FOCUSED QUESTION
For patients with hip or knee osteoarthritis, does occupational therapy focusing on tailored activity pacing interventions, when compared with generalized activity pacing treatment, improve daily functioning and decrease symptoms associated with osteoarthritis?


CLINICAL BOTTOM LINE:
Despite non-significant differences in fatigue between the tailored activity group and the control, moderate-to-large effect sizes between groups were noted by Murphy and colleagues (2010). This finding suggests that research studies with larger samples should be conducted to fully identify the influence of tailoring activity on other symptoms associated with osteoarthritis of the hip and knee. Murphy and colleagues (2010) found that both groups experienced a decrease in pain from the baseline to the 10-week follow-up ($p = .77$). Because pain was not focused on as much as fatigue relief, future studies focusing on the decrease of pain could lead to more significant outcomes between groups. In this article, examples of tailored activity recommendations included planning for yard work or housework on a day that did not also involve partaking in child care activities, incorporating short rest breaks (5–10 minutes) for every 30–60 minutes of activity, and increasing the frequency of breaks earlier in the day to avoid evening symptom flares. Occupational therapists should collaborate with clients to identify home activities that may be adapted through activity pacing and tailored activities in order to lower fatigue and make an effort to reduce pain.

RESEARCH OBJECTIVE(S)
List study objectives.

Murphy and colleagues (2010) sought to determine whether a customized activity pacing intervention plan had better outcomes in the areas of function and symptom reduction than general, noncustomized intervention plans.
DESIGN TYPE AND LEVEL OF EVIDENCE:

Level I: Randomized controlled trial

Limitations (appropriateness of study design):
Was the study design type appropriate for the knowledge level about this topic? Circle yes or no, and if no, explain.

YES  NO

SAMPLE SELECTION
How were subjects selected to participate? Please describe.
A sample of convenience was obtained using public advertisements in southeastern Michigan. Potential subjects were screened via a telephone interview to determine if they met the inclusion criteria for the study. Random assignment to either the intervention or control group was completed once the sampling frame had been established.

Inclusion Criteria
To participate in the study, subjects had to be between 50 and 80 years of age, have a score of 26 or greater on the Mini-Mental State Exam, and speak English. Subjects also had to show symptoms of hip or knee osteoarthritis (OA) in at least one joint through self-report for at least 3 months and show joint changes on an x-ray. A pain score of 4 or greater was also needed on the Western Ontario and McMaster Universities Osteoarthritis Index.

Exclusion Criteria
Subjects were excluded if they were not able to walk, had medical conditions aside from OA that negatively impacted daily activity performance causing pain or fatigue, had a joint replacement/surgery on a hip or knee in the last 6 months, were currently in treatment for OA symptoms, or could not use the accelerometer used in the study.

SAMPLE CHARACTERISTICS
N=42

% Dropouts 23.8%

#/ (%) Male 25%  #/ (%) Female 75%

Ethnicity 78% White, 19% African American, 3% Pacific Islander

Disease/disability diagnosis Osteoarthritis of the hip or knee

Check appropriate group:

<20/study group  20–50/study group  51–100/study group  101–149/study group  150–200/study group
### INTERVENTION(S) AND CONTROL GROUPS

*Add groups if necessary*

#### Group 1: Control Group

| Brief Description | Prior to the intervention, both groups took part in a 5-day home monitoring program to record their baseline physical activity. Both groups received an educational module on activity pacing. The control group engaged in individual discussion with the occupational therapist about the general principles of activity pacing and received recommendations that they implement activity pacing into their daily schedules. |
| Setting | NR |
| Who Delivered? | Occupational therapist |
| Frequency? | Two one-on-one sessions over a 2-week period |
| Duration? | 1.5 hours |

#### Group 2: Intervention Group

| Brief Description | Before intervention was started, both groups took part in a 5-day home monitoring program looking at their physical activity. Both groups received an educational module on activity pacing. The intervention group received a tailored intervention that included recommendations based on a personalized report showing the relationship between activity and symptoms through visual aids. |
| Setting | NR |
| Who Delivered? | Occupational therapist |
| Frequency? | Two one-on-one sessions over a 2-week period |
| Duration? | 1.5 hours |

### Intervention Biases: Circle yes or no and explain, if needed.

#### Contamination

[ ] Yes  [x] No

#### Co-intervention

[ ] Yes  [ ] No

Subjects were excluded if they were receiving treatment other than medication for symptoms. These treatments included other physical or occupational therapy being given, as well as cortisone injections.

#### Timing

[ ] Yes  [ ] No

Murphy et al. (2010) reported that implementation of another session in this study would have allowed the participants to address the barriers of activity pacing that were discovered in the second session. This third session would have permitted the clients to have time to practice symptom management strategies instead of only identifying them.
MEASURES AND OUTCOMES

Complete for each relevant measure when answering the evidence-based question:
Name of measure, what outcome was measured, whether the measure is reliable and valid (as reported in article – yes/no/NR [not reported]), and how frequently the measure was used.

The Western Ontario and McMaster (WOMAC) Universities Osteoarthritis Index was used to measure pain. Murphy and colleagues (2010) stated that it is validated. NR for reliability. This measure was completed before intervention, after the intervention was complete, and 10 weeks post intervention.

The Brief Fatigue Inventory (BFI) was used to measure fatigue. Murphy and colleagues (2010) stated that it is validated in cancer patients. NR for reliability. This measure was completed before intervention, after the intervention was complete, and 10 weeks post intervention.

Six-Minute Walk Test and the Timed Up and Go Test were used to assess physical function. These measures were identified as validated and NR on reliability.

Actiwatch-Score (wrist-worn accelerometer) was used to measure physical activity. Murphy and colleagues (2010) stated that this measure has preliminary criterion validity. NR for reliability. This measure was used for a 5-day home monitoring period before the sessions. These measures were taken 6 times per day: upon waking, 2 hours after waking, 4 hours after waking, 8 hours after waking, 12 hours after waking, and 30 minutes before bed. This was completed again after the sessions were complete and 10 weeks post-intervention.

Measurement Biases
Were the evaluators blind to treatment status? Circle yes or no, and if no, explain.

All investigators were blinded to subjects’ group and were allocated to groups via a computer-generated program. The evaluators were blinded to the study hypotheses and data collection process.

Recall or memory bias. Circle yes or no, and if yes, explain.

RESULTS
List results of outcomes relevant to answering the focused question
Include statistical significance where appropriate (p < 0.05)
Include effect size if reported

Interestingly, there was no difference in pain between the intervention and control groups at the 10-week mark and the effect size was small ($d = 0.38$). The BFI’s fatigue severity scale also did not show significant differences between groups; however, there was a move toward greater decrease of pain in the tailored group ($p = .09$), with a moderate to large effect size ($d = .79$). Fatigue interference on the BFI dropped more in the tailored group ($p = .02$), with a large effect size ($d = 1.10$) for this group.

Was this study adequately powered (large enough to show a difference)? Circle yes or no, and if no, explain.

YES/NO

The power in this study was limited due to a sample size of only 32 subjects. Murphy and colleagues (2010) clearly described the limited power and completed effect size analysis with valuable and promising clinical implications. Further research with larger sample sizes is warranted.

Were appropriate analytic methods used? Circle yes or no, and if no, explain.

YES/NO

Were statistics appropriately reported (in written or table format)? Circle yes or no, and if no, explain.

YES/NO

CONCLUSIONS
State the authors’ conclusions that are applicable to answering the evidence-based question.

Murphy et al. (2010) found that the severity and interference ($d = 1.10$) of fatigue ($d = .79$) was less in the group who had tailored plans. This shows that the tailored approach was needed to have an effect on fatigue experienced in patients with OA. There was no significant difference in pain reports when comparing the tailored group and the general intervention group. However, pain did decrease for both groups from the baseline to the 10-week follow-up ($p = .77$). This may show that implementing either intervention helps decrease pain experienced in the daily routines of people with OA.

This work is based on the evidence-based literature review completed by Kara L. Maatz, MOTS, and Anne M. Haskins, PhD, OTR/L, Faculty Advisor, University of North Dakota, Grand Forks, ND


For personal or educational use only. All other uses require permission from AOTA. Contact: www.copyright.com