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Enhanced Medical Rehabilitation is feasible in a skilled nursing facility: preliminary data on a novel treatment for older adults with depression

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We report feasibility data for Enhanced Medical Rehabilitation (EMR), a novel high-intensity and high-engagement physical and occupational therapy (PT and OT) intervention. Older adults commonly need acute medical rehabilitation for disability, and in this context, depressive symptoms frequently arise and impair recovery. Hence medical rehabilitation settings such as skilled nursing facilities (SNFs) are an important venue for late-life depression (LLD) management.¹ PT and OT in real-world acute rehabilitation settings is low-intensity^{2,3} and does not effectively treat LLD;⁴ this may be due to the lack of therapist incentives, training, and supervision to provide high-intensity and highly engaging, interactive, patient-directed therapy. Accordingly, we developed EMR -- a PT and OT-led intervention designed to overcome depression-related barriers to medical rehabilitation and improve mood symptoms and functional outcomes, by increasing both rehabilitation intensity and engagement with patients during all therapeutic sessions. EMR was designed to be consistent with the core principles of PT and OT, with three foci for therapy sessions: high intensity, feedback to patients on their effort and progress, and a patient-directed approach stemming from patient-initiated goals. EMR does not prescribe specific activities or exercises; rather, therapists apply these principles to their PT and OT sessions. The EMR manual is available from the authors.

We trained and supervised four therapists (two OT, two PT) at a local SNF and monitored competence and adherence to the EMR model. From February-July 2010, we recruited nine cognitively intact participants who were admitted the SNF for acute rehabilitation and were aged 60+ (mean 77.8 [SD=9.9] years); five were African-American and four were

Caucasian; four were male. Subjects had multiple sources of disability; mean Cumulative Illness Rating Scale score was 17.8 (SD=6.8), indicating high medical burden. Mean SNF length of stay was 28.7 (SD=7.7) days, of which subjects received 18.2 (SD=6.6) days of EMR consisting of one OT and one PT session daily (Mon-Fri). EMR session duration averaged 74.1 (SD=14.2) minutes; i.e., about 150 minutes daily combined OT and PT. The mean Rehabilitation Participation score, in which therapists rated patients' participation in each session on a 1 [none] to 6 [excellent; very actively engaged] scale⁵, was 5.0 (SD 1.4; n=182), indicating that the subjects were actively engaged in therapy sessions. Subjects were followed for 90 days; one withdrew during the intervention and three others were lost to follow-up prior to day 90.

The nine subjects showed significant improvement in depressive symptoms, as measured by the Montgomery-Asberg Depression Rating Scale, declining from 16.0 [SD=6.5; range 8-27] at baseline to a mean of 3.7 [SD=1.5] by day 90; $F(df=1,31)=16.8$, $p<0.001$. Function also improved, as measured by Barthel Index scores increasing from 61.1 [SD=8.6] to mean of 87.7=[1.8] by day 90; $F=22.4(df=1,15)$, $p<0.001$.

In summary, these data demonstrate feasibility of EMR in a community-based SNF setting. Therapists trained in the model successfully engaged frail, often depressed older adults in high-intensity PT and OT, leading to affective and functional recovery. Preliminary outcome data are promising for antidepressant and functional recovery benefits of EMR, supporting its testing in a randomized controlled trial.

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