GeriNotes

January 2023 • Vol. 30 No. 1

APTA Geriatrics
An Academy of the American Physical Therapy Association
Age on.™

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In This Issue

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From the President

Cathy Ciolek
President,
APTA Geriatrics

Happy New Year! As I write this, it is actually still 2022, but you will be reading after the calendar has turned over. The APTA Geriatrics is currently revising our strategic plan for 2023, and it looks to be an exciting year.

First, a few highlights from 2022! At the beginning of the year, we set a goal to have 1,000 student members. Instead, we welcomed almost 2,000 new student members who joined our Academy! We are truly delighted to see so many students express an interest in working with aging adults and joining our community for resources and mentorship. If you work with students, in academic or clinical education, please continue to encourage them to join our Academy.

A few more from 2022

- Our Journal Clubs continue to grow as a free resource to members.
- We added 3 cohorts of new CEEAA graduates
- In this 30th anniversary of Board Certification in Geriatric Physical Therapy, we welcomed 209 new Geriatric Clinical Specialists. Our specialty now represents 11% of all specialists nationwide.
- We published our first solo clinical practice guideline "Physical Therapist Management of Patients With Suspected or Confirmed Osteoporosis" and had members contributing to others including: Venous Thombolism, Peripheral Vestibular Hypofunction, and Parkinson's Disease.
- Our members promoted the profession with balance and falls screenings and with local and national Senior Games events.

What to look for in 2023

- Launching a new online community for PTs, PTAs, and students to connect and engage with one another in their work for older adults.
- Movement System Task Force will be sharing their recommendations for addressing movement system dysfunctions in aging adults.
- More knowledge translation materials for clinicians to apply evidence to their patient care.
- Updated Essential Competencies in Geriatrics for entry-level physical therapist education are in the works

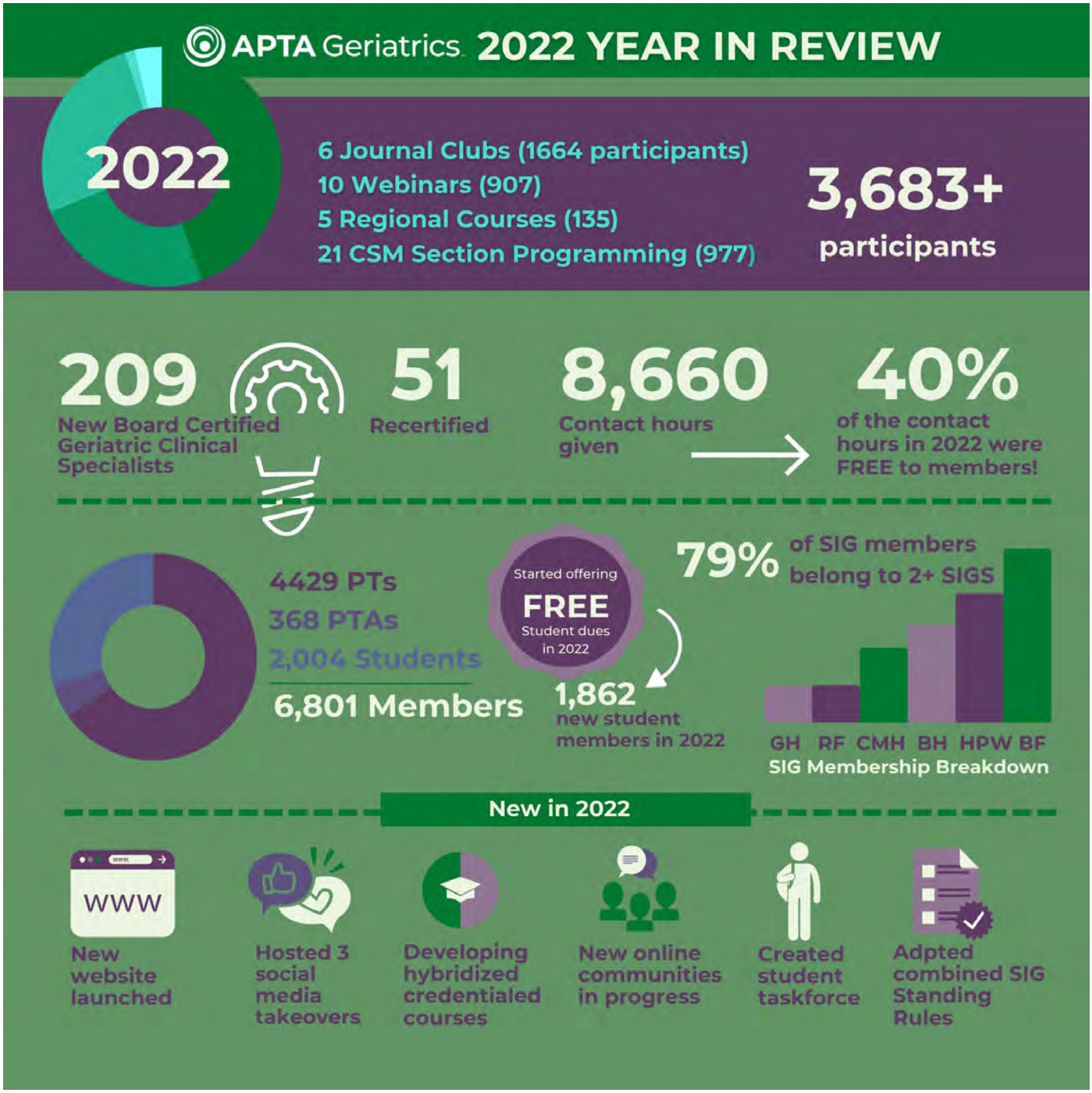
CSM 2023

The Combined Sections Meeting is right around the corner. Join us for the Carole Lewis Lecture, "Defining our role in caring for older adults" by Dr. Michelle Lusardi first thing Thursday morning. Other topics for aging adults range from dementia, concussion, jump training, osteoporosis, hip fracture, Parkinson's, and telehealth, just to name a few. And if you can't attend, there are several courses for APTA Geriatrics with the virtual option.

Due to limited space this year, we won't be able to host the GCS breakfast. Instead, we will be recognizing all the new specialists at our member meeting and awards ceremony Thursday night. We are also trying something new: a Title Sponsor for Party With a Purpose on Friday night. If you participated in our survey, you were entered into the ticket raffle for the event, and I hope to see many of you there helping us raise funds for the Foundation for Physical Therapy Geriatric Fund.

Also, be sure to stop by our booth to sit and chat for a few minutes!

These are just a few of the things to look forward to in 2023 and beyond. Thank you for your membership in APTA Geriatrics and for the care you provide to your patients, clients, and students every day.



Friends and Members we lost in 2022

Jill Cochrane, PT
Laverne Mendel, PT
John Patrick Shober, PT, DPT
Frances Curtiss, PT
Simone L. Palmer, PT, DPT
Elaine A. Ash, PT
Raymond E. Hogue, PT, PhD

Continuing Partnerships

nco national council on aging

National Senior Games Association

Centers for Disease Control and Prevention

Incoming 2023 Academy Leadership

President
Cathy Ciolek, PT, DPT, FAPTA
Board Certified Geriatric Clinical Specialist
Certified Exercise Expert for Ageing Adults™
Elected Term Expires 2024

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Board Certified Geriatric Clinical Specialist
Certified Exercise Expert for Ageing Adults™
Elected Term Expires 2024

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Elected Term Expires 2025

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Certified Exercise Expert for Aging Adults
Elected Term Expires 2026

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Elizabeth (Beth) Black, PT
Board-Certified Geriatric Clinical Specialist
Elected Term Expires 2026

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Board-Certified Clinical Specialist in Geriatric Physical Therapy
Elected Term Expires 2025

Director of Membership
Annalisa Na, PT, DPT, Ph.D
Board-Certified Clinical Specialist in Orthopaedic Physical Therapy
Elected Term Expires 2026

Director of Practice
Ken Miller, PT, DPT
Board Certified Geriatric Clinical Specialist
Elected Term Expires 2025

Director of Publications and Partnerships
Jackie Osborne, PT, DPT
Board Certified Geriatric Clinical Specialist
Certified Exercise Expert for Ageing Adults™
Elected Term Expires 2024

terms begin February 2023

From the Editor

Michele Stanley
Editor,
GeriNotes

It's a new year! A wonderful opportunity for you to make good on that resolution that you've had to try writing. *GeriNotes* loves to publish human-interest stories besides the clinical pearls and wisdom, so give it up and tell us the best/funniest/most heartwarming story or encounter that you've had with a client, or your own adventure as a therapist. Brief is good – a half page or less – but a more involved story is also welcome. It would be great to collect several stories for a feature. Consider submitting those "pictures worth 1,000 words," as well.

Speaking of New Years' resolutions, for many people diets, weight loss, etc. make the annual list. Therapists know that we live and work in a world in which the number of people living in larger bodies is growing. Merriman and McMillan ask that you consider the effects of your weight bias on client outcomes (pg. 22) Evan Nelson (pg. 15) and Heidi Moyer (pg 18) ask you to consider how mental health biases health outcomes and encourage you to factor this into the plan of care.

What's in a name? NOT the "E" anymore by a new decision of the APTA Geriatrics Board. So, for all of you whose articles I have red-inked in the past (and you know who you are — anyone who wrote anything!), it is now correctly only "aging" and NOT "ageing."

Journal Club this month features a case report by master clinician Sherri Betz detailing treatment of someone with osteoporosis using Pilates. Catch up more with Sherri at CSM on Thursday when she gives a full research update on Exercise for Osteoporosis.

More from CSM

So much to learn, so little time to cram it all in February 22 – 25 in warm and sunny San Diego. Here are some programs you won't want to miss:

- Do you get confused about therapy approaches for confused (cognitively challenged) people presenting to your clinic? Nicole Dawson and crew from the CMH SIG have some distilled guidance for increasing the efficacy of rehabilitation by type of dementia — Thursday.
- Learn behavioral interventions targeting cognitive-motor neuroplasticity — Friday.
- We know the research about benefits of Jump Training for older bones – find out how to do this safely with Wendy Anemaet and Jill Jumper — Friday.
- Have you tried HIT training with people post hip fracture. Is it tolerable and safe? Kathleen Mangione and colleagues share clinical thoughts on this — Friday.
- Defining Our Role in Caring for Older Adults: Michelle Lusardi presents key words to contemplate in the awarded Carole Lewis Lecture — Thursday.

These are a very partial list of the stimulating content available this year. Plus, I'll be at the APTA Geriatrics booth during many unopposed sessions. You can pitch me your story ideas, say "Hi," or offer suggestions to improve the overall *GeriNotes* experience.

Finally, while you are waiting to board that plane for CSM, get some sleep! Your mom was right. Good sleep does improve your strength and performance.

APTA Geriatrics Journal Club

*Register for the free **Journal Club** discussion webinars and earn 1.5 contact hours. Questions for presenters may be emailed to gerinoteseditor@gmail.com before or on the day of the webinar. See what's coming up at https://geriatricspt.org/events/webinars/.*

GeriNotes

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Mission: To provide engaging content that empowers the community of physical therapy clinicians to build expertise and expand the delivery of evidence-informed care that promotes health and wellness in aging adults.

Vision: To create an evolving online community through which clinicians develop their knowledge and skills based in shared ideals that are person-centered; and promote a world where aging adults move, live, and age well.

Elevate. Engage. Enjoy San Diego!

APTA Combined Sections Meeting

Feb. 23-25 / San Diego, California

Join us for all the exciting programming, networking, and special events you can't get anywhere else!

apta.org/CSM

APTA
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Geriatrics Section Programming

Wednesday, February 22, 2023

8:00 AM - 5:00 PM
GR-13941 Learning How to Fall: Preventing Injuries with Safe Fall Landing Strategies *1-day Preconference Course
Steven Gilles Kinney, PT, DPT, John Kiesel, PT, DPT, Meynard Villenas Enriquez, PT, DPT and Sharon John, PT

8:00 AM - 5:00 PM
GR-14701 Focus Geriatrics: Physiological Aging and Social Determinants of Health Impact on PT Plan of Care *1-day Preconference Course
Jill Elaine Heitzman, PT, DPT, PhD, William H. Staples, PT, DPT, DHSc, FAPTA and Tamara Nancy Gravano, PT, DPT, EdD

Thursday, February 23, 2023

8:00 AM - 10:00 AM
GR-13867 Sarcopenia, Obesity, and Sarcopenic Obesity: A Conversation about Geriatric Vulnerabilities and Benefits of Behavior Modification
Odessa Rene Addison, PT, DPT, PhD, Monica Serra, Kathleen Dondero and Ronna Robbins

8:00 AM - 10:00 AM
GR-14533 The Carole Lewis Lecture Key Words: Defining Our Role in Caring for Older Adults?
Michelle M. Lusardi, PT, DPT, PhD, FAPTA

8:00 AM - 10:00 AM
GR-15287 Geriatrics Platform Session 1
Jessie M. VanSwearingen, PT, PhD

11:00 AM - 1:00 PM
GR-14046 Don't be Fooled! PT Services and Documentation Still Matter in the SNF PDPM Arena
Jaclyn Kay Warshauer, PT and Mary L. Saylor-Mumau, PT, MPT

11:00 AM - 1:00 PM
GR-14500 Connective Tissue Hypermobility in the Aging Adult: Clinician's Perspective on Assessment, Movement Analysis, and Intervention
Robin Lee Schroeder, PT

11:00 AM - 1:00 PM
GR-14820 Clinical Practice Guideline for the Management of Falls in Community-Dwelling Older Adults
Timothy A. Hanke, PT, PhD, Keith G. Avin, PT, PhD, Christine M. McDonough, PT, PhD, Neva Jillaine Kirk-Sanchez, PT, PhD and Jennifer A. Blackwood, PT, PhD

3:00 PM - 5:00 PM
GR-13733 The ABCs of Dementia: Adrd, Ftd, Lbd, Nph - Which Therapy Approach Is Effective?
Nicole Therese Dawson, PT, PhD, Laura Wilson White, PT, MSPT, DScPT, Christine Marie Ross, PT, DPT and Morris Casano Beato, PT, DPT

3:00 PM - 5:00 PM
GR-13903 Research Update on Exercise for Osteoporosis
Sherri R. Betz, PT, DPT

6:30 PM - 7:30 PM
GR-14931 • APTA Geriatrics Members Meeting & Board-Certified Geriatric Clinical Specialist Recognition & Awards Ceremony
aegis therapies®

Friday, February 24, 2023

8:00 AM - 10:00 AM
GR-14004 Quality Initiatives for Deprescribing 101: Role of Rehab Therapists as Part of the Interprofessional Team
Aimee E. Perron, PT, DPT and Patricia Larkin-Upton, PT, DPT, MS

FRIDAY - 8:00 PM - 11:00 PM
Party with a Purpose *New Museum, San Diego*
Reserve space in your CSM plans for this special event that will fund three deserving non profit organizations. Innovated by the Academy of Geriatric Physical Therapy, the Academy of Leadership and Innovation and ATI Physical Therapy. Food. Drinks. Entertainment. Registration coming soon . . .

8:00 AM - 10:00 AM
GR-14133 Thicker Than Water: Antithrombotic Medications in Rehabilitation
Kevin M. Neville, PT, DPT and Kenneth L. Miller, PT, DPT

8:00 AM - 10:00 AM
GR-14749 High-Intensity Strength Training Initiated Early Post Hip Fracture: Is It Really Safe and Tolerable?
Kathleen Kline Mangione, PT, PhD, FAPTA, Morten Tange Kristensen and Jan Arnholtz Overgaard, PT

11:00 AM - 1:00 PM
GR-13984 Jump In! Jump Training for Older Adults
Wendy K. Anemaet, PT, DPT, PhD and Jill Danielle Jumper, PT, DPT

11:00 AM - 1:00 PM
GR-14376 Novel Behavioral Interventions Targeting Cognitive-Motor Neuroplasticity in Older Adults
Tanvi Bhatt, PT, PhD, Susan Hughes, David Marquez and Ulf Bronas

3:00 PM - 5:00 PM
GR-13694 More Than a Headache: Concussion in Older Adults
Rebecca Ann Bliss, PT, DPT, DHSc and Cathy H. Ciolek, PT, DPT, FAPTA

3:00 PM - 5:00 PM
GR-13864 Strategies to Enhance the Aging Adult's Ownership of Physical Activity During Physical Therapy and Beyond
Nola S. Peacock, PT, MPT, DSc, Tiffany Elisa Shubert, PT, Anne Thackeray, PT, MPH, PhD and Ward Heij

Saturday, February 25, 2023

8:00 AM - 10:00 AM
GR-13711 Entry-Level Competencies in Geriatric PT: Where Do We Go From Here?
Jill Elaine Heitzman, PT, DPT, PhD, Karen M. Blood, PT, DPT and William H. Staples, PT, DPT, DHSc, FAPTA

8:00 AM - 10:00 AM
GR-14217 Defying Chronology: A Novel Framework for Facilitating Intentional Aging
Matthew Louie Sahhar, PT, DPT and Kathryn K. Brewer, PT, DPT, MEd

8:00 AM - 10:00 AM
GR-15288 Geriatrics Platform Session 2
Jessie M. VanSwearingen, PT, PhD

11:00 AM - 1:00 PM
GR-13706 Identifying, Testing, and Adapting Treatment for Individuals With Cognitive Challenges
Christine Mary Childers, PT, PhD, Rashelle Marie Hoffman, PT, DPT, PhD, Christine Marie Ross, PT, DPT and Samantha Nicole Laswell, PTA

11:00 AM - 1:00 PM
GR-14248 Joining the Fight for Parkinson: Combating Disease Progression through Evidence-Informed Interventions across the Continuum
Haim D. Nesser, PT, DPT, Stefanie Bond, PT, DPT and Heather S. Timothy, PT, MSPT

11:00 AM - 1:00 PM
GR-15289 Geriatrics Platform Session 3
Jessie M. VanSwearingen, PT, PhD

3:00 PM - 5:00 PM
GR-14569 Visual Observation of Movement: The Foundation of Clinical Reasoning — A Case-Based Approach
Ann Marcolina Hayes, PT, DPT, MHS, Chris Anne Sebelski, PT, DPT, PhD, Elissa Claire Held Bradford, PT, PhD and Bradley Abrams, PT, DPT

3:00 PM - 5:00 PM
GR-14766 Telerehabilitation and Geriatrics: Expanding Access and Service to Prevent Frailty and Falls with Physical Therapy
Amanda L. Olney, PT and Katherine Ritchey, MPH, DO

See the CSM 2023 APTA Geriatrics Platform and Poster Abstracts

PLATFORM ABSTRACTS POSTER ABSTRACTS

Programming as of 12/17/2022. Please visit www.apta.org/csm for updates.

Register at
www.apta.org/csm

Be All You Can Be: An Advocate's Journey

by Gretchen Jackson, PT, DPT

What a journey! Be the best you can be and do the most you can do! State advocacy provides opportunity to publicly support geriatric physical therapy. The older generation needs to know the benefits of geriatric physical therapy, our peers need to know how to challenge their older patients, and the public needs to be aware of the value that physical therapy can offer to help older adults.

I started my journey as the Tennessee State Advocate for Geriatric Physical Therapy in 2016. My first activity as an advocate was to present a Fall Prevention Awareness Fair. Now annual, this event started small. Adding co-advocate Teresa Lovely, DPT, the fair grew holistically to approach fall prevention by including other healthcare professionals to educate seniors and caregivers. Fall Prevention Awareness programs have grown across the country as well in Tennessee through APTA as well as the Council on Aging, the Tennessee Commission on Aging and Disability, and the Tennessee Department of Health.

An advantage of being an advocate is building on your strengths while challenging yourself to promote geriatric physical therapy. I prefer in-person events but knew, especially during the pandemic, that the team needed to reach out to others online. Teresa was more tech savvy then I, and she started the Facebook page. Together, we reached out to our members with email communication and held Zoom meeting opportunities. I attended the Tennessee APTA state conferences with an exhibition booth to reach out to physical therapists, assistants, and students in almost all therapy settings.

Legislators also need to know how important physical therapy is for their older constituents. With the Tennessee Legislative Committee, I joined other physical therapists, physical therapist assistants and students at the Day on The Hill. It was a great opportunity to meet my state senator and representative and explain physical therapy benefits for the people in their district. Understanding the importance of building relationships with state and national government officials led me to the positions of Tennessee APTA Legislative Chair and APTA Delegate.

To counter ageism, I wanted to reach out to active older athletes. Dr. Becca Jordre, originator of the Senior Athlete Fitness Exam (SAFE) at the National Senior Games, encouraged state advocates to provide SAFE screening on the state level. The Tennessee Senior Olympics are held annually very close to where I live, so I started providing this screen for senior athletes 6 years ago. It was so inspiring to me to work with athletes motivated to stay active and not let age define what they can and cannot do. The Senior Olympics provides an opportunity for older people to challenge themselves physically. This experience motivated me to support Tennessee Senior Olympics throughout the year as a board member.

Being a state advocate has been a personal springboard out of my comfort zone to make a positive impact on our profession and older adults. I hand over this exciting adventure to 3 amazing therapists: Lauren Scanlon, DPT (who joined me last year), Sarah Ison, DPT and Bianca Simmons, DPT.

Get out of your comfort zone! Reach out to the advocate in your state: participate in an event, join in a discussion, or even become a state advocate yourself! Hit the springboard and see where it takes you personally and professionally.

Gretchen Jackson, PT, DPT is board certified in Geriatric Physical Therapy and is a Certified Exercise Expert for Aging Adults. She is the APTA TN Legislative Chairperson and the Middle Tennessee Delegate. She is employed by HealthPro-Heritage and works at Harmony at Brentwood in Tennessee.

New Year, New Rules

by Ellen R. Strunk, PT, MS

The new year is here! That can only mean one thing – new rules have been implemented; discussion moves to what policies are in store for this year. Members of APTA Geriatrics work across the spectrum of health care. As a result, there is a lot to monitor and plan for. This article will discuss the major policy decisions for 2023, as well as look to the future for what may be in store for physical therapy.

Facility-based health care providers follow a fiscal year (FY) that begins Oct. 1 and ends Sept. 30 of the following year, while non-facility-based providers, including home health agencies, follow a calendar year (CY). The FY 2023 Inpatient Rehabilitation Facility (IRF) Prospective Payment System (PPS) Final Rule (87 FR 47038),[1] the FY 2023 Skilled Nursing Facility (SNF) PPS Final Rule (87 FR 47502)[2] and the FY 2023 Inpatient Prospective Payment System (IPPS)/Long-Term Care Hospital (LTCH) PPS Final Rule (87 FR 48780)[3] were all published in August (see Table 1 on pg 13). Three months later, the CY 2023 Home Health (HH) PPS Final Rule (87 FR 66790)[4] and the CY 2023 Payment Policies under the Physician Fee Schedule Final Rule (87 FR 69404)[5] were released (see Table 2 on pg 14). If you practice in one or more of these provider types, it is encouraged that you read the final rule yourself and become accustomed to understanding the organization and language.

The proposed and final rules are extremely important policy-making vehicles for the Centers for Medicare and Medicaid Services (CMS). In addition to providing annual payment updates, they are also the mechanism by which CMS implements new programs or changes requirements which providers must adhere to. That is why there is a significant amount of advocacy effort that goes into responding to the proposed rules, including writing comment letters that either support a proposed policy or explain why the proposed policy would be harmful to the physical therapy practice. This issue of Policy Talk will provide an overview of the major changes for FY and CY 2023, but readers are encouraged to visit the final rule links in the endnotes for additional information.

What's Next?

CMS is amid its pre-rulemaking now. *The pre-rulemaking process provides CMS the opportunity to hear from stakeholders when they are considering quality measures for each of its programs.* Each year by Dec. 1, CMS is obligated to issue a List of Measures Under Consideration (MUC) to comply with the statutory requirement that the Secretary of the Department of Health and Human Services (HHS) make publicly available a list of certain quality and efficiency measures that the Secretary is considering for adoption through rulemaking under Medicare. Among the list of measures CMS is considering are measures that were originally suggested by the public. CMS evaluates the suggested measures to determine whether CMS would consider them for use in one or more Medicare programs. If CMS determines that it would consider the use of a measure, and the pre-rulemaking process applies to the measure, CMS adds it to the MUC List so the Measure Applications Partnership (MAP) can provide input on the measure. However, inclusion of a measure on this list does not obligate CMS to propose to adopt or finalize the adoption of the measure for the identified program. Therefore, this list may include a larger number of measures than the number of measures CMS will decide to propose for adoption through rulemaking.

This year, CMS included 52 measures on the 2022 MUC list. Of interest to physical therapists, is a cross-setting function score measure included on the list for IRFs, LTCHs, SNFs and HHAs. The measure estimates the percentage of patients who meet or exceed an expected discharge function score. Another measure, the COVID-19 Vaccine: Percent of Patients/Residents Who Are Up to Date would collect information on whether patients admitted to IRFs, LTCHs, SNFs and HHAs are up to date with their COVID-19 vaccine. While there are several measures on the MUC list for the Merit-based Incentive Payment System (MIPS), there are no new ones that especially apply to physical therapists.

References

1. Centers for Medicare & Medicaid Services (CMS). Medicare Program; Inpatient Rehabilitation Facility Prospective Payment System for Federal Fiscal Year 2023 and Updates to the IRF Quality Reporting Program. August 1, 2022. https://www.federalregister.gov/documents/2022/08/01/2022-16225/medicare-program-inpatient-rehabilitation-facility-prospective-payment-system-for-federal-fiscal
2. Centers for Medicare & Medicaid Services (CMS). Medicare Program; Prospective Payment System and Consolidated Billing for Skilled Nursing Facilities; Updates to the Quality Reporting Program and Value-Based Purchasing Program for Federal Fiscal Year 2023; Changes to the Requirements for the Director of Food and Nutrition Services and Physical Environment Requirements in Long-Term Care Facilities. August 3, 2022. https://www.federalregister.gov/documents/2022/08/03/2022-16457/medicare-program-prospective-payment-system-and-consolidated-billing-for-skilled-nursing-facilities
3. Centers for Medicare & Medicaid Services (CMS). Medicare Program; Hospital Inpatient Prospective Payment Systems for Acute Care Hospitals and the Long-Term Care Hospital Prospective Payment System and Policy Changes and Fiscal Year 2023 Rates; Quality Programs and Medicare Promoting Interoperability Program Requirements for Eligible Hospitals and Critical Access Hospitals; Costs Incurred for Qualified and Non-Qualified Deferred Compensation Plans; and

Changes to Hospital and Critical Access Hospital Conditions of Participation. August 10, 2022. https://www.federalregister.gov/documents/2022/08/10/2022-16472/medicare-program-hospital-inpatient-prospective-payment-systems-for-acute-care-hospitals-and-the
4. Centers for Medicare & Medicaid Services (CMS). Medicare Program; Calendar Year (CY) 2023 Home Health Prospective Payment System Rate Update; Home Health Quality Reporting Program Requirements; Home Health Value-Based Purchasing Expanded Model Requirements; and Home Infusion Therapy Services Requirements. November 4, 2022. https://www.federalregister.gov/documents/2022/11/04/2022-23722/medicare-program-calendar-year-cy-2023-home-health-prospective-payment-system-rate-update-home
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6. Centers for Medicare & Medicaid Services (CMS). Medicare Program: Hospital Outpatient Prospective Payment and Ambulatory Surgical Center Payment Systems and Quality Reporting Programs; Organ Acquisition; Rural Emergency Hospitals: Payment Policies, Conditions of Participation, Provider Enrollment, Physician Self-Referral; New Service Category for Hospital Outpatient Department Prior Authorization Process; Overall Hospital Quality Star Rating; COVID-19. November 23,2022.
7. Centers for Medicare & Medicaid Services (CMS). Measures Management System (MMS). Measure Implementation. https://mmshub.cms.gov/measure-lifecycle/measure-implementation/pre-rulemaking/overview

Ellen R. Strunk is President and Owner of Rehab Resources & Consulting, Inc., a company providing consulting services and training to providers in postacute care settings with a focus on helping customers understand the CMS prospective payment systems. She also lectures nationally on the topics of pharmacology for rehabilitation professionals, exercise and wellness for older adults, and coding/ billing/ documentation to meet medical necessity guidelines and payer regulations.

Table 1. Themes from the FY 2023 IRF, SNF and LTCH PPS Final Rules

	Inpatient Rehabilitation Facility	Skilled Nursing Facility	Long-Term Care Hospital
Payment Updates	Estimated increase in aggregate payments of $275 million.	Estimated increase in aggregate payments of $904 million.	Estimated increase in aggregate payments of $71 million.
Quality Reporting Program (QRP)	CMS finalized an "All-Payer" proposal beginning with the FY 2026 QRP. Therefore, IRFs will be required to collect and report IRF-PAI assessment data with respect to admission and discharge for all patients, regardless of payer, discharged on or after October 1, 2024. As finalized in the FY 2022 IRF PPS Final Rule, IRFs began collecting new standardized patient assessment data elements and transfer of health information on all Medicare Part A and Managed Care patients beginning October 1, 2022. Failure to report this information may result in a 2% reduction in payments in FY 2024.	One new measure was added: 1. *Influenza Vaccination Coverage among Healthcare Personnel.* Beginning October 1, 2022, SNFs must begin collecting this information annually. Failure to report this information may result in a 2% reduction in payments in FY 2024. CMS also finalized a revised compliance date for the collection of the Transfer of Health (TOH) Information measures and certain standardized patient assessment data elements from October 1st of the year that is at least 2 full fiscal years after the end of the COVID-19 PHE to October 1, 2023.	As finalized in the FY 2022 IPPS/LTCH PPS Final Rule, LTCHs began collecting new standardized patient assessment data elements and transfer of health information on all patients beginning October 1, 2022. Failure to report this information may result in a 2% reduction in payments in FY 2024.
Value Based Purchasing (VBP) Program	NA	CMS suppressed the SNF All-Cause Readmission measure for the FY 2023 Program Year, meaning that once again, SNFs will not receive a bonus or penalty for their readmission rates during CY 2021. CMS finalized this policy again, due to the potential impact of the COVID pandemic on the rates. CMS will also begin risk-adjusting its measures for COVID-19. Three new measures were added to the SNF VBP Program: 1. *SNF Healthcare Associated Infections (HAI) Requiring Hospitalization (SNF HAI)* for the FY 2026 program year. 2. *Total Nursing Hours per Resident Day Staffing (Total Nurse Staffing)* for the FY 2026 program year. 3. *Discharge to Community (DTC) – Post-Acute Care Measure for SNF (NQF #3481)* for the FY 2027 program year.	NA
FHIR and Digital QM	CMS is sought information on IRF's opinions about replacing the current National Healthcare Safety Network (NHSN) Facility-Wide *Clostridium difficile* Infection (CDI) Outcome measure with a digital Quality Measure (dQM), the NHSN Healthcare-Associated *Clostridium difficile* Infection Outcome measure. This measure would eliminate the need for facilities to manually enter new infections into the NHSN monthly, and instead use a Measure Calculation Tool (MCT) that pulls data directly from the electronic health record (EHR) via a standardized Fast Healthcare Interoperability Resources (FHIR) interface in the EHR.	NA	CMS is sought information on IRF's opinions about replacing the current National Healthcare Safety Network (NHSN) Facility-Wide *Clostridium difficile* Infection (CDI) Outcome measure with a digital Quality Measure (dQM), the NHSN Healthcare-Associated *Clostridium difficile* Infection Outcome measure. This measure would eliminate the need for facilities to manually enter new infections into the NHSN monthly, and instead use a Measure Calculation Tool (MCT) that pulls data directly from the electronic health record (EHR) via a standardized Fast Healthcare Interoperability Resources (FHIR) interface in the EHR.
Health Equity	CMS sought information on its ongoing plans to measure equity and healthcare quality disparities across the CMS Quality Programs. The Request for Information (RFI) had two parts on which they sought feedback. The first was a cross-setting framework and the second were concepts specific to post-acute care.		

Table 2. Themes from the CY 2023 HH PPS Final Rule

Payment Updates	Estimated increase in aggregate payments of $125 million.
PPS Updates Adjustments	As required by the Bipartisan Budget Act of 2018, and discussed in the CY 2022 HH PPS Final Rule, CMS is finalizing a methodology to determine the impact of differences of assumed and actual behavior changes on aggregate expenditures, as well as a permanent prospective payment adjustment to the home health 30-day period payment rate to account for any increases or decreases in aggregate expenditures. CMS is phasing-in the permanent adjustment by finalizing a -3.925% permanent adjustment for CY 2023. The -3.925% permanent adjustment is half of the full permanent adjustment of -7.85% (-7.69% in the proposed rule). The omnibus spending bill signed into law on December 29, 2022, included language that would require CMS to share its simulations on what HH payments would look like under the previous Medicare HH PPS, compared with the current PDGM. This is a result of strong advocacy and concern with how CMS came up with the 7.9% behavioral adjustment CMS is implementing.
Quality Reporting Program (QRP)	The suspension of collection of the Outcome and Assessment Information Set (OASIS) data from non-Medicare/non-Medicaid patients will end with program year 2027. This means that HHAs will have to begin reporting OASIS data on all patients admitted for care, regardless of payer, beginning July 1, 2025. HHAs may begin voluntarily reporting the data January 1, 2025. As finalized in the CY 2022 HH PPS Final Rule, HHAs will begin collecting new standardized patient assessment data elements and transfer of health information using the OASIS-E for Starts of Care/Resumptions of Care January 1, 2023. Failure to report this information may result in a 2% reduction in payments in CY 2025.
Value Based Purchasing (VBP) Program	CMS finalized a proposal to change the HHA baseline year from CY 2019 to CY 2022 for existing HHAs with a Medicare certification date prior to January 1, 2019, and from 2021 to 2022 for HHAs with a Medicare certification date prior to January 1, 2022, starting in the CY 2023 performance year. The Model baseline year was also moved from CY 2019 to CY 2022.
Other Updates	The rule includes a discussion of the comments received on the future collection of data regarding the use of telecommunications technology during a 30-day home health period of care on home health claims. Providers can begin reporting data voluntarily January 1, 2023, but beginning July 1, 2023, reporting will be mandatory. The new codes identify home health services furnished via real-time audio/visual communications, audio-only communications, and the gathering of data transmitted by the patient through remote patient monitoring technology.

Table 3. Themes from the CY 2023 Medicare Physician Fee Schedule Final Rule

Conversion Factor	Reduction: of ~1.97% In 2022, the conversion factor was $34.6062. For services delivered on/after January 1, 2023, CMS finalized the conversion factor of $33.0607. Congress did pass an end-of-year spending package, but it failed to fully restore the cuts. Instead, it provided a 2.5% increase for CY 2023, and included a 1.25% increase in CY 2024.
Relative Value Units (RVUs)	Each of the CPT® codes billed by physical therapists consists of "relative value units" (RVU) of work, practice, and malpractice. Periodically these values are revised and reweighted. CY 2023 is the 2nd year of a 4-year update to the Practice Expense RVUs.
Geographic Practice Cost Indices (GPCI)	The Social Security Act requires CMS to review and, if necessary, adjust the GPCIs at least every 3 years. CMS finalized its proposal to implement 50% of the adjustment in CY 2023, and the remaining 50% of the adjustment will come in CY 2024. Find your GPCI at: https://www.cms.gov/medicare/medicare-fee-for-service-payment/physicianfeesched
Telehealth	The omnibus spending bill signed into law on December 29, 2022, provided a two-year extension of telehealth services under Medicare, including those provided by PTs and PTAs. Rather than being tied to the end of the PHE, the provisions will continue through December 31, 2024.
Other Codes	Remote Therapeutic Monitoring (RTM): While the proposed rule included several changes to the RPM family of codes, CMS declined to finalize any of them after a surge of commenters urged them not to change them after only one year of implementation. Chronic Pain Management (CPM): CMS created a new series of codes to capture services delivered in the management and treatment of persons with Chronic Pain. Chronic pain was defined as persistent or recurrent pain lasting longer than 3 months. Other than the first face-to-face, in-person visit, any of the CPM services may be furnished via telehealth. A person does not have to have an established history of diagnosis of chronic pain in order to receive the services, i.e., the person may be diagnosed on the first visit the code(s) are billed. Physical therapists are not eligible to bill the CPM codes but may be involved in the management of patients.
Direct Supervision of PTAs	PTs working in Private Practice or in physician's offices are required to provide direct supervision (i.e., in the room) when PTAs are delivering services to Medicare beneficiaries. During the PHE, that requirement has been waived and PTs can provide that 'direct' supervision using audio-visual, 2-way interactive communication. APTA and its members advocated to CMS to make this waiver permanent, but CMS declined. CMS said it would continue to consider it, but at this time, the policy remains the same. The allowance to meet the direct supervision requirement through audio-visual, 2-way interactive communication will expire at the end of the calendar year in which the PHE ends.
Therapy Threshold	Combined PT and SLP threshold for 2023 will be $2,230.00, an increase of $80 over 2022. Occupational therapy will also have a 2023 threshold of $2,230.00. The Medical Review Threshold remains at $3,000 for PT and SLP and $3,000 for OT services.

Unlocking the Door to Support Aging Adults Living with Depression

by Evan O. Nelson, PT, DPT, PhD

Mental health disorders are an invisible disability because the functional limitations cannot be visually observed. Fourteen percent of adults 50-years of age or older had any type of mental illness in the past year and 5.4% had major depressive disorder.[1] Compared to younger adults, aging adults have a lower reported prevalence for all types of mental health conditions, but disproportionately high rates of under reporting; meaning the percentage of aging adult patients with a co-morbid mental health disorder is high, and frequently undiagnosed.[2] Physical therapists (PTs) and physical therapist assistants (PTAs) may observe depressive symptoms when clients receive physical therapy services for neuromusculoskeletal injuries, cardiorespiratory conditions, or post-operative rehabilitation. Therefore, PTs and PTAs need to be skilled in supporting the psychological needs of people with clinical depression who concurrently receive physical therapy services. PTs and PTAs can support someone's mental health by recognizing depression symptoms, routinely screening for depression, providing exercise and lifestyle interventions, and collaborating with other healthcare clinicians.

Depression diagnostic criteria

Major depressive disorder includes a combination of depressed mood, loss of interest or pleasure in most activities, low energy, sleep disruption, change in weight or appetite, poor concentration, thoughts of worthlessness or guilt, or recurrent suicidal thoughts for 2 consecutive weeks.[3] Diagnostic criteria stipulate depressive symptoms must be present for most of the day, nearly every day, and cause a clinically significant functional impairment. The diagnosis is made following a comprehensive psychological exam to rule out several conditions like minor depressive disorder, persistent depressive disorder, or other depression syndromes. The possibility the depressed psychological state is due to a medication, substance, or alternative condition must be considered. Therefore, the diagnosis should be made by a qualified healthcare clinician.

Depression screening

Screening for depressive disorders is good practice and within the scope of physical therapist practice. General screening and targeted screening are realistic clinical strategies. General screening involves using a validated instrument to screen all patients as part of the initial evaluation. General screening reduces the potential of missing someone with clinical depression but risks incorrectly classifying some people even though they do not actually have depression. Targeted screening involves administering a validated assessment instrument when the PT or PTA determines someone exhibits depressive symptoms. Targeted screening has a lower false positive

rate but may fail to identify people with depression if the clinician is unable to recognize depressive symptoms.

The PHQ-2 is a simple, 2-item measure that is easy to verbally administer or present to the patient in written form.[4] The brevity and administration ease of the PHQ-2 are well-suited for general screening. To reduce the risk of unnecessary referral, general screening guidelines recommend following a positive PHQ-2 with a specific instrument.[5,6] Depression screening instruments become more specific with detailed assessment of the symptom severity and resultant functional impact. The PHQ-9 and Geriatric Depression Scale (GDS) are frequently used in targeted screening approaches or as a second assessment in a general screening approach.[7, 8] The PHQ-9 is a 9-item patient-reported assessment of depressive symptom severity and functional impact that is commonly used to screen for depressive disorders.[7] The GDS is a 15-item, self-reported measure for older adults that consistently demonstrates the ability to discriminate more severe depressive symptoms.[9] Caution is advised for the GDS because the existing research was conducted using different cut-off values, in disparate clinical settings (e.g., home care), or in different cultural settings (e.g., outside the United States).[8-10] Clinical expertise should be used to interpret the generalizability of these results to active, community dwelling older adults in the United States. Unique considerations for the patient population and clinical setting should be carefully considered when implementing a systematic screening strategy.

Depression referral

The physical therapist should refer people with undiagnosed or ineffectively managed depression for further evaluation and care outside the scope of physical therapist practice. Referrals will commonly be made to primary care clinicians who are well-prepared to manage most cases of depression.[11] Psychologists or psychotherapy clinicians are also appropriate referral recipients who may provide multiple evidence-based interventions.[12] PTs are unlikely to refer directly to a psychiatrist because psychiatric care is typically reserved for treatment resistant depression. In rare instances, emergency department referral or law enforcement response is required for patients displaying active suicidal ideation who may harm themselves or others.

Depression treatment

Medication and psychotherapy

PTs and PTAs should be familiar with the common management strategies patients will receive concurrent with physical therapy care. Depression treatment is scaled according to symptom severity.[13] Medication and psychotherapy are commonly recognized, efficacious treatment strategies. Any prescribed pharmacologic therapy is selected according to individual patient factors but may require 4-8 weeks to achieve a clinically meaningful response.[14] Regardless of treatment approach, the treatment goal aims to produce a meaningful reduction in depressive symptoms for the individual patient context.[13] Remission is defined as the resolution of the depression syndrome.[13] Supporting the established management plan, reporting medication side effects, managing expectations, and answering participant questions are practical ways PTs and PTAs can positively contribute to the health care team for the benefit of the patient's overall health. While providing routine physical therapy care, the patient-provider dialogue creates opportunities to provide counsel and guidance within the individual knowledge base of the PT or PTA. Focused questioning is a practical method to assess the patient's understanding or adherence to the depression treatment plan while providing physical therapy care for a different condition.

Exercise

Exercise is an evidence-supported treatment for major depressive disorder.[15] Clinically significant reductions in depressive symptoms were observed when people with mild to moderate depression exercised at intensity levels matching public health exercise guidelines.[16,17] Studies indicate exercise has comparable effectiveness to medication or psychotherapy; the effectiveness of combining exercise with these other treatment strategies remains unclear.[18] Exercise is an extremely accessible non-pharmacologic treatment that may be prescribed while patients are waiting to begin psychotherapy sessions. PTs and PTAs are well prepared to provide individualized care and promote exercise adherence in community dwelling older adults, especially those who have unique co-morbidities, disabilities, or other barriers to exercise.

Key points

- Depression screening is within the scope of physical therapist practice.
- PTs are prepared to make referrals to clinicians who are qualified to diagnose depression.
- PTs and PTAs may support depression management plans that include interventions outside the scope of physical therapist practice.
- Exercise is an evidence-based treatment for depression that may be skillfully prescribed by PTs or administered by PTAs.

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Research, Education, and Practice . . .
Where it All Comes Together

Gerontological Society of America Annual Scientific Meeting 2022

by Timothy L. Kauffman PT, PhD, FAPTA, FGSAT

The Gerontological Society of America's (GSA) 5400 members held the first in person Annual Scientific Meeting in 3 years on Nov. 2-6, 2022. Over 4,000 attendees, including persons from 38 different countries, convened in Indianapolis. Presentations by at least 20 physical therapists were featured among the nearly 3,300 offerings from the fields of Higher Education, Behavioral and Social Sciences, Biological Sciences, Health Sciences, and Social Research, Policy, and Practice. It was not possible to attend them all.

The Health Sciences (HS) Section has 2 prestigious awards and Patricia Heyn, PhD, FGSA, FACRM, Center for Optimal Aging, Marymount University won the Excellence in Rehabilitation of Aging Persons Award. In her presentation, *Two Decades Evaluating Exercise Treatments for Alzheimer's Disease: The Anecdotes of an Evidenced-Based Path*, she shared her research and professional journey as well as the findings that exercise is beneficial for persons demonstrating cognitive decline, but that exercise prescription needs further study and definition. Dr. Heyn's responsibilities at Marymount involve coordination of rehabilitation science research including physical therapists. Also, she mentors PTs on research skills and clinical/practical research implementation. Additionally, she is developing a PhD program in aging and rehabilitation.

The Joseph T. Freeman Award, given to a prominent clinician engaged in research and practice, was won by Neil Resnick, MD, FGSA, University of Pittsburgh, UPMC. The title of his lecture was, *Into the Void: A Career in Incontinence . . . and Beyond.* His work has shown that urinary incontinence is not inevitable with age and that it is treatable. Factors outside the lower urinary tract such as medications, diseases, brain, and physical function should be considered when treating a person with incontinence. His work helped to develop the Medicare's Minimum Data Set for frail elderly.

The next GSA Annual Scientific Conference is scheduled for November 2023 in Tampa, FL. The call for abstracts will be open Feb. 1- March 9, 2023. Physical therapists are invited to submit their research. Like APTA Conferences, the GSA meetings are very enriching because of the inter-disciplinary and international opportunities for learning.

https://www.geron.org/membership/engage-with-gsa

Depression and Falls Risk: A Double-Edged Sword in Individuals at Risk for Falls

by Heidi Moyer, PT, DPT

While traditionally thought to be a very common condition diagnosed in older adults, depression is not as prevalent in the older adult population as it is in younger demographics. Depression is present, on average, in 18.4% of older adults compared to 21% in young (aged 18-29) adults.[1] In community dwelling older adults, the rate is approximately 3%2, with a prevalence of 13.5% in the home health setting,[3] and 10-17% in hospitalized older adults.[4] Rates tend to be higher in individuals who report medical cost as a barrier to seeking health services (17.8%) compared to those who do not list this as a barrier (5.5%).[5] Depression is not only an impedance to the patient's quality of life, but also can place an older adult at increased risk of falls, changing the trajectory of their health outcomes drastically. As such, physical therapy professionals, who encounter older adults in all these settings, play a unique role in screening, referring, monitoring, and providing skilled intervention for those experiencing depression or depressive symtpoms.

Signs and symptoms of depression in older adults: Creating the balance problem

Depression impacts not only the mental and emotional health of the individual, but also has vast physical implications. Physical manifestations associated with the presence of depression, specifically in older adults, are: psychomotor slowing in attention, executive function, and processing speed; the ability to dual task; and gait quality changes including decreased gait speed, longer double stance time, and increased gait variability.[6] Additionally, older adults are more likely to display the cognitive and somatic manifestations over the emotional components including unexplained aches or pains, memory problems, weight loss, slowed movement, lack of personal hygiene, and fatigue.[7] All of these may be presenting factors which necessitated the referral to therapy services in the first place as the healthcare team is working to rule out other pathologies.

Older adults are often not properly diagnosed with depression due to the variety and complexity of patterns of symptom presentation. Many older people are not willing to report mental health difficulties to their physician. One study found that 71% of older adults with mood and anxiety disorders did not utilize mental health services citing reasons such as stigmatization, not being comfortable in discussing private health matters with a clinician, not having health insurance, and having only mild symptoms.[8] People over age 55 will often report that being depressed is a normal part of the aging process and are therefore less likely to report symptoms.9 Another reason for low utilization of services is many physicians also incorrectly identify depressive symptoms in older adults as "normal aging" with older adults being properly screened for depression only 39% of the time during primary care visits.[10] Factors that impact a physician's ability to successfully identify clinical depression in older adults include organizational factors, such as time spent with each patient, physician knowledge, and perceived importance of screening.[10] This only further exemplifies the importance of the physical therapy professional's role on the healthcare team. Traditionally, organizational barriers are not as time limiting for physical therapy visits as for many other allied professionals. Therapists typically allot more time with clients than nearly all other disciplines; we grow to have a unique social connection with our patients which makes them more likely to open up about these conditions.

Antidepressants and fall risk

According to the 2019 American Geriatric Society Beers Criteria Update, antidepressants of all classes are to be avoided for use in prescription in older adults due to the high risk of high anticholinergic, sedating, and orthostatic hypotension effects.[11] Serotonin and norepinephrine reuptake inhibitors (SNRIs), tricyclic antidepressants (TCAs), and selective-serotonin reuptake inhibitors (SSRIs) were all recently recommended to be avoided unless safer alternatives are not successful due to the high risk for falls and injurious falls.[11] One study published in 2016 looked at fall risk associated with antidepressant use amongst older adults.[12] They found a 48% greater likelihood of falls in use of any antidepressants, 62% increased likelihood for individuals taking SSRIs, 47% increased likelihood for short duration use, and 59% increased likelihood for those taking a moderate dose.[12] Additionally, researchers found that individuals who had a previous history of falls, including injurious falls, who were prescribed antidepressants were 83% more likely to experience another fall while on the medication.[12]

Despite this seemingly devastating risk associated with antidepressant use, the exact relationship between the medication and fall risk is poorly understood. In a

more recent study published in 2021, researchers found that antidepressant use only accounts for 19% of the risk associated with antidepressants and falls and 18% of the risk of fall injuries.[13] The study authors proposed that depression as a pathology in itself may be responsible for the majority of the actual risk associated with antidepressant use, as depression is a required diagnosis for the use of this medication. Currently, there is no evidence as to which antidepressant medication incurs the least amount of fall risk for older adults.

Depression as a risk factor

Older individuals develop an increasing fall risk as a result of the somatic symptoms associated with depression. Those diagnosed with depression have been shown to demonstrate impaired executive function and dual tasking,[6,14] lower activity levels,[15,16] slower gait speed,[17] as well as impaired sleep/nutritional status.[6,18] Fear of falling is also common in older adults with depression,[6,19] with reports of depression up to 26.1% in older adults with severe fear of falling.[20] Physiologic and functional changes make it easier for a fall to result as fear of falling, decreased physical activity, and decreased physical ability all lead to increased risk of falls within the Fear of Falling Cycle.

Depression and the role of the physical therapy professional

While physical therapy professionals do not prescribe medication to address depression, we do have a role in screening, identifying risk factors, referring patients/clients to specialists, and prescribing exercise to mitigate the physical phenotype of depressive symptoms.

The Geriatric Depression Scale (GDS) is a tool created specifically with the older adult in mind. There are 2 versions to choose from, either the full 30-item version or the shorter 15-item version. The GDS is one of the most sensitive tools available for screening for depression in older people at >5 points with 84% sensitivity and >12 points with 88% sensitivity respectively.[21] Other tools validated for use in the older adult population include the Patient Health Questionnaire-9 (PHQ-9),[22,23] PHQ-2,[24,25] Cornell Scale of Depression in Dementia (CSDD),[26,27] and Hospital Anxiety and Depression Scale (HADS).[28,29] A less direct way to screen for depression is to perform a medication reconciliation. Many older adults will not report having depression as mood improves, but are still consistently taking an antidepressant, which can provide insight to both their medical condition as well as health literacy.

It is important to approach this conversation carefully and thoughtfully as many do not feel that medical intervention for depression, even when severe, is necessary.[30] Sometimes avoiding the word "depression" at all costs allows the clinician to have a more meaningful conversation with their patients. Asking questions about symptoms such as fatigue, appetite, mood, and physical functioning are a safe and easy way to begin the conversation. Once a baseline is established, more sensitive questions about stressors and any major life changes can be introduced. As you gather information and ask clarifying questions, you can often get all the information that you need for a PHQ-9 or a GDS-15 without the social stigma of a direct depression screen. From there, the presence and effectiveness of coping mechanisms as well as the potential need for a referral can be discussed. Anecdotally, in my clinical experience, when alerting clients that I am concerned for them, I also ask their permission before I pass any information along to their primary care physician, explain the process, and explain that they are allowed to consent or deny any treatment for how they are feeling. The number one question I have received form older adults is "will they make me take medications" to which I respond, "not if you don't want to." This allows us to act as a sort of "healthcare ambassador" to set their expectations for and guide them through the process that should take place with the report of these findings. This interaction, of course, is different in the event that I am concerned for safety due to self-harming thoughts. Overall, however, this approach allows the person to be in the driver's seat for managing their needs; the physical therapy professional serves as more of a resource than an authoritarian figure. Depression screening can also be normalized by educating patients that every person is asked these questions to ensure a thorough evaluation.

Once an older adult screens positive for depression, a timely referral is important to their primary health or other level provider. Explaining the screening results, the impact that the present depressive symptoms are having on this person's quality of life, and the threat that this condition could result in their emotional, mental, and physical health are all important pieces of information to convey to the healthcare professional information is being referred to. The next step in this process is following up with the individual whom the concerns were passed along to ensure that the client is receiving the required level of care to address and monitor this issue effectively.

Current literature suggests that exercise and cognitive-behavioral therapy should be the first line of treatment for mild-depression in individuals who have experienced a fall; medications should only be considered if the episode is classified as moderate to severe in those with a known risk for falls.[6] It is important to note that these medications should be used with great caution, starting at a low dose and slowly titrating the dose upwards to avoid side-effects such as orthostatic hypotension and hyponatremia.[6] Despite this warning, this is not always the practice with older adults; medications typically become the first line of defense rather than counseling in lifestyle modifications. Therefore, the role of the physical therapy professional becomes even more crucial to be vigilant for adverse reactions or side effects to medications and quickly limit any adverse events by report to the prescribing physician.

Monitoring for depressive symptoms is important throughout the plan of care to make sure that any medical intervention is successful; the lack of successful intervention could greatly impact the efficacy of physical therapy interventions in terms of impacting motivation and participation. This is also an opportunity to effectively ensure that the fear of falling cycle is interrupted prior to resulting in the decrease of activity associated with typical depression presentations.

Several studies have recently been published that detail the effectiveness of exercise within people who have depression. Exercise is effective to improve mood and promote the effectiveness of medications in mild-moderate cases of depression.[32] One meta-analysis found that there were no statistically significant differences between aerobic, resistance, or mind-body exercises when specifically addressing depression symptoms, indicating that the type of exercise prescribed, doesn't actually matter so long as physical activity levels increase from baseline.[31] These researchers concluded that allowing older adults to select their preferred type of exercise yields better compliance and enjoyment with the chosen activity. The current minimal dose response for exercise impacting depressive mood is minimally 20 minutes per week of any type of physical activity,[33] with a greater risk reduction noted for higher intensity and volume of exercise.[33,34,35] Physical activity also provides a protective effect against return of depressive symptoms. This is further reason for physical therapists to encourage healthy lifestyle changes,[36,37] can greatly reduce falls risk in community dwelling older adults,[38] and with similar effects seen in institutionalized individuals with mild cognitive impairments.[39]

Physical therapy professionals are uniquely positioned within the healthcare system to assist in screening, referring, and managing the symptoms of depression in older adults, particularly in the role that it has on balance and falls. By providing early identification of impairments and limitations within the patient's capabilities, we can improve access to care and services as well as promote the effectiveness of both physical therapy and medical interventions.

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Weight Stigma and Discrimination in Rehabilitation: How You Can Create a Clinic Culture of Inclusion

by Colleen McMilin, RD, PhD, MPH and Harold Merriman, PT, PhD, CLT

Within the United States, 74% of people are living in larger bodies, described by BMI measurements as overweight (25 – 29.9) and obesity (≥30).[1] All individuals need to be able to safely access the same healthcare resources, including rehabilitative care provided by the physical therapist team (PT/PTA). Access includes a physical environment that is designed to support larger bodies, a clinic culture that support the patient's social and emotional wellbeing, and a workforce that is accepting or aware of their unconscious biases that include anti-fat attitudes and stereotypical perceptions.

Weight stigma involves negatively stereotyping people perceived to be overweight with characteristics such as laziness, sloppiness, ill-health, and lower intelligence.[2] Stigma and discrimination are common experiences reported by individuals living in larger bodies. National estimates indicate that weight discrimination is among the most frequent forms of discrimination reported by adults and is comparable to rates of racial discrimination among women.[3] This form of discrimination can lead to adverse health consequences such as binge eating, increased food consumption, avoidance of physical activity, physiological stress, weight gain, impaired weight loss outcomes, and avoidance of healthcare appointments.[4,5] Awareness and internalization of weight stigma have been found to negatively influence individuals' willingness to participate in physical activity, their perceived competence in physical activity, their motivation to exercise, and self-efficacy leading to a decrease in reported levels of physical activity.[6-8]

There is a range of barriers to the treatment of patients who are living in larger bodies, including lack of clinician training in and knowledge about managing obesity, limited access to bariatric equipment, lack of time, poor patient motivation, and limited availability of relevant community resources.[9,10] With the average PT seeing upwards of 30 patients per week, there is an opportunity to provide support in a way that will decrease these adverse consequences, increase reported levels of physical activity, and improve a patient's overall health and wellbeing. In this article we provide evidence to support the need for an inclusive PT practice as well as short- and long-term strategies that you can implement at the individual and clinic level.

Impact of the physical environment

An inclusive PT clinic is made up of both access to appropriate equipment as well as a PT or PTA who feels confident in their ability to support a patient population living in larger bodies. PTs commonly work with patients through bed mobility, transfers, ambulation, and exercise prescription.[11] A lack of bariatric equipment or staff assistance is a barrier to treatment and not only impacts the patient's ability to participate in PT but also impacts the therapist's ability to provide treatment as they are more likely to be reluctant to treat patients for fear of personal injury.[9-12] The physical space can also include the presence of mirrors (and their prominence), use of images privileging thin bodies (in advertising, websites, health promotion materials, and charts displayed in clinics), furniture that was poorly designed for a range of body sizes, visible displays of exercise equipment, and the lack of privacy in open treatment area layouts can all have negative impacts on patients.[13] Rinne et al.[11] reported only about one-third of PTs agreed that their place of work was well prepared to facilitate the PT treatment of patients who are super morbidly obese (SMO), defined as a BMI >50. Less than a quarter of respondents agreed that practice guidelines were available to them concerning the treatment of patients who are SMO.

Because physical activity is a major component of a physical therapy practice, PTs have identified that when managing obesity and related comorbid illnesses, exercise and education remain as an important role of the profession; however, it is unclear how this translates into practice.[9, 14] Physical therapy can lead to an improvement in health outcomes within this population. However, a lack of clinician knowledge and training in managing obesity was a main barrier to the treatment of patients living in larger bodies.[9,12,15] Rinne et al.[11] reported that PTs had obtained the greatest knowledge regarding the treatment of patients who are SMO from non-structured sources, including clinical experience, self-directed learning, and consultation with peers. Only two-thirds of PTs reported feeling confident in their ability to mobilize patients, a standard component of treatment which is concerning. This lack of confidence may result from a lack of clinical experience or exposure to this specific patient population.

The PT should ensure that the physical environment is welcoming and does not cause additional weight stigma. For example, chairs and examination tables should be

comfortable, appropriately sized and designed to support individuals with obesity. Also, the PT should provide as best as possible at the onset of the patient interaction the correct size of blood pressure cuffs, gowns, gait belts and assistive devices to put the patient at ease. If other specialized equipment is necessary, then it should be readily available to all therapy staff, since the lack of bariatric equipment can be a barrier to treatment by the PT.[11,16]

Client/Patient social emotional wellbeing

With the body as the focus of PT, body weight is likely to be involved in PT interactions regardless of whether weight management is a focus.[13] Messages encouraging integration of weight management into PT have become commonplace as PTs focus on weight to improve patient outcomes by, for example, reducing the load on joints, or improving chronic pain.[17,18] However, perceptions of weight stigma can result in poorer health outcomes and therefore it is important for the PT to treat weight as a sensitive topic.[19]

The patient's perception of physical therapy could lead to avoidance of medical care. Setchell et al.[13] reported that individuals saw PT as like, or part of, both the health and sports/fitness industries and therefore it was commonly perceived as having similar attitudes towards weight (i.e., often negative). Many arrive at PT with the expectation that weight will be mentioned and the preconception that they would be judged negatively for living in a larger body. Individuals who consider themselves to be overweight frequently feel that they would be (or have been) judged as not thin/active/good enough in a PT environment.[13] Additionally, the idea of being watched while moving/exercising and having 'hands-on' treatment can lead to feelings of distress prior to, and while attending, therapy sessions.

Collaborative communication by PTs can put patients at ease through two-way conversations that involve both the therapist and the patient's knowledge and opinions.[13] Physical therapists' communication styles in interactions not associated with weight influence how well communications about weight were perceived, thus providing further evidence for building rapport early on with a patient. When discussing weight, it is seen as more appropriate to conduct these types of conversations when the patient is clothed.[13]

When the PT takes a more person-centered approach in which the therapist employs a non-authoritative approach, patients are more comfortable as they feel as though they are considered individuals with the agency to take the lead in sessions and discover their own solutions.[13] General interactions between the PT and the patient are seen as more positive when the therapist expresses empathy and uses a collaborative rather than an educative communication approach.[13] However, patients reported that in their sessions the PT frequently shared educational knowledge by 'telling' the patient information. Negative attitudes towards weight are problematic, whether due to physical therapists' attitudes or patient perceptions, weight stigma erodes trust in the health care profession and may result in a patient seeking out a new provider.[20,21]

Anti-fat attitudes/stereotypical perceptions

Weight stigma has been observed across healthcare professions including doctors,[22] nurses,[23] exercise scientists,[24] dieticians,[25]and PTs.[26] Although Sack et al.[10] reported that PTs had neutral attitudes to people who have obesity, 50% of PTs also believed people who have obesity are weak willed, non-compliant, and unattractive. This may be due in part to the lack knowledge about the complex and multifactorial causes of obesity; the condition is frequently depicted as a simplistic energy imbalances with causes assigned to individual responsibility which results in mixed attitudes toward persons who live in larger bodies.[14,27,28] This belief is still held by many although there is growing evidence that several factors beyond an individual's control can contribute to the development of obesity, such as stress, gut microbiota, overnutrition in utero, and interactions between genes and environment.[29,30]

Since PTs are working with an ever-increasing percentage of individuals who are living in larger bodies, it is critically important that PTs are better equipped to work with all types of bodies. More education is one area of great importance, but the way that PTs acquire such education is often non-structured. Rinne et al.[11] reported that PTs are open to learning about this topic in a more structured way (entry-level PT degree, work training, or continuing education), though it is in the non-structured areas including clinical experience, self-directed learning, and consultation with peers that typically makes inpatient PTs more confident. This same study also found that nearly half of PTs where reluctant to treat individuals with a BMI of > 50 for fear of personal injury during mobilization in an acute care hospital or in-patient rehabilitation settings.[11] Clearly, it is crucial that the PTs have the proper equipment to create a safe environment for both the PT and the patient.

Summary

Unfortunately, even in health care there remains a widespread stigma against people living in larger bodies. PTs should avoid the simplistic mindset that obesity can often be volitionally controlled by diet and exercise, but instead should be open-minded to consider the potential multi-factorial nature of many cases of obesity. PTs can advocate for an inclusive clinical setting that will have the proper supplies and equipment as well as physical layout and furniture. It is also critical that PTs communicate in a collaborative versus an educational way using a person-centered approach. Hopefully as the importance

of weight stigma is better understood, PTs will be able to apply information from more structured sources (e.g., work training and continuing education) rather than relying on non-structured sources of education (e.g., personal clinical experience and peer consultation). Physical therapy professionals can play a central role in creating a culture of inclusion by reducing weight stigma and discrimination both in the clinic as well as society at large that will help us provide optimal services to people living in larger bodies.

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Does Sleep Quality Impact Physical Performance as Measured by Strength in Older Adults?

by Kenneth Miller, PT, DPT, Joshua Elliott, PT, DPT, and Samantha Ewing, PT, DPT

Sleep is the body's way of recovering and resetting overnight. Good sleep can lead to many health benefits like a possible increase in weight loss and more energy throughout the day.[1] Poor sleep quality has been linked to an increase in obesity, heart disease, diabetes, depression, and other detrimental prognoses.[2] Lack of sleep can not only lead to health-related issues, but it can play a part in someone's overall mood, their irritability, and their judgement. Unfortunately, older adults are significantly impacted by poor sleep quality at a greater rate than other populations.[3] Aging is a normal part of life, and currently, the average life expectancy for men and women is longer than it has ever been. According to the United Nations, the estimated global life expectancy is 72.6 years old, which is higher than the average life expectancy of any country in the 1950's.[4] Thus, as the population in the United States ages, and the baby boomer population reaches older adulthood, it is necessary to examine how the quality of their sleep can affect their daily lives. Sleep quality has been shown to decrease as someone ages and it is estimated that approximately 50% of community-living older adults suffer from some type of sleep disorder.[5] There are 3,316 board certified geriatric clinical specialists as of June 2020 in the United States and beyond that thousands more physical therapists working with older adults in a plethora of settings in community practice).[6] It is clear that physical therapists play an important role in the overall health for this population and are essential for maintaining or regaining their overall strength and independence.[7] With sleep impacting this population significantly, providing sleep education and screening for poor sleep can further impact positive outcomes of therapy.

When reviewing the available literature, we found that there is limited information on how sleep affects the physical performance of older adults who are age 60 or older. The amount of information is further limited by a lack of research using objective measurements of strength and sleep. We decided that an objective measure of physical performance was essential for this review to be relevant to evidence based physical therapy practice. Grip strength has been shown to be a good objective measure of strength with standardized protocol for reliable measurements and normative data available for the older adult population categorized by age ranges and sex.[8] Grip strength is an easy and quick tool that takes measurements using a hand-held dynamometer. Although grip strength is not the only well researched objective outcome tool for strength, it is an easy to administer test, is easy to explain, and is commonly available in physical therapy settings. Poor grip strength has also been shown to be a predictor of mortality and morbidity in older adults.[9, 10] The studies used for this review included use of both subjective and objective measures of sleep quality and duration, with self-reported measure Pittsburgh Sleep Quality Index (PSQI) being the most used. The PSQI has several components which include quality, latency, duration, sleep habits, sleep disturbances, use of

sleep medications, and daytime dysfunction. It is a validated measure of sleep quality with a sensitivity of 89.6% and a specificity of 86.5%.[5] Actigraphy was the objective measure of sleep which identifies total sleep duration, wake after sleep onset, and percentages spent awake or asleep during the night.[11] The bidirectional relationship between sleep and strength needs more research; therefore the objective of this review is not only to look at the available current literature and relate it to physical therapy practice, but to identify what needs to be further researched in the future. We hope to apply the information from the reviewed articles to guide clinicians working with older people.

Methods

Search strategy

Two Doctor of Physical Therapy Students from the University of North Texas Health Science Center in Fort Worth, Texas performed searches of the current literature on Scopus and PubMed based on 8 different search terms related to sleep quality, older adults, and physical performance (refer to Figure A.) The original searches were looking at specific sleep disorders, such as sleep apnea or insomnia, but there is currently not enough research to support a literature review on specific disorders. Thus, for the purposes of this literature review, the search needed to be expanded to include nonspecific poor sleep, instead of specific sleep disorders. A title review was conducted to determine if the results would fit our search criteria. After the title review, articles abstracts were reviewed to further investigate the articles and their eligibility for inclusion.

Selection and inclusion-exclusion criteria

Article titles from the initial searches were first screened independently to identify if they were related to our topic of sleep and performance. Titles that appeared irrelevant were excluded. Next, an abstract review was performed to identify correct dependent and independent variables. Articles were excluded if the variables studied were reversed to where they looked at performance impacting sleep, opposed to sleep impacting performance. The articles with correct variables were further reviewed with the following inclusion and exclusion criteria before being included in this literature review:

Inclusion criteria included articles whose subjects were 60 years of age or older, use of a reliable subjective or objective measurement of sleep quality such as the PSQI (Pittsburgh Sleep Quality Index) or Actigraphy, and objective measures of strength such as grip strength with a hand-held dynamometer. Exclusion criteria included studies conducted before 2007, the use of subjective measures of strength or performance, and any poor quality of sleep measures such as use of an Accelerometer.

Results

The searches yielded 10 articles that had pertinent information to our question and fit into our search criteria. The articles include cross-sectional studies, a systematic review, observational studies, and cohort studies. The method of measuring sleep quality and duration varied between the articles. Six of the ten articles reviewed used only subjective measurements for the sleep quality and duration. Four used the PSQI.[12, 13, 14, 15] Two used other non-standardized self-reported measures of sleep quality or duration.[16, 17] Four articles used objective measures of sleep. Two of those articles used Actigraphy only.[18, 19] The last 2 articles used a combination of both Actigraphy and PSQI for a more comprehensive look at sleep quality.[1, 20] When comparing grip strength of the participants to their measures of sleep quality and duration mentioned above, all 10 articles reviewed concluded that either sleep quality or duration had an impact on strength. Three articles concentrated on results of sleep duration.[1, 16, 18] The others focused on poor sleep quality with disrupted sleep being the most identified component of inadequate quality.[12, 13, 14, 15, 17, 19, 20] Gender differences were identified in 2 of the articles but their findings conflicted.[13, 17]

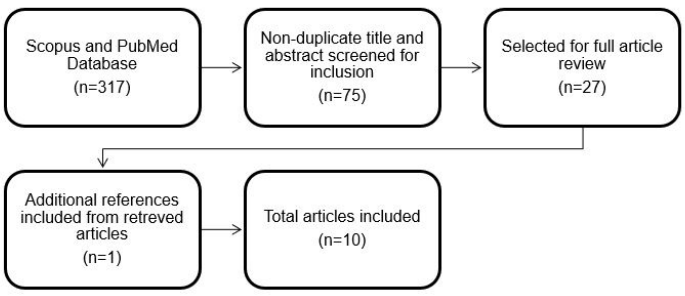
Discussion

Sleep is a recovery tool for the body. Throughout the research reviewed here, poor sleep represents a decrease in strength; some of the same studies seem to support the idea that too much sleep can adversely affect those same measures of strength. Objectively measured poor sleep was found to be associated with overall worse physical function in terms of weakness. The underlying association between the two was not determined[1, 18, 19, 20] When using only an actigraphy, Goldman et al. found that poor sleep quality, specifically the number of wake times during the night, significantly impacted strength. Elias et al. found that prolonged sleep duration had the biggest

Figure A

Search Terms	
Sleep duration	Sleep Quality
Actigraphy	Sleep
Older Adults	Pittsburgh Sleep Quality Index
Hand Grip	Hand Strength
Grip Strength	Strength

Figure B



impact on grip strength.[18, 19] The weakness associated with the long duration identified is most likely due to the inherent inactivity that comes along with prolonged periods of sleep indulging long nocturnal sleep and more daytime sleep.[18] Teas et al. found similar results using the PSQI and actigraphy, reporting that long durations of nighttime sleep (greater than 8 hours) led to the greatest weakness than poor quality.[1] A systematic review that used both subjective and objective measures of sleep quality and duration further concluded the strong relationship between both sleep and grip strength.[20] Many of the articles found only looked at subjective measures of sleep quality using the PSQI or other self-reported measures but still came to the same conclusions.[12, 13, 14, 15, 17]

Of the articles that identified sleep duration, Wang et al. exclusively looked at duration based on a self-reported measure to be the determining factor of poor strength in their longitudinal study without consideration of quality. But their results identified the impact of both short and long duration of sleep.[16] Participants with intermediate sleep, as defined as around 7 hours of sleep, were determined to have the best strength outcomes.[16] To look at duration and quality, Teas et al. used actigraphy and PSQI and Elias et al. used only actigraphy to look at both duration and quality. Both articles identified that long nocturnal (>8) sleep predicted low strength.[1, 18] Elias et al. looked at an additional element that led to longer total sleep time and found that excessive sleep during the day also greatly impacted handgrip.[18] The findings might be due to longer duration at night or additional time spent sleeping throughout the day means there is less time these long-sleepers are active and moving. The inactivity of these participants likely explains the relation.

Conflicting results about potential gender differences could be attributed to the different subjective tools used to measure sleep quality. Denison et al. used the PSQI to measure sleep quality and found that the relationship between weak grip strength and poor sleep quality impacted women but not men in their study.[13] The Zhang et al. article found opposing results where sleep quality was only impacting the grip strength of men.[17] That contradiction in results may be related to the self-reported questionnaire that the researchers used in their study to measure sleep quality. It consisted of 3 questions about their sleep quality in the past few months related to the general degree of difficulty falling asleep, frequency of disturbed sleep, and if they felt tired or worn out upon waking. These questions were very general and did not include details about causes of poor quality or any information on duration. The 3 questions asked cannot compare to the detailed subjective information that is collected using the PSQI encompassing 7 potential factors that can impact sleep quality. One study only included females in their study but found similar results to the other articles regarding sleep quality and strength even though the population studied was limited.[19]

Within this review there are multiple limitations to the research that was conducted. First, there was a lack of consistent high quality objective measures of sleep used in the studies. Although the Pittsburgh Sleep Quality Index (PSQI) has been reviewed and found to be a reliable tool to assess subjective sleep quality, it seems to be the only one of its kind currently used in the literature.[22] Less standardized objective measures of sleep such as self-reported surveys and questionnaires are also commonly used in replacement of or combined with the PSQI. No articles found used Polysomnography (PSG) in their studies, which is the gold standard for comprehensive measures of sleep.[11] A limitation of Actigraphy is that it does not accurately measure sleep-latency onset, which is the time it takes to enter REM sleep, which can impact sleep quality.[11] Another limitation to our review and the subsequent articles stems from the lack of comparison to the available normative data. Most of the articles failed to make a clear connection between standardized norms and the data they collected in their studies and just compared within the group. The Golman et al. article had limited application to the general population because it excluded men in the study.[19]

When reviewing the data, no articles were found that attempted to determine the underlying cause between sleep and strength. The articles simply noted that a relationship exists, and that sleep plays an impact in some way on strength. The causes can only be hypothesized at this time, as mentioned in the Pana et al. and Zhang et al. articles.[17, 20] None of the articles included in this review looked at sleep education as a potential intervention to help improve strength; they only looked at sleep duration or quality. Gender differences need to be further studied due to conflicting results. A possibility for these vastly different results could be attributed to their different subjective measures of sleep quality. Further investigation is needed using objective measures of sleep to establish how the strength of men and women are impacted by poor sleep. Lastly, bias is always a concern in any published research, and this review is no exception. The use of the PRISMA Tool would have helped to reduce potential bias in this review.[22]

Due to the multiple limitations to this study more research needs to be conducted but based on the limited quality literature we found that better sleep quality and a more regimented sleep duration play a significant impact on strength in the older adult population.

Conclusion

This review aimed to identify the current available literature on sleep quality and duration with objective measures of strength to determine whether sleep quality played an important part in physical performance in the older adult population. Our results show that sleep quality and regimented sleep duration is associated with an improvement in strength and physical performance, as

measured using grip strength, in the older adult population. Physical Therapists have a unique opportunity to educate patients on the impact sleep can have on our daily lives, and it is within reason to believe that it plays a role in our physical performance and strength. While the research that was found is a step in the right direction, there is currently not enough research to definitively say that sleep alters strength in an objectively measurable way. More research is needed to further investigate the relationship that these 2 variables have on each other.

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Do Motivational Interviews Really Matter?

by Bethany Epperson, PT, DPT and **Olaide Oluwole-Sangoseni, PT, DPT, PhD, MSc, FNAP**

Older adults continue to be negatively impacted by COVID-19. [1,2] In the earlier phase of the pandemic, older adults, particularly those who were indigenous, black, or Latinx, were at a higher risk of infection, hospitalization, death, and other adverse outcomes compared to other groups.[1-5] As the multi-year pandemic continues, pre-existing health disparities became more striking as the impact of the individual's psychosocial determinants of health, i.e., depression, socioeconomic status, and social support, have led to negative outcomes.[1-9] Using the International Classification of Functioning, Disability, and Health (ICF) model, Transtheoretical Model of Change (TMM), and Motivational Interviewing (MI) to address patients' personal and environmental factors are imperative for patients' successful outcomes. With the recent pandemic, this is more evident.[6-14] Physical therapists (PTs) and physical therapist assistants (PTAs) collaborate with patients to identify and address their individual psychosocial factors during evaluation and treatment sessions.[6-14] The patient should remain the driver of their plan of care.[15] While readers should be following principle #1 in the APTA Geriatrics Guiding Principles for Best Practices in Physical Therapy, "Utilizing person center care to elicit and prioritize the individual's preferences, values, and goals to drive the plan of care," TTM and MI help to ensure this.[15] This article explains the TTM and how to implement MI during patient care encounters to promote engagement and shared decision-making using case studies from different settings.

The ICF is a framework for classifying a client's ability to function and their level of disability related to health-related domains. The main components of the ICF model identify the relationship and impact of internal and external factors on the person's health status. These components include body functions and structures, activities and participation, and personal and environmental factors.[14,16-18] For this article, we will focus on the environmental and personal factors of the ICF model. Environmental factors include the physical, social, and attitudinal environment in which people live and conduct their lives. Environmental factors can be barriers or facilitators to function. Personal factors are the specific background of a person's life; they consist of features that are not part of a health condition or health state.[14,15,17] Some examples of personal factors include gender, race, age, fitness, lifestyle, coping skills, social background, education, profession, past and current life events, and psychological traits.[14,15,17]

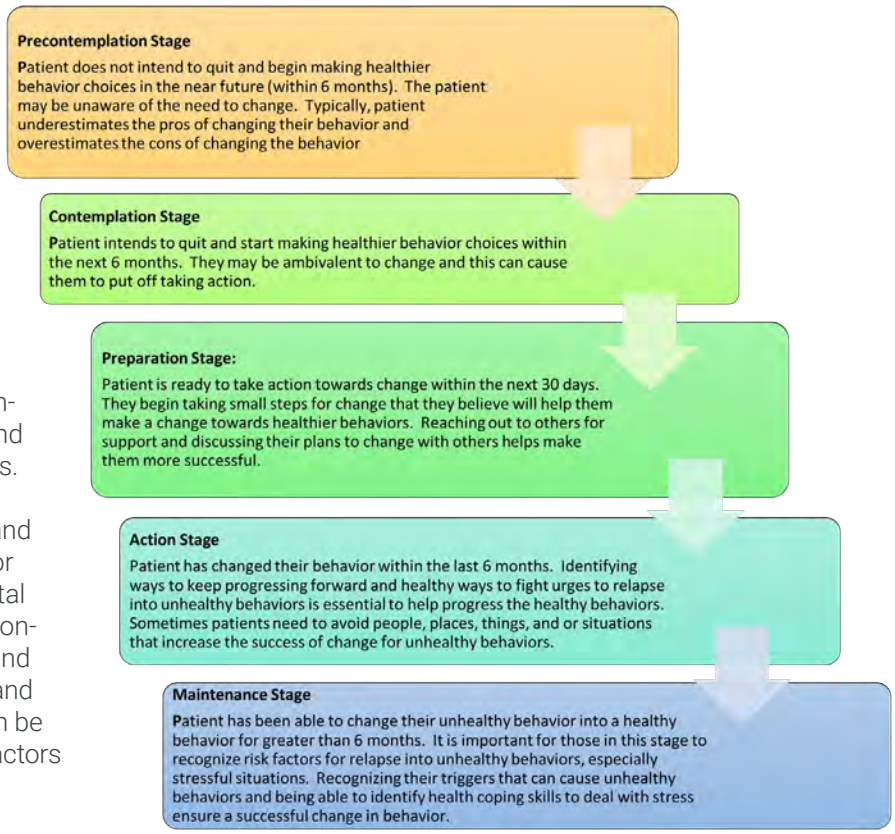
Transtheoretical Model of Change (TTM)

Successful outcomes for health and physical therapy goals are essential; psychosocial factors for each person can significantly impact the following:

- perception of their care
- readiness to change
- ability to implement changes.

Understanding the patient's stage regarding the readiness to change can assist PTs and PTAs (therapists) in successfully empowering people and assisting them to meet their goals. The TTM is an integrative, biopsychosocial model utilized to address the process of intentional behavior change. There are 5 stages in

Figure 1. Description of the 5 Stages of Change for the Transtheoretical Model.



the TTM of change: precontemplation, contemplation, preparation, action, and maintenance.[19-24] Figure 1 illustrates the different stages of TTM.[19-24] Researchers have found that movement in these 5 stages occurs in a cyclical manner.[23] To reach the maintenance phase, it can take many cycles with periods of relapse occurring to previous stages, i.e., moving from action back to contemplation.[23-24] Knowing the 5 stages of TTM and recognizing which stage the person is in allows therapists to consider changes in communication and treatment approaches to collaborate with patients to successfully achieve their goals.[23-24] Using specific processes of change that pertain to each TTM stage allows therapists to help facilitate movement toward action and maintenance.[23-24]

Motivational Interviewing (MI)

After utilizing the TTM to gauge readiness for change, therapists can begin to use MI and active listening to further engage with and empower shared decision-making to create meaningful, individualized goals. Multiple authors have previously discussed the concept of MI to help therapists adapt their practice to this patient-centered care model.[9,17,22,25-26] MI is an evidence-based, person-centered communication tool used to effectively encourage healthy behaviors, support change in behaviors, and promote improved quality of life.[9,27] MI can foster rapport and connection between the therapist and patient. It can improve communication and dialogue, allowing each side to voice their views, discuss, and agree on a POC.[9,27] MI can enhance adherence to the POC, promote successful lifestyle changes, and address many problems with chronic conditions.[27] With MI, the person is encouraged to feel more part of the decision-making process and, thus, make more lasting changes in their health.[9,226-27] There are 4 main techniques utilized for MI, represented by the acronym OARS. Use Open-ended questions, Affirm the patient's viewpoint, Reflectively listen to the person's point of view, and Summarize their statements.[26-27] Overall, MI is a technique for the therapists' toolbox that will help promote improved adherence to the POC and improved outcomes.

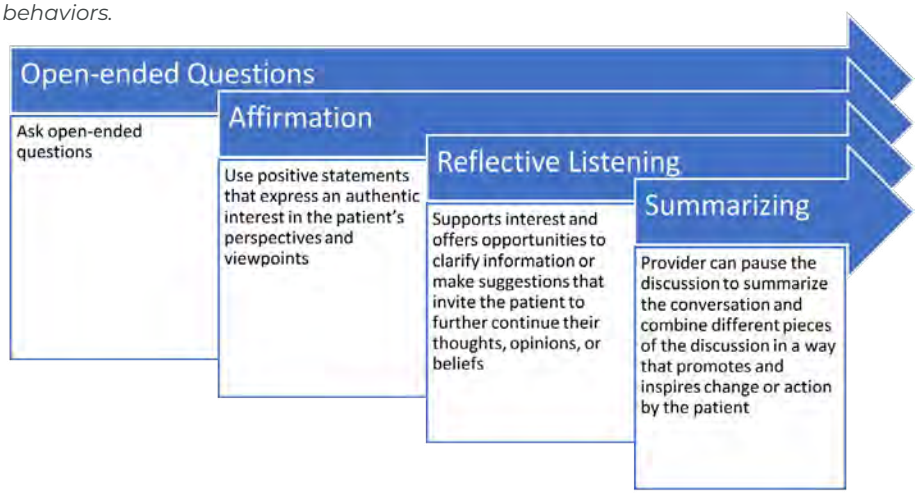
MI can help therapists better understand the barriers that the person faces to meet the desired outcomes of the rehabilitation POC.[26-36] Often depression, lack of support or resources, poor health literacy, and resistance to change can be incorrectly perceived as the person's decreased motivation, noncompliance, ambivalence, or non-adherence to the POC. Addressing the personal perspective and perceived barrier causing this fear or ambivalence to change allows the therapist and patient to determine what steps need to occur for the change to be successful.[9] When there is resistance to a therapist's recommendations, it's essential to convey an understanding of the person's point of view and their perceived barriers.[26] Is the patient noncompliant with their home exercise plan for his low back pain, or did the therapist not fully engage the person to help them understand the purpose or goal of the exercises for him to begin to adapt and change his lifestyle? Has the person with diabetes continued to buy sugary and fast food because she is depressed and is not able to change her behaviors, she does not fully understand the impact of uncontrolled blood sugars, or can she financially not afford fresh vegetables and fruit because she cannot work due to her wound? Understanding and addressing the individual psychosocial barriers with that patient, engaging the person to determine goals and drive their POC, the therapist can begin to use MI shared decision-making and to help identify ways to lessen the impact of these barriers.[19-36]

People appear more resistant to change when they are at the precontemplation or contemplation stage and are not yet ready to change or beginning to consider changing.[26] Two types of common resistances are issue resistance and relational resistance. Issue resistance is usually related to a specific issue, and relational resistance is generally associated with interactions between the person and therapist.[26] Some of the most common examples of patient resistance that can be observed through behavior or affect include:[26]

- Interrupting the therapist (i.e., interjects with a related or unrelated question mid-sentence or before the therapist can finish the instruction)
- Disinterested, distracted, or overwhelmed behaviors (i.e., looking at their watch or cell phone, shutting down, becoming quiet, or no longer making eye contact)
- Defensiveness (i.e., hostile response to a related question)

An essential part of MI is the therapist's response to potential signs of resistance by the person. Establishing shared decision making, expressing empathy, developing discrepancy, supporting self-efficacy, using change talk, and using double-sided reflection can all be positive

Figure 2. Description of the steps of Motivational Interviewing to promote changed behaviors.



techniques of MI that decrease the patient's resistance, promote positive change, increase trust, foster collaboration, and promote increased engagement in the POC.[26]

Researchers have shown that using the TTM and MI effectively changes behaviors addressing diet and physical activity in many persons living with chronic health conditions.[9,11,12,17,23-24,26-36] Research on the effectiveness of MI has been limited by variations in the following areas: methods for evaluating its effectiveness, frequency of use, and the description of the MI training and fidelity for those conducting MI with patients.[28-36] Establishing a person centered, patient-driven plan of care should happen on the first visit, regardless of number of authorized therapy visits or reimbursement rates. The use of MI helps to address the psychosocial factors to achieve an effective outcome within a short period of time. A therapist's understanding of factors affecting the person's viewpoint of therapy, perceived barriers, motivation, and engagement in their therapy POC is essential to improving outcomes and goals. Utilizing MI with all clients can ensure people feel more engaged in therapy sessions; it empowers patients to vocalize questions and needs. This can create a strong patient-therapist partnership. PTs and PTAs may value clinician-patient collaboration; however, studies show that generally PTs demonstrate limited use of this tool in goal setting and treatment planning.[25]

Geriatric residency training during the pandemic provided this author (BE) with an opportunity to observe the positive outcomes when psychosocial factors were acknowledged and addressed with the use of the ICF model, TTM, and MI. Psychosocial factors had a more negative effect on the readiness to change of some people; the use of MI was essential to empower them to positively impact their health and quality of life with changes. The psychosocial factors of different patients resulted in a more positive readiness to change with less perceived resistance. It was easier for me to assess and utilize MI for these people to achieve their desired outcomes. The cases below are examples of clients seen in acute care, home health, and outpatient wellness settings. Those in outpatient wellness settings were seen at a clinic that serves communities that are underserved by limited access to healthcare resources or populations who may have lived in a shelter or experienced homelessness.

Patient Case 1 - Outpatient wellness center

A 75-year-old male with a history of schizophrenia, chronic obstructive pulmonary disease, hypertension, and atrial fibrillation presented with a humerus fracture on his dominant side after a fall on the ice. He did not have health insurance or means of paying out of pocket and was given a brace to help stabilize the fracture. The orthopedic surgeon had determined that the fracture could be managed conservatively without surgery. The clinic PT was consulted to address range of motion (ROM) at the elbow, distally, and edema management during healing. Discussion with the site's RN and patient interview identified optimal patient outcomes and possible barriers to a successful care plan. This included lack of access to health insurance, temporary housing in a shelter, lack of access to proper nutrition to promote bone healing, mental health, health literacy deficits, and recent COVID-19 infection. During his wellness visit, the patient reported a goal of wanting to "be more active and allow his arm to heal." He expressed concern about the pain and swelling in his hand and his belief of probable increased pain when performing elbow ROM. With the use of MI, the PT determined additional small goals that he had, including preventing future falls, improving endurance, overall strength, and mobility, and decreasing edema and pain. The PT addressed the edema and pain in the arm, provided a general exercise program to do without equipment, and instructed in nutrition and smoking cessation to promote bone healing. With the readiness to change model assessment, this person was determined to be in the preparation stage and was able to progress to perform a group exercise class, improve his forearm and hand ROM, decrease arm edema, and increase his exercise and activity safely. He would not have been as successful in his outcomes without acknowledging his psychosocial factors, utilizing communication with the staff at the facility, assessing the patient's readiness to change, and utilizing MI to improve his outcomes.

Patient Case 2 - Home health

An 88-year-old female was seen for both a reassessment and OASIS discharge in the urban home that she shared with 2 of her daughters. A PTA had managed the regular visits. She had a history of respiratory failure with cardiac arrest, COVID-19, and Type II diabetes mellitus. Recently hospitalized for sciatica, spondylosis, and spinal stenosis, the client had received a cortisone injection in her back prior to discharge home. She used a straight cane prior to admit but was discharged home using a wheeled walker. Caregiver support was shared by a daughter who worked from home, and another daughter who was her primary caregiver and assisted with mobility. A cognitive decline was recently noted by both family and HH staff. The patient and her family determined the goals of returning to prehospital functional status including ambulation with a straight cane. At PT reassessment improvements in ambulation, strength, Tinetti score, and the ability to attempt a 5 Times-Sit-to-Stand Test (5xSTS) were noted. She had been unable to attempt the 5xSTS at the initial evaluation. At discharge from home health, the PT reassessed the patient and noted that continued assistance with a wheeled walker was required for all transfers and mobility. The patient often sat all day in the chair and only walked 4-5x daily, mainly to the bathroom and back to her chair. The family reported that the patient was not performing the previously prescribed home exercise program nor were they assisting the patient with

the home exercise program. At the discharge visit, the family wanted to continue physical therapy to progress the patient to the cane. However, the Tinetti and 5xSTS assessments showed the patient had regressed, thus not allowing the patient to continue with further formalized physical therapy in the home. The TTM and MI models were not utilized with this patient and their family to address her non-adherence and ambivalence to the physical therapy POC. If both models had been used, the therapists might have been able to address that the patient and family were at different points on the TTM. The patient was in the precontemplation stage, not ready to change, but thinking about changing. The family was in the contemplation to preparation stages where they wanted to change but did not know how to assist in making that happen. Cultural lifestyle may have impacted the patient's readiness to change as the PT and PTA were of different generational, race, and ethnic backgrounds. If MI had been used at the evaluation and reassessment and during regular visits by the PTA, the patient and therapists might have been able to discuss and better understand the patient's and family's views and agree on goals. They could have established a patient-centered POC and been more successful at achieving the patient and family goals to return the patient to using the cane in the home and community.

Patient Case 3 - Acute care and home health

Another patient seen in both acute care and home health settings exemplifies how psychosocial factors positively affect patient outcomes and quality of life. An 87-year-old female patient status-post stroke with resulting left hemiplegia (nondominant) with flaccid upper but functional use of the lower extremity (LE). She had a history of osteoarthritis in hands and knees, low back pain with sciatica, and paroxysmal atrial fibrillation. She was not on anticoagulation for her paroxysmal atrial fibrillation (reason not known), which caused her stroke. She did not exhibit stroke-related cognitive or speech deficits; the impaired use of her left UE and LE caused deficits in strength, balance, transfers, and gait. Her daughters and family were very involved in her care. One daughter moved into her home during the pandemic so that she could assist with activities of daily living and mobility while working from home. They lived in a small urban home with 6 stairs to enter with a dilapidated railing. The house would require multiple repairs to make it more accessible for her. With assistance from her daughter, they were planning to move to a house that was handicapped accessible without stairs. The patient and family's goals were for her to regain full use of both left UE and LE; they were very motivated to achieve this. The patient and daughter actively performed her home exercise program for standing exercises, balance exercises, and walking programs. The patient and daughter were both at the action stage for the TTM and actively wanted to pursue change in their lives for an improved quality of life and function for the patient. With the use of MI, the PT, patient, and family discussed and agreed on a plan of care to achieve the patient's and family's goals. This case is an example of positive psychosocial factors and the utilization of the TTM and MI to accomplish the patient and family's desired outcomes.

By utilizing the ICF model and addressing psychosocial factors, the therapist can help identify any possible barriers or facilitators to a patient's ability to progress toward their goals. Once these psychosocial factors are addressed, the therapist can then assess the person's readiness to change with the TTM and apply MI techniques to empower and assist the patient to progress. TTM and MI are tools to help therapists and patients effectively reach a person's desired outcomes, allow improving quality of life, and reduce any negative effects of chronic health conditions.

The Barnes-Jewish Hospital Rehabilitation Department Geriatric Residency is based in Saint Louis, Missouri and was accredited in 2021. This twelve-month residency combines ongoing clinical mentoring with didactic work to promote advanced practice and scientific inquiry. Residents also experience quality improvement and or research, journal clubs, teaching in both clinical education and academic settings, rounds, specialty clinics and observations. Residents have exposure to geriatric clients in different settings with different diagnoses. For more information about this residency go to https://www.barnes-jewish.org/Careers/Geriatric-Physical-Therapy-Residency.

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Is Pilates Enough?

by Sherri Betz, PT, DPT

Editor's Note: This clinical case commentary was part of content for the January 2023 Journal Club. These case studies are intended to demystify the more formal statistics and format of a peer-reviewed article and translate key concepts into clinically usable information. Join us for Journal Club on the third Tuesdays of January, March, May, July, September, and November at 8 pm ET to discuss current concepts with a wide range of peers.

Case study presentation based on the research article from Journal of Geriatric Physical Therapy: de Oliveira RG, Anami GEU, Coelho EA, et al. Effects of Pilates Exercise on Bone Mineral Density in Postmenopausal Women: A Systematic Review and Meta-analysis. J Geriatr Phys Ther.2022; 45(2):90-106.

Case Report: Linda

This 66 yo Caucasian female, retired professor, presented to clinic with chief complaint of L healed clavicle and wrist fractures and low back pain with occasional radiating pain into L buttock. PMH includes Osteoporosis, L Wrist Fracture, Lumbar L Sidebending Scoliosis, Low Back Pain. She is not taking any medications and would like to avoid any "bone drugs."

Linda is married and lives with her husband in a single-story home. She states that she fractured her clavicle and left wrist in a 2016 bicycle accident. She takes long 3-mile walks 6 days per week and began Pilates Mat classes 2 times per week in 2019. She has a history of low back pain which comes on after sitting for longer than 30 minutes or after doing a lot of housework such as mopping, sweeping, or vacuuming and with gardening. She reports that she generally feels better when she keeps moving but can't "over do it." She states that she had a big scare recently when she tripped on her front steps and suffered a L Colles fracture in January 2021 and realized that she needed to do more to improve her bone health. She is motivated to be proactive about her bone health; she is afraid of heavy lifting or strength training due to the possibility of "making her osteoporosis and scoliosis worse in her spine."

Objective

DXA Reports:	**2018**	**2019**	**2021**	**2022**
Lumbar	-2.4	-2.3	-2.5	-1.8
Hip	-1.5	-1.4	-1.4	-1.3

Note: Patient began a Pilates Mat program in 2019 and continued until her L wrist fracture occurred in January 2021. After the wrist healed, she added strength training to her exercise program 3xw. She made no other changes to her diet, lifestyle and no additional supplements or medications during Mar 2021-Oct 2022.

MRI 2019

L2/L3: Minimal Intervertebral Disc Desiccation and L Mild Foraminal Stenosis; L3/L4: Moderate Intervertebral Disc Desiccation, L Moderate-Severe Foraminal Stenosis;

L4/L5: Minimal Intervertebral Disc Desiccation, Mild B Foraminal Stenosis;

L4/L5: Minimal Intervertebral Disc Desiccation, No Foraminal Stenosis.

Findings at initial evaluation

Posture: Forward head and scapular winging in standing with flat thoracic spine, anterior pelvic shift, general collapse in spine. Pelvis and leg length equal B.

Breathing Assessment: Pt is predominately a diaphragmatic breather with poor ability to perform thoracic expansion with costal breathing (1 1/4" expansion, 3/4" contraction) which indicates poor core control with decreased ability to perform a forced expiration. Normal is 2" expansion + 2" contraction.

SIJ Cluster: Negative (which rules out pain generated by SIJ)

PA Glides at L3-S1 lumbar spine painful and radiating pain into L buttock provoked at left L4-5 and L5-S1

Occiput to Wall Distance = 1"

Rib to Pelvis Distance=2 fingers R, 1 finger L *(common with scoliosis)*

Kyphotic Index: Not tested due to flat thoracic spine

4 Stage Balance: Romberg: 10s, Semi-Tandem: 10s, Tandem: 10s, Single: R=5s, L=4s

5x Sit to Stand= 9 seconds. *(Indicates good leg strength. Note: Increased lumbar flexion-unable to maintain neutral spine with hip hinge)*

Functional Reach = 9" (With increased lumbar flexion)

MMT 5/5 in B LE

Abdominals and Abdominal Wall Control: 4/5 (Mild

Table 1: Mat Class Exercises performed 2x weekly

STANDING WARM-UP/BALANCE
- Standing & Centering Postural Cues
- Standing Balance
- Up on Toes with Ankles Together
- SLS-Heel Raise with Ankle Tracking
- SLS-Bend knee, arch lifted, knee over 2nd toe
- Bend/straighten Knee with tubing
- Chair Pose with Hip Hinge, neutral spine
- Lunges (Marriage proposal position

FOAM ROLLER/AB WORK
- Mount foam roller instruction
- Palms Up Snow Angels
- Marching with Core Control
- 90/90 Pelvic Tilt – 10x
- 90/90 Bent Knee Fall out
- Sidelying on Elbow: neutral spine Stance position
- Side kick- leg straight
- Modified Mermaid
- Roller Perpendicular mounting Instruction
- Rolling back/forth neutral thoracic spine
- Thoracic extension

MAT PROGRESSION
- Quadruped-neutral spine, pregnant cat breathing, contralateral Shl Flex/Hip Ext
- Push Up, Hold Plank x 1 minute
- Prayer Stretch
- Chest Stretch
- Log Roll to Supine
- Bridging & Pelvic Clocks, up/down x3, Single leg up/down x3 each side
- Towel Stretch: HS, ADD, IT Band

PRONE
- Breathing with low belly lift
- Hip Ext/Contra Shoulder Flex
- Pre-swimming
- On elbows Single Leg Kick, pubic bone remains 1" off mat
- Swan in 3 parts
- Double leg kick

FINISH COOLDOWN
- Seated meditation
- Practice transition to standing
- Child's pose w/Arms extended Rest
- Eve's Lunge (Psoas stretch in Kneeling)

Abdominal Bulge and Lumbar Extension with one leg at 90/90 angle and one leg extended with knee straight in supine)

Joint Mobility: limited to 105 degrees in hip flexion B. WNL all other directions

Neurological testing: Sensation, deep pressure, sharp/dull all WNL.

Reflexes: Patellar B 2+, Achilles 2+ B

SLR: L + at 60 degrees and provokes familiar c/o pain, R negative

Bowel/Bladder: WNL

Pain: 0-8/10 at worst with prolonged sitting ³30 min and when performing housework

Function: In picking up a 10# box from the floor, she is unable to maintain lumbar neutral since she does not have enough hip mobility to perform a hip hinge to allow her to reach the floor in neutral spine. She flexes lumbar spine at 14" from floor. With floor to stand transition, she uses a lumbar flexion pattern to rise to standing.

Treatment and intervention

Linda was instructed first to avoid thoracic flexion in all functional activities and exercise for fracture prevention and spinal awareness. She had difficulty remembering not to flex at lumbar, so we focused on using a 4-foot dowel for alignment - touching the head, midback and sacrum as a tactile feedback self-cue. Taking photographs and videos for her HEP to help with reminders for correct practice at home proved very useful.

We began with manual therapy interventions to reducing low back pain. She received Maitland Grade III-IV PA glides at the lumbar spine to improve mobility in lumbar extension and to reduce pain. Myofascial release was performed to decrease the lumbar spasm. The Pilates Trapeze Table Apparatus was implemented to provide lumbar active traction. The Pilates Reformer Apparatus was selected to begin hip mobility, spinal awareness, and lumbo-pelvic stability in a supine non-compressive and non-painful spinal position (she did not have pain in supine). Linda was re-instructed at each PT session in proper lifting techniques using the dowel, videos, and mirrors for immediate feedback.

Prior to Colles fracture/fall, Linda had participated in 2 years of Pilates Mat Classes 2 x weekly and Apparatus Onsite Session 1x weekly (total of 81 visits in a 2-year time period). These exercises are like the Pilates exercises found in the 3 studies in the Oliveira et al. 2022 systematic review.

When BMD did not improve after 2 years of this program, we added high intensity strength training as suggested in Oliveira et al. 2022 using a combined virtual (2x/week) and in-person (weekly) program as in Table 3.

Trapeze Table Tower, demonstrating an exercise contraindicated with thoracic osteoporosis ➔

Wunda Chair with Recommended Forward Lunge with Resistance ➔

Contraindicated "Corkscrew" Mat Exercise ➔

Table 2: Pilates Apparatus Exercises - Initial program, 1x/week

REFORMER
- Footwork
- Arm Arcs in all directions
- Bridging
- Feet in Straps
- Quadruped
- Pulling Straps
- Eve's Lunge
- Side Splits
- Front Splits

LADDER BARREL
- Bridging
- Swan (Modified-partial ROM)
- Side Sit Up (Modified-partial ROM)

CHAIR
- Forward Lunge
- Side Lunge
- Swan
- Mermaid

TRAPEZE TABLE
- Long Spring Leg series
- Swan
- Standing on Floor Arms
- Spring Assisted Squats

All Pilates Apparatus exercises were in session On-site with NCPT certified Pilates teacher/ licensed PT instructing

Outcomes measures at discharge

Posture: WNL. Pelvis and leg length equal B.

Breathing Assessment: Pt is able to perform both diaphragmatic and costal breathing (2.25" expansion, 1.5" contraction) which indicates poor core control with decreased ability to perform a forced expiration. Normal is 2" expansion + 2" contraction.

SIJ Cluster: Negative

Occiput to Wall Distance = 0"

Rib to Pelvis Distance=3 fingers R, 2 fingers L (common with scoliosis)

Kyphotic Index: Not tested due to flat thoracic spine

4 Stage Balance: Romberg: 10s, Semi-Tandem: 10s, Tandem: 10s, Single: R=10s, L=10s

5x Sit to Stand= 7 seconds. (Indicates good leg strength. Note: Able to maintain neutral spine with hip hinge)

Functional Reach = 13" (With neutral spine)

MMT 5/5 in B LE

Abdominals and Abdominal Wall Control: 4+/5 (No Abdominal Bulge and No Lumbar Extension with two legs extended with knees straight at 45 degrees in supine)

Joint Mobility: limited to R 118° and L 115° degrees in hip flexion. WNL all other directions

Neurological testing: Sensation, deep pressure, sharp/dull all WNL.

Reflexes: Patellar B 2+, Achilles 2+ B

SLR: L + at 60 degrees and provokes familiar c/o pain, R negative

Bowel/Bladder: WNL

Pain: 0-2/10 and less frequent during the day.

Function: In picking up a box ranging from 10-40# from the floor, Linda is still unable to maintain lumbar neutral; she does not have enough hip mobility to perform a hip hinge to allow her to reach the floor in neutral spine. She can now maintain neutral lumbar spine when the object is 6" from the floor. Linda can now use a lumbar neutral pattern to rise to standing from the floor.

DXA: Improved from 2021 to 2022 in lumbar from -2.5 to -1.8 and femoral neck from -1.4 to -1.3 (femoral neck improvement not statistically significant)

Discussion

Evaluating the effects of Pilates exercises on bone mineral density is important due to the popularity of Pilates among older adults. Older adults are often seeking a gentle form of exercise as they age. But is that enough for building or maintaining bone mineral density in the ageing adult?

The 3 papers selected for this systematic review included exercises that are typical in Pilates Mat and Apparatus classes. However, the nomenclature of Pilates exercises is confusing in the published papers. The National Pilates Certification Board attempted to standardize the

naming of exercises from different Pilates schools to provide more clarity in replication of exercises. Researchers and schools should consider using the NCPT Study Guide for reference in naming and describing Pilates exercises that were developed originally by Joseph Pilates[2].

It is difficult to compare Pilates Mat exercises and Apparatus exercises since Pilates Mat only relies on bodyweight non-weightbearing exercises for resistance and Pilates Apparatus applies springs to either resist or assist movement in both weightbearing and non-weightbearing positions. Looking more in-depth at the papers included in Oliveira's systematic review, Angin 20153 and Oliveira 20194 studies included exercises that would be contraindicated for subjects with osteoporosis. Liposcki 20165 offered modifications for exercises (Hundred-modified and Bicycle-Modified) that involved thoracic flexion. In the Angin 2015 paper, where only Pilates Mat exercises were included, Corkscrew, Roll Up, Roll Down, Hundreds, One Leg Stretch and Double Leg Stretch were all performed unmodified in thoracic flexion with Cork Screw being highly compressive to the thoracic spine since the pelvis is lifted up over the head and shoulders.[3] Oliveira 2019 included Pilates Apparatus Exercises on Wunda Chair - Hamstring Stretch, Trapeze Table (Cadillac) -Tower, a highly compressive exercise which adds additional load to the thoracic spine in flexion. Mat exercises including Spine Stretch Forward, Teaser, and Hundred were included unmodified.[4] It is important to note that the exercise program in this case report differs from both Angin and Oliveira's exercises since any exercises that included thoracic flexion were omitted or modified.

All the exercises in Angin 2015 were performed with only body weight for resistance and Mini-Squat, Rolldown, and Toy Soldier were the only standing exercises included in the program3. There were no deep squats, single leg balance activities, or significant leg strengthening activities in the Angin program. Surprisingly, Angin did not test femoral neck bone mineral density in their subjects. Swimming and Swan Dive were the only thoracic extension/back extensor strength exercises included in the Angin paper that may have had some effect in improving lumbar spine BMD, as reported in previous papers by Sinaki.[6,7,8] In the Oliveira 2019 paper, there were 3 standing exercises included on the Wunda Chair: Forward Lunge, Pump One Leg Front, and Achilles Stretch. All three exercises use springs to assist leg strength meaning that they provide a load that is less than body weight, contrary to the statement that springs provide resistance and overload. In the 3 exercises above, this unloading effect may be providing too little stimulus to the femoral neck. By contrast, an exercise such as the Forward Lunge on the Chair with light or no springs to assist ascent with added weights for resistance would be a suggested safe and more effective exercise for bone stimulus.

Table 3: Increased Intensity Program

Virtual HIT/Pilates Combo 2x/week	Pilates Apparatus Onsite 1:1 Sessions 1x/week
STANDING WARM-UP/BALANCE • Hip Hinge w/Dowel Warm-Up • Deadlift @ 70-85% 1RM • Overhead Press @ 70-85% 1 RM • Back Squat @ 70-85% 1 RM • SL Heel Raises @ 70-85% 1RM • Lunges @ 70-85% 1 RM **MATWORK** • Quadruped/Leg Pull • Teaser/Hip Circles w/hands wide behind back • Plank transition to supine • Supine AB series w/head down • Sidekick/Side Lift • Single Leg Kick **COOL DOWN** • Half Down Dog/Extended Child's Pose • Seated Meditation & Posture Cues/Reminders	**REFORMER** • Use Springs w/" Footwork" to achieve fatigue in 10 reps • Single Leg Footwork • Single Leg Jump board • Double/Single Leg Bridging (Pelvic Press) • Seated or Kneeling Rows (Thigh Stretch) • Pulling Straps (prone extension w/resist • Breaststroke (Overhead Press) • Swimming on Long Box (add dumbbells) • Long Stretches (Plank/Push Up) • Long Back Stretch • Eve's Lunge • Standing Side Splits • Front/Back Splits • Russian Splits **WUNDA CHAIR** • Forward Lunge + PRE • Side Lunge + PRE **LADDER BARREL** • Bridging for Spine Mobility • Bridging to prep for Swan • Swan w/dumbbell resistance

Oliveira found that Whole Body Vibration (WBV) and Pilates yielded similar effects on the spine and recommended that subjects choose either type based on their preference.[4] In a broader perspective of overall health of joints, balance, coordination, muscle strength, and mobility, exercise would always be the better choice over vibration. According to Clint Rubin, scientist who developed and researched the low intensity vibration platform, vibration should be used as an adjunct to exercise, not instead of exercise.[9] All 3 studies included in the systematic review under discussion were conducted for 6 months, a relatively short time in which to see results in bone mineral density. Hartley et al 2022, recommended no shorter than 8-12 months or longer to effect significant changes in BMD through exercise.[10] I agree with the authors of Oliveira et al 2022, that Pilates should not be used exclusively as an exercise approach for affecting BMD.[1] Therefore, Linda appeared to benefit in both function and BMD by adding a high intensity strength training component to her Pilates program. Pilates' focus on alignment, awareness and precision of movement has been a very useful approach in my clinical practice as a preparation or in combination with bone loading high intensity resistance exercises. I would like to thank the authors for providing an excellent analysis of Pilates Apparatus and Mat effects on bone mineral density.

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Total Joint Arthroplasty: We Are More Than Technicians

by Carole Lewis, PT, DPT, PhD, FAPTA; Linda McAllister, PT, DPT; and Alisa Curry, PT, DPT

The role, interventions and involvement of the physical therapist has changed with improved surgical and pharmacological practice for persons after total joint arthroplasty (TJA). Nine years ago, people were hospitalized and received acute care interventions after a TJA for an average of 5 days. This was followed by post-acute discharge of 54% to home, 37% to skilled nursing facilities, and 8.4% to inpatient rehab facilities.[1] Clinicians in skilled nursing, home health and outpatient settings would progress the continuum of recovery using skilled examination and interventions.

The Centers for Medicare and Medicaid Services (CMS) enacted the Comprehensive Care for Joint Replacement Model (CJR) model in 2016. Initially focusing on 67 metropolitan areas, CMS sought to hold health care entities accountable for TJA patient outcomes and changed fee-for-service reimbursement to a bundled payment for the entire episode of care. Physicians and organizations were prompted to improve participant selection, intraoperative medications, regional anesthesia, surgical innovations, hospital care, and rehabilitation techniques. Individual joint recipients showed improved outcomes due to these advances in experience and pain relief.[2, 3] Medicare subsequently tied reimbursement to organizational accountability and removed these procedures from the "inpatient only" surgical location classification, elevating the use of ambulatory surgery centers (ASCs) by surgeons. Consequently, physicians began to publish articles that question the need for formal physical therapy.[4, 5] Artificial intelligence (AI) and augmented reality (AR) educational modules arose to provide exercise programs as a replacement for skilled rehab.[6,7, 8] These programs, developed by implant manufacturers, offer packaged exercises, pain reporting and patient self-report surveys, allowing surgeons options for general patient compliance monitoring without individualized adaptations for best performance strategies. It cannot be disputed that eliminating/limiting physical therapy direct intervention may also limit the extent to which the financial pie of a bundled payment is split. Outcome improvements and the CMS change allowing surgeries in ambulatory surgery centers also facilitated consistent discharge to home on same (surgical) day. Individuals deemed complex due to multiple comorbidities that justify a hospital-based surgery can also be expected to discharge same day according to improved techniques and clinical pathways. Physical therapy plans of care and intervention strategies must keep up with these regulatory changes. How can physical therapy have the most functional outcome impact on those affected when pain relief and early ambulation seems to be the primary attention of physicians? We must show the medical team that we are more than technicians. The question is: how can we do that and show our value to this payment model?

One way is to demonstrate the value of skilled intervention in fall prevention. Numerous articles highlight concerns after total joint surgery for increased fall risk. A 2018 article examined environmental factors and fall incidence, with the median time frame being the first 15 weeks post op.[9] If post-op joint replacement patients fall and sustain injury, they incur more cost, hospitalization, and a potential compromised quality of life. Using our expertise, we identify indications for fall risk that can be mitigated with physical therapy interventions. Ko, et al in 2018 identifies the importance of considering knee pain in fall studies for better understanding the fall-related differential gait mechanisms and designing fall prevention intervention strategies.[10] Range of motion (ROM) deficits of the knee, combined with restrictions in hip and ankle flexibility are key elements contributing to increased fall risk and compromised function. Improvement of ROM by exercise therapy and patient education regarding the prevention of falls and fractures are considered necessary for individuals with limited knee flexion and ankle plantar flexion.[11] Specifically examining reasons for post discharge falls, authors of a 2019 metanalysis looked at twelve studies with a total of 1,292,689 participants. These studies found moderate contributory risk factors that included medications, psychiatric diseases, living alone, prior history of TKA, falls history, and female gender.[12]

These studies highlight the need for physical therapists, movement experts, to focus treatment plans on ROM, balance, strengthening, and motor training activities to improve client safety. *This is what separates us from technicians* that just monitor exercises and walk people. Specialization in movement strategies early in the recovery can have significant impact in long-term physical ability of aging adults. This is vital to our role in the changing field of joint arthroplasty. PT interventions not only insure post-surgical individuals regain their functional ability for mobility, strength, and power, but also prevent complacency of settling for early simple outcomes with potential long-term functional problems. *We must own our expertise* in understanding the body's requirements for functional activities: squatting, kneeling,

sitting on low surfaces, and getting up and down from the ground. There is more to total joint recovery than walking and performing ROM exercises, which physicians seem to focus on. In the renaissance of joint replacement procedures, let's make sure that physical therapists use evidence-based clinical expertise to assess and teach skills that are beyond what a technician or a computer can provide.

[Editor's Note: This is an article in a series synthesized from lectures in the Great Seminars and Books courses]

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