will become stiff, ... and I would know it was my own fault. So, since I have come here, I have walked." These participants were well aware of the risks that bed rest presented and found motivation to exercise in avoiding these negative effects.

### Improved Well-Being

Beliefs that exercise in the hospital would help them feel better motivated fewer participants (14%). One participant explained: "Ooh, you feel good when you do exercise, and you feel strength that you never knew you had." A second participant stated: "I feel that it helps me a lot because you feel that you are part of your body. I feel an internal relaxation, in the middle, like walking and stretching your

bones, it feels really good.... It's very important." These participants, in contrast to those who were motivated by avoiding the negative effects of prolonged bed rest, highlighted the positive effects they expected to achieve with exercise in the hospital.

### Functional Recovery

Although half of the participants stated that they believed exercise would speed their recovery in the hospital, only 14% cited promotion of functional recovery as a reason for their exercise. One participant described: "This afternoon, I'm going to walk down on the second floor where there's that garden, because I want to build up my stamina to leave here." Another participant stated: "So I can go home, because they will not let me go home if I cannot walk." A third explained: "Every day, if you can move 10 meters, maybe tomorrow you can walk around 12 or 15." For these participants, exercise was seen as a way to recover function and allow one to return home.

### Asked to Exercise

Three participants (11%) cited a nurse, doctor, or physical therapist asking them to exercise as the motivating factor for their in-hospital exercise. One woman explained her exercise: "Because [the doctor] came and asked me to walk with this walker. He wanted to see me walk, how I walked, if I walked too fast or too slow." A suggestion from a nurse was enough for another participant to get out of bed: "The nurse called me and asked me if I wanted to go walk with her, and we went for a walk." These responses highlight the importance of encouragement from the caregiving team in promoting in-hospital exercise.

## BARRIERS

### Symptoms

Symptoms were the most common barrier to in-hospital exercise, mentioned by 71% of participants. Symptoms included weakness (29%), fatigue (29%), pain (18%), shortness of breath (14%), dizziness (11%), nausea (4%), and stiffness (4%). One participant stated: "Since I was attacked by this sickness 2 weeks ago, I cannot stand, I cannot go anywhere myself. I cannot do exercise anymore." Another participant declared: "No, no. I can't exercise now because I hardly walk, and I already feel tired. It tires my heart, and I have to sit down." Symptoms related to an acute illness requiring hospitalization must be taken into account in any exercise program and may preclude exercise and affect patient safety.

### Institutional Barriers

Forty-three percent of participants mentioned institutional barriers, including lack of support from nurses or doctors (14%), feeling tethered by an intravenous or other device (14%), active discouragement (11%), lacking a cane or walker (7%), or feeling that the hospital was unfamiliar (4%). One participant stated: "Nobody's encouraging me. ... If the doctor told me, 'You have to exercise,' then

'Okay, very well, doctor.' But I need somebody to come over to help me, because I cannot walk alone out there with the cane." Another described active discouragement of exercise in the hospital: "I've been confined because they frown on my trotting up and down the hall and would have hysteria if I got on the staircase." Other participants described concerns of being tethered to equipment: "If the nurse unplugs the IV line, I can walk okay. If not, I can walk only as far as the line will let me." Still others described lacking the necessary equipment to exercise: "That's good if there's a walker. The problem is, I have no walker."

### Fear of Injury

Five participants (18%) mentioned fear of injury as a barrier to exercise, including fear of falling (14%) and fear of a heart attack (4%). One participant described her fear of falling: "I'm afraid to walk alone. Nothing more than a fear of slipping and falling." Another participant stated: "First of all, I'm afraid to fall. You know. They told me it's different [here] than in your own bed." Others expressed fear of fainting or having a heart attack while exercising: "Maybe I will faint, and I don't want to get short of breath on my way back. Because if I walk, I don't carry oxygen." Another stated: "I can't do exercise, see, because I tire. It tires me, and it's dangerous. It gives me chest pain. It gives me chest pain, which might lead to a heart attack."

## DISCUSSION

The goal of this study was to explore the expectations and attitudes of older adults regarding in-hospital exercise. Three major findings are emphasized. First, most participants did not expect to be exercising in the hospital, and physicians suggested exercise to only one-quarter of participants. Nonetheless, most participants felt it was appropriate to exercise in the hospital and that a physician's recommendation would influence their decision to do so. Second, a powerful motivator to exercise was to avoid symptoms and complications associated with prolonged bed rest, especially boredom, pain, and fatigue. Third, although participant symptoms were the most common barrier to in-hospital exercising, institutional barriers were also important.

This is the first study of exercise expectations in hospitalized older adults. Most participants did not expect to be exercising while hospitalized. Of those who did expect to be exercising, most had previous experience with in-hospital physical therapy. Nevertheless, most participants felt it was appropriate to exercise in the hospital, although physicians and nurses counseled few to exercise. Participants reported that physician encouragement to exercise would be a motivation to do so, a finding also seen in the community,<sup>25</sup> where physician encouragement has been effective in promoting exercise.<sup>26-28</sup> These findings, taken together, form a strong rationale to include physician and nurse counseling within interventions to promote exercise in hospitalized older adults.

Most participants considered walking to be appropriate exercise in the hospital. This finding is consistent with

the perspective of community-dwelling elderly adults, who feel that walking is a preferred physical activity.<sup>29</sup> The current study validates the importance of walking as a component of in-hospital interventions to increase exercise.<sup>9</sup>

The authors are unaware of previous studies of motivators of exercise in hospitalized older adults. Four major motivators were identified: avoiding the negative effects of bed rest, promoting a sense of well-being, improving functional recovery, and being asked to exercise. These motivators are consistent with those identified in outpatient settings.<sup>30</sup> The importance of boredom as a motivator for exercise has not been previously documented. Future research should focus on effective ways to reduce boredom through exercise. Programs to increase in-hospital exercise should incorporate these motivating factors and use proactive encouragement from physicians, nurses, and physical therapists.

This study supports and expands an existing conceptual framework of barriers to in-hospital mobility that includes symptoms, fear of falling, tethers, staff shortages, and lack of assistive devices.<sup>20</sup> Additional barriers that participants identified were lack of encouragement and occasional discouragement from physicians and nurses.

This study has several limitations. First, a single interviewer was used, which could have introduced bias based on this interviewer's style and emphasis of particular topics. Second, the study was limited to patient respondents and did not include health professionals. Third, this study was conducted in an urban, university, safety net hospital with English- or Spanish-speaking patients and may not be generalizable to other settings or populations. Fourth, although thematic saturation was achieved with a sample size of 28 participants, this small sample may not reflect the views of the larger hospitalized community.

Interventions that increase in-hospital exercise are needed. Hospitals should incorporate the motivators of and remove the barriers to exercise that were identified in this study to address patient concerns and improve in-hospital exercise uptake. It is recommended that in-hospital exercise programs incorporate walking as an important component (with physical therapy consultation and individualized exercise recommendations also available); active encouragement of exercise from all members of the health-care team, especially physicians and nurses; training for nurses and physicians to recognize tethering treatments and discontinue them as early as possible; readily available assistive devices, such as canes and walkers, and properly trained staff to teach patients their appropriate use; appropriate control of pain and other symptoms; trained staff to assist patients with exercise; and incorporation of motivating factors such as reducing boredom, pain, and fatigue associated with bed rest and improving patient well-being. Given the cost savings seen in programs for hospitalized older adults that include exercise, these efforts may be cost neutral while improving outcomes.<sup>9</sup>

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