Exploring Beliefs on Rest & Activity: Helping Older People Stay Functional During Illness

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Objectives

1. Background on bed rest & physical activity

2. Risks of bed rest

3. Exploring patient perceptions of physical activity: Study of hospitalized medical patients

4. Practical Implications
Since 1950s

Getting patients up out of bed:

At minimum, recommended part of daily hospital care

(Fox, 2007)

Harmer & Henderson, 1955
Hospitalized older patients still spend a lot of time lying down (stretchers, beds, reclined chairs)

- 71% - 83% of time spent lying down
- Up to 40% of patients in bed > 24 hours

(Brown et al., 2007; 2009; Pedersen et al., 2013; Callen et al., 2004)
Risks

- Functional decline
- Depressed mood
- Nursing home admission
- Mortality
- ↑ cost of care
  (Covinsky, 2003; Wolff, 2002; Zisberg, 2011)

- Bed rest dependency (Fox, 2009)
Bed Rest Dependency

Compulsion to return to bed soon after getting up & self-limit of upright activity.

“You’d think being in bed all the time would make you feel less tired, but it’s just the opposite. It makes you feel more tired. I got up the other day …. I couldn’t stay up more than an hour. I begged to go back to bed.”

(Fox, personal communication, 2008)
Cardiovascular System

**Bed rest:** Affects every system in body (e.g. muscle, skeletal, nervous including cognition)

- Adequate functioning of the CVS during walking: highly dependent on exposure to gravitational stress along the longitudinal axis of the body
- Bed: Reduced gravitational stress. CVS adapts within 2 - 4 days (Convertino et al., 1997)
- BUT, once bed rest has ended, CVS has difficulty reversing adaptation. Compensatory mechanisms fail to adequately increase cardiac output. Insufficient delivery of oxygen & nutrients to tissues. Patient experiences orthostatic symptoms (Smith & Ebert, 1990)
Orthostatic Symptoms

• Weakness, fatigue & dizziness experienced when upright
• Hallmark of bed rest deconditioning
• Most salient determinant of upright activity limitation after bed rest

• Severity proportional to duration of bed rest (Greenleaf et al., 1982)
• Recovery takes up to 3 times duration (deBusk et al, 1983)

• Dependency evolves from belief that lying down is the best way to manage symptoms & accompanying fears (e.g. falling; exacerbating health problems due to symptoms)

• Weakness, fatigue, dizziness and fear of falling because of symptoms – reasons most frequently identified by patients & clinicians for older hospitalized patients’ reluctance to get up (Brown et al., 2011; So & Pierluissi, 2012)
Self-Management Strategy
Learned In Acute Care

Exposure to bed rest during acute illness - starting point in the trajectory to bed rest dependency

Study in complex Continuing Care facilities in Ontario (similar to US skilled nursing facilities)
- 72% of patients were currently making the decision to be on bed rest
- 70% wanted to continue bed rest
- Tended to use bed rest to manage fatigue

(Fox et al., 2009)
Acutely-ill Older Patients With Multiple Chronic Conditions

• People with higher levels of chronicity have higher rates of hospital admission (Longman et al., 2012; Mihailoff et al., 2017)

• Vulnerable to extended time in bed because tend to use rest as a strategy for managing symptoms, such as fatigue, associated with chronic conditions (Fox et al., 2009)
Important to Examine These Patients’ Perceptions

- Physical activity studies with older patients: low to moderate adherence

- Too intense, poor tolerance in some (Fox et al., 2018)

- Medical Research Council: intervention adherence challenged by low acceptability - limits feasibility & undermines effectiveness

- **Perceived acceptability**: reflects intervention appropriateness, effectiveness and ease of use with minimal side effects or risks (Sidani, 2015)

- Interventions perceived as acceptable & preferred - more likely to be used (Medical Research Council, 2000; Sekhon et al., 2017)
Two Evidence-Informed Low Intensity Physical Activity Interventions

Bed-to-Sitting
Orthostatic symptoms of bed rest mitigated by regular exposure to orthostatic stress (e.g. sitting upright with legs dependent) & activation of the muscle venous pump of the legs (e.g. elevating legs, pointing toes) (Convertino, 1983; Bouvette et al., 1996; Krediet et al., 2007)

Sitting-to-Walking
More intensive (e.g. walking) with a stronger dose (e.g. being upright for 3.5 hr/24 hrs) - orthostatic symptoms mitigated by upright posture (Convertino et al., 1978; 1982)

Informed of orthostatic effects of bed rest (feeling dizzy, tired & unsteady on feet & trouble walking when first get up) because avoiding negative effects motivates older patients to engage in activity (So & Pierluissi, 2012)
Interview Protocol

• Nurse explained orthostatic effects of bed rest

• Described 2 interventions & explained that they were based on prior research to help reduce these problems

• Played video of each intervention

• Explained intervention activities, anticipated benefits, and possible side effects (e.g. dizziness, tiredness if a lot of time spent in bed before initiating). Clarified when side effects should resolve

• Administered Treatment Acceptability & Preference Scale

• Asked semi-structured questions exploring preferences
Patient Characteristics Associated With Acceptability & Preference

Acceptability: No significant characteristics (baseline functional capacity, illness severity, gender, medication/illness with orthostatic effects, comorbidity)

Preference: illness severity (twice as likely to prefer sitting-to-walking)

Why? Possible Reasons:
• Beliefs on severity & consequences of illness influences preferences in other populations (Kievit et al., 2001; Riedel-Heller et al., 2011)
• Consequently, patients who were sicker may have preferred the more intensive sitting-to-walking intervention & viewed it as better at preventing orthostatic symptoms & trouble walking (Fox et al., 2018)
Opinions About The Interventions: Descriptive Statistics

**Bed-to-Sitting:** 15% preferred

**Sitting-to-Walking:** 43% preferred
- 78% effective short-term
- 82% effective in long-term
- 3% rated side effects or risks as severe
- 20% not willing to comply
- 20% not appropriate
- 33% not easy
Qualitative Findings

• Beliefs about bed rest

• Beliefs about activity
Beliefs About Bed Rest: Be Wary

In general, most participants understood staying in bed is detrimental.

“The longer I wait (to get up), the harder it will be.” (female aged 83; admitted with a-fib)

“The body forgets how to walk. The body forgets to do things, how to go to the bathroom.” (female aged 70; admitted with fever NYD)
But… Sometimes Necessary

“I think people who don’t feel too well, they should go to bed. Nothing wrong with going to bed.” (female aged 77; admitted with pneumonia)

“You have to stay in bed…I don’t have enough energy, energy to get up and go. [I feel] Tired. I just feel sick.” (female aged 67; admitted with severe pelvic pain NYD)
Beliefs About Physical Activity: Important But Cannot Be Too Intensive

“For the beginning [after hospital admission], that [bed-to-sitting] would be enough. And if I move, if I were to get more experience and I see an improvement, then probably I’d be more interested in the other [sitting-to-walking]” (female aged 83; admitted with a-fib)

“I remember, the first time they gave me a walker, I had just finished the operation and physio came in and said ‘here’s a walker, walk’, and I nearly fell down because I was completely unprepared…certainly going a lot slower than what is in the video [sitting-to-walking]” (male aged 67; admitted with gastroenteritis, colitis, & foot infection; bed-to-sitting)
Consistent With Other Research On Perceptions Of Older Hospitalized Patients

Many (25% - 34%) older people believe walking - inappropriate during hospital stay - Need to stay in bed & focus on recovering, not walking

(Boltz et al., 2014; So & Pierluissi, 2012)
Reflective Questions To Get At Beliefs about Acceptability Of Interventions

Describe the intervention (activities, how often, effectiveness, risks based on prior research).

What do you think…
• Will it work? If no, why not?
• Is it appropriate? If no, why not?
• Will it be easy to do? If no, why not?
• Are you concerned about any risks/side effects? What are they?
Potential Strategies

• Believe it won’t work: Give info on effectiveness.
• Need to rest: Educate on risks & prolonged recovery (e.g. each day spent lying down will prolong recovery by up to 3 days). Encourage resting in chair instead of in bed.
• Tired: Recommend pacing strategies (walk for a few minutes at first, take a rest, then walk again).
• Afraid of falling: Implement safe mobility strategies. Encourage walking at bedside or with family.
• Too intense: Start slow & progress. Have patient/ family track progress.
Wrap Up: Case study

80 year old woman spent 24 hours in ER lying on stretcher & admitted to medical unit for acute exacerbation of COPD. Daughter tells you that patient walks with cane at home but spent most of 3 days prior to admission lying in lazy boy chair because didn’t feel well. Patient reports that she needs to rest. No medical order for bed rest. Activity as tolerated.

What is the best strategy to use to help this patient return to usual activity level?

a. Discourage sitting in chair

b. Tell the patient to expect orthostatic symptoms that should resolve within 2 days

c. Teach the patient and daughter about the complications of bed rest

d. Encourage the patient to start walking as much as possible without overdoing it
Thank You

Please feel free to contact me with any questions.

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