



School of Medicine

IMPACT OF PHYSICAL THERAPY IN THE MANAGEMENT OF MUSCULOSKELETAL PAIN IN HIV PATIENTS



School of Medicine

Vinoja Sebanayagam, MSc¹, Nicole Chakur, PT, DPT, OCS², Jarrett Weinberger, MD¹, Brandon S. Twardy, MD, PhD¹, Jennifer Veltman, MD¹
¹Wayne State University School of Medicine, Detroit, MI and ²Wayne State University, Detroit, MI

Contact information:

vinoja.sebanayagam@med.wayne.edu

ABSTRACT

Background:

Musculoskeletal (MSK) pain is common in HIV patients in the ambulatory setting. Healthcare providers tend to prescribe opioids to control MSK pain in HIV patients, which increases the risk of opioid misuse. An interdisciplinary approach that includes physical therapy has been successful in managing MSK pain in various healthcare settings. Therefore, we sought to find the impact of recruiting a physical therapist (PT), on the number of opioid prescriptions and physical therapy referrals made by resident physicians to manage MSK pain in HIV patients.

Methods:

We performed a retrospective chart review of all patients seen by Internal Medicine (IM) residents in an HIV clinic in Detroit, before (01/17-05/17; 2017 dataset) and after (01/18-05/18; 2018 dataset) recruiting a physical therapist to the healthcare team. We collected demographic and clinical data from both datasets. We also surveyed the residents to assess how the PT addition influenced their comfort and knowledge in treating MSK pain in HIV patients. IRB waiver was obtained.

Results:

Results showed that of all HIV patients seen at the clinic, 28/249 (11%) and 37/178 (21%) had chronic MSK pain in the 2017 and 2018 datasets, respectively. In 2017, all 28 patients with MSK pain were prescribed opioids. This number significantly decreased in 2018 after the PT addition (10/37 patients; p<0.0001). Moreover, the number of physical therapy referrals made by residents significantly increased after the PT addition (2017: 5/28 patients; 2018: 17/37 patients; p=0.03). Residents also recommended non-opioid interventions including orthopedics referrals (7/37 patients), braces/orthotics (3/37 patients) and non-opioid analgesics (26/37 patients) to patients after the PT addition. Survey responses showed that 7/9 residents (78%) felt that the physical therapist was helpful in improving their examination skills or developing a treatment plan for patients.

Conclusions:

In conclusion, our results show that the addition of a physical therapist to the team encourages physicians to utilize non-opioid management of MSK pain in HIV patients. We also find that physicians are satisfied with taking an interdisciplinary approach to pain management in HIV patients.

INTRODUCTION

- ❖ Musculoskeletal (MSK) pain is a common symptom reported by HIV patients
- ❖ MSK pain in HIV patients has not been adequately recognized or properly treated over the years
- ❖ MSK pain contributes to diminished physical function and quality of life
- ❖ Traditional management of MSK pain involves opioid prescriptions, which increases the risk of addiction and misuse

OBJECTIVES

- ❖ Exploring an interdisciplinary approach that involves the inclusion of a physical therapist (PT) to the medical team to manage chronic MSK pain in HIV patients
- ❖ Exploring resident perception and comfort in the interdisciplinary management of MSK pain in HIV patients

METHODS

- ❖ **Population:** HIV patients with MSK pain symptoms who visited the clinic between Jan-May 2017 (n=28; before PT introduction) vs HIV patients who visited the clinic between Jan-May 2018 (n=37; after PT introduction)
- ❖ **Study Design:** Retrospective cross-sectional comparative study
- ❖ **Measures of Interest:**
 - ❖ Change in proportion of opioid prescriptions before vs after PT introduction
 - ❖ Change in proportion of physiotherapy referrals before vs after PT introduction
 - ❖ Survey responses of residents re: pain management with the help of the physical therapist
- ❖ **Statistical Analysis:** Fisher's exact test ($\alpha = 0.05$)

RESULTS

❖ Symptom prevalence

Symptom	Before PT recruitment (2017)	After PT recruitment (2018)
Overall chronic MSK pain (%)	11%	21%
Chronic back pain (%)	71%	43%
Upper extremity pain (%)	7%	14%
Lower extremity pain (%)	36%	24%

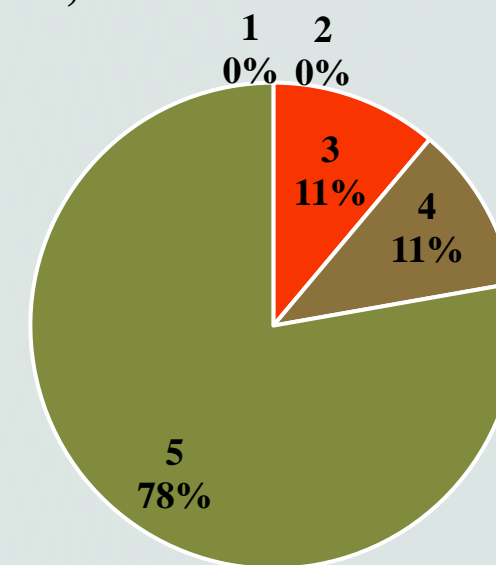
❖ Outcome of interventions

Intervention	Before PT recruitment (2017)	After PT recruitment (2018)	p-value ($\alpha = 0.05$)
Opioid prescriptions (%)	100%	27%	**p < 0.0001
PT referrals (%)	18%	46%	**p = 0.03

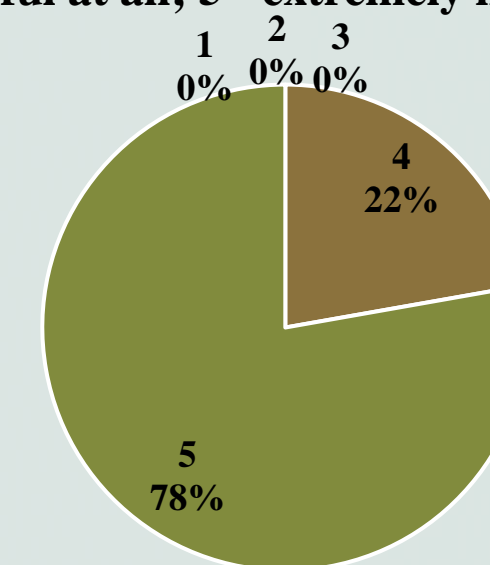
- ❖ Opioid prescriptions provided for chronic back pain (p<0.0001) and lower extremity pain (p=0.01) significantly reduced after PT introduction.
- ❖ No significant difference was observed in combined intervention (opioid prescription and physiotherapy referral) before vs after PT introduction (p=0.22)

❖ Survey responses of residents on management of MSK pain in HIV patients with the help of a physical therapist

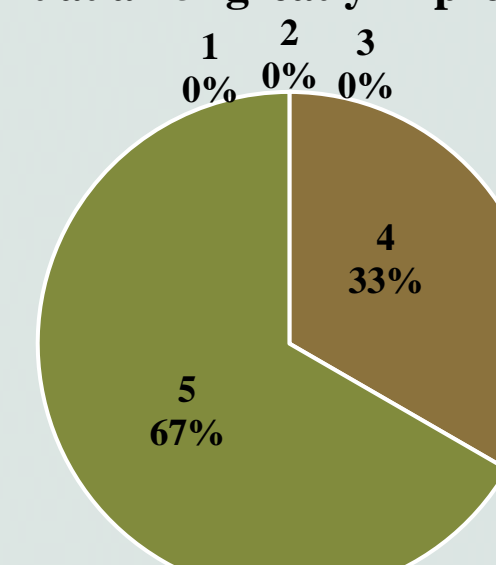
Do you think that the assistance of a physical therapist in clinic has been helpful in developing a treatment plan for patients? (1=I do not think this has been helpful; 5= This has been extremely helpful)



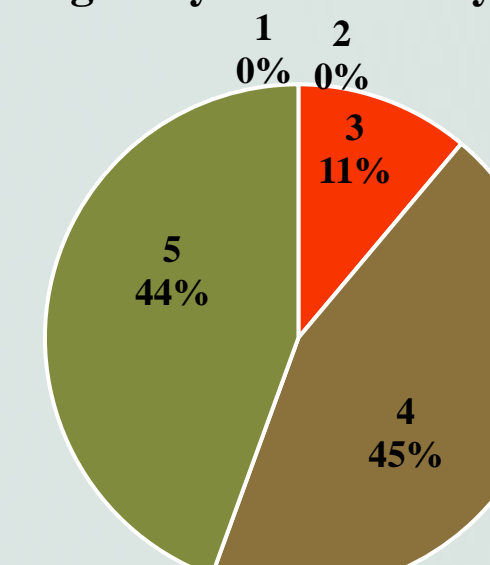
Has the physical therapist been helpful in improving your examination skills for patients with common MSK disorders? (1= not helpful at all; 5= extremely helpful)



Do you feel having a physical therapist in clinic improved your management of MSK pain in HIV patients? (1=I do not think this improved management at all 5=greatly improved management)



Do you feel having a physical therapist in clinic enhanced your learning experience? (1=I do not think this enhanced my learning at all; 5=This greatly enhanced my learning)



DISCUSSION

Interdisciplinary approach to chronic MSK pain management in HIV patients

- ❖ Our results showed that the proportion of opioids prescribed by resident physicians decreased after the inclusion of a physical therapist to the medical team
- ❖ Concurrently, the proportion of physiotherapy referrals made by residents increased after the physiotherapist was introduced to the team
- ❖ Residents also recommended alternative interventions such as orthopedics referrals, non-opioid analgesics & braces/assistive devices/orthotics, after the physical therapist became a part of the team.
- ❖ This significant reduction in opioid prescriptions could have resulted from residents understanding the full scope of physiotherapy in pain management.
- ❖ Known benefits of PT: reduction and plateauing of pain scores, increased patient satisfaction, less ER/urgent care clinic visits. Physical therapists have also been shown to be better at diagnosing MSK conditions than all other healthcare providers with the exception of orthopedic physicians.

Resident satisfaction with the interdisciplinary approach

- ❖ A majority of residents felt that the physical therapist was helpful in improving their examination skills or developing a treatment plan

Strengths: Novel exploration of the benefits of an interdisciplinary approach to MSK pain management in HIV patients, study shows benefit from physiotherapy - consistent with other studies done in different settings/patient populations

Limitations: single clinic, cross-sectional, small sample size, retrospective

Future Directions: Quantify changes in quality of life of patients after PT introduction: patient specific functional scale, pain rating scale, disability index

CONCLUSIONS

1. Including a physiotherapist to the medical team helps optimize medical management of chronic MSK pain in HIV patients
2. This interdisciplinary approach to pain management would help reduce potential opioid misuse/addiction resulting from excessive opioid prescriptions
3. Resident knowledge and comfort in pain management in HIV patients improves with the addition of a physiotherapist to the team

REFERENCES

- Lee KA, Gay C, Portillo CJ, et al. Symptom Experience in HIV-Infected Adults: A Function of Demographic and Clinical Characteristics. *J Pain Symptom Manage.* 2009;38(6):882-893.
- Justice AC, Rabeneck L, Hays RD, Wu AW, Bozzette SA. Sensitivity, specificity, reliability, and clinical validity of provider-reported symptoms: a comparison with self-reported symptoms. Outcomes Committee of the AIDS Clinical Trials Group. *J Acquir Immune Defic Syndr.* 1999;21(2):126-133.
- Robinson-Papp J, Elliott K, Simpson DM, Morgello S, Hiv TM, Bank B. Problematic Prescription Opioid Use in an HIV-infected Cohort: the Importance of Universal Toxicology Testing. *J Acquir Immune Defic Syndr.* 2012;61(2):187-193.
- Childs JD, Whitman JM, Sizer PS, Pugia ML, Flynn TW, Delitto A. A description of physical therapists' knowledge in managing musculoskeletal conditions. *BMC Musculoskelet Disord.* 2005;6(32).

This work was supported by the DMC foundation grant