Rates of Psychotropic Drug Use in Patients Undergoing Arthroscopic Shoulder Surgeries

Nicholas O. Gerard III[1], Brianna N. Young[1], Michael R. Cesarek[1], Victoria K. Ierulli[1], Michael J. O'Brien[2], Felix H. Savoie III[2], Mary K. Mulcahey[3]

[1]Tulane University School of Medicine
[2]Tulane University School of Medicine, Department of Orthopaedic Surgery
[3] Loyola University Medical Center, Department of Orthopaedic Surgery and Rehabilitation

TULANE UNIVERSITY SCHOOL of MEDICINE

LOYOLA MEDICINE 1870 AD · MAJOREM · DEI · GLORIAM

Tulane DOCTORS ORTHOPAEDICS

@marykmulcaheymd

@marykmulcaheymd

Disclosures

Mary K Mulcahey, MD, FAAOS

Arthrex, Inc.

Committee/Board
- AAOS
- AOA/CORD
- AOSSM
- AANA
- RJOS
- ISAKOS
- ABJS

Felix H Savoie III, MD, FAAOS

Biomet: Unpaid consultant

CONMED Linvatec: IP royalties; Unpaid consultant

Exactech, Inc: IP royalties; Unpaid consultant

Mitek: Unpaid consultant

Smith & Nephew: Unpaid consultant

Zimmer: IP royalties

Michael J O'Brien, MD, FAAOS

Aevumed: Stock or stock Options
American Shoulder and Elbow Surgeons: Board or committee member
Arthroscopy Association of North America: Board or committee member
Exactech, Inc: Paid consultant
Smith & Nephew: Paid consultant; Research support
Southern Orthopaedic Association: Board or committee member Wright Medical Technology, Inc.: Paid consultant

Introduction

The Drugs

From 2007 to 2021 psychotropic drug use increased from 10% to over 20% in US adults.

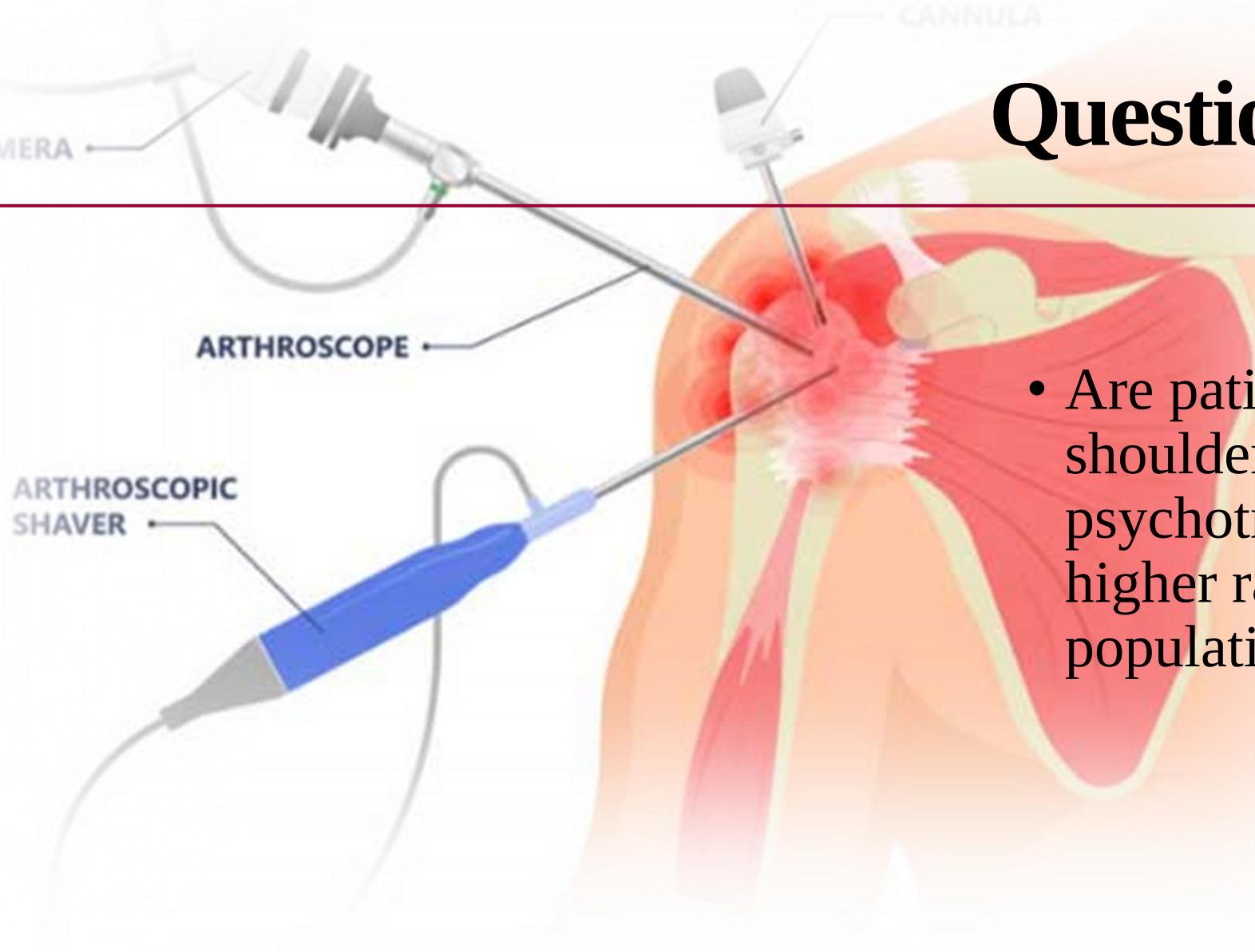
The Surgery

Arthroscopic shoulder surgeries are some of the most common surgical procedures preformed today.

The Concern

The escalating use of psychotropic drugs in surgical patients is a complex issue that necessitates careful consideration of its potential consequences.

Question



- Are patients who undergo shoulder arthroscopy taking psychotropic medication at higher rates than the general population?

Research Methodology

1

CPT codes

A single billing database was searched for relevant CPT codes between 2019 - 2021.

2

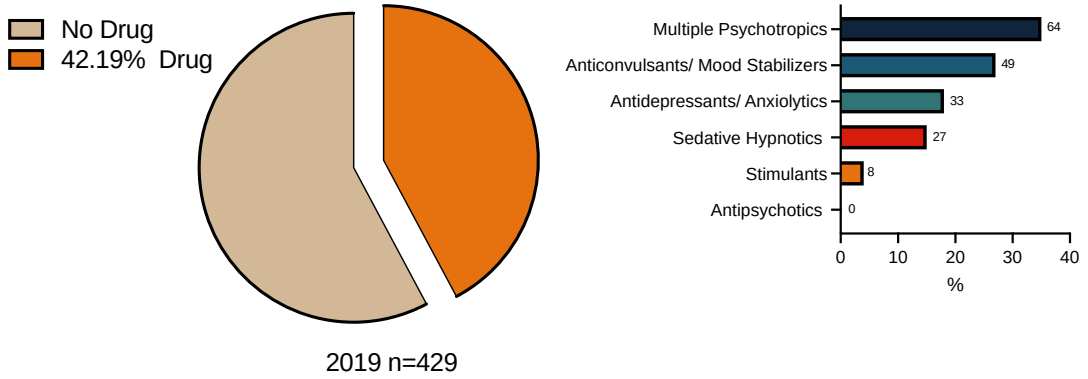
Data Collection

Data was collected from 1279 medical records of patients who underwent shoulder arthroscopy between 2019 - 2021 including the class and subtype of psychotropic drug prescribed.

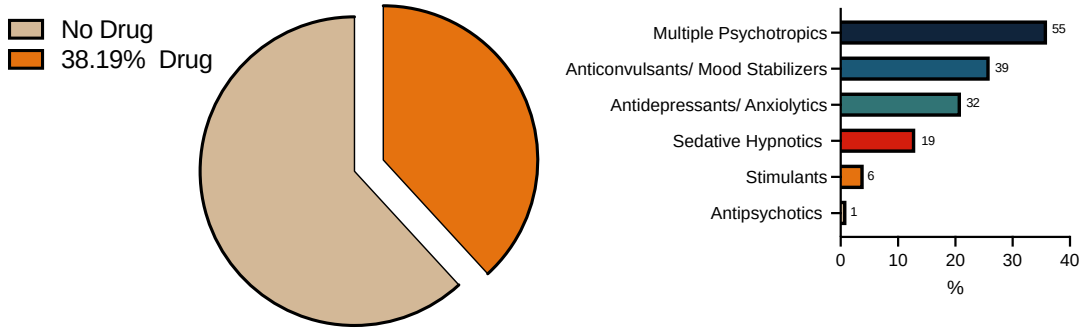
3

Statistical Analysis

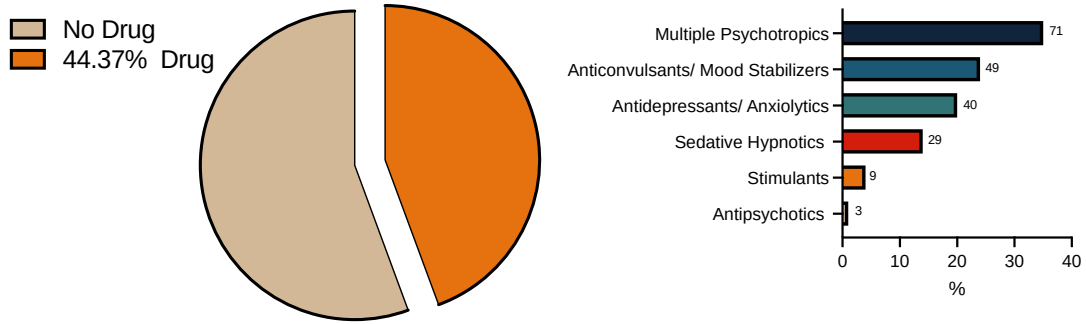
The data was analyzed using descriptive and inferential statistics to identify trends and patterns.



2019 n=429

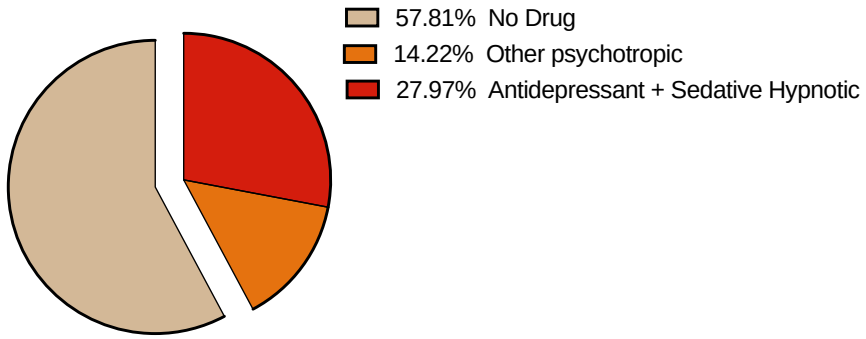


2020 n=397

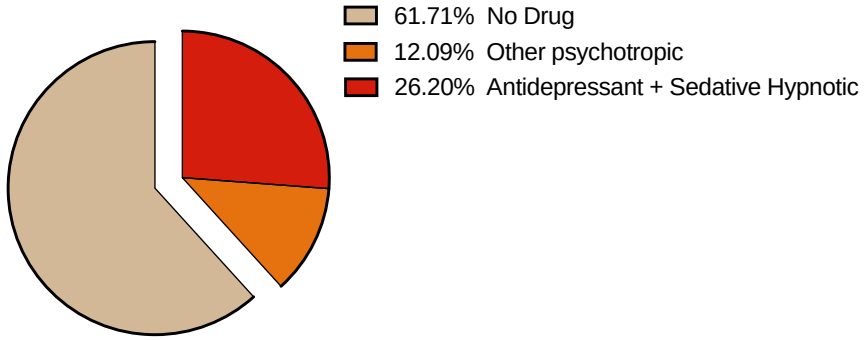


2021 n=453

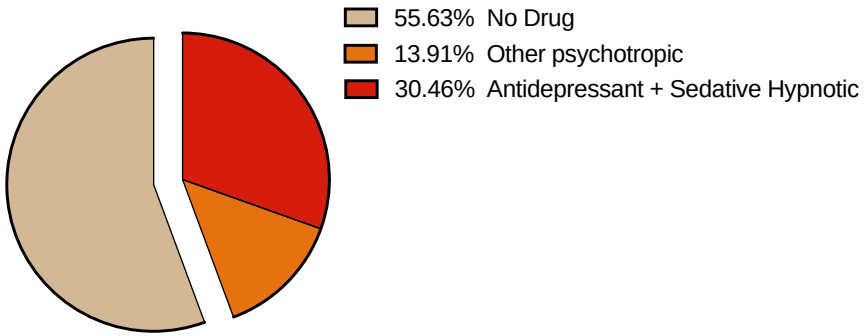
- <u>Overall</u> psychotropic usage did NOT increase over 2019-2021 (p=.46)



2019 n=429

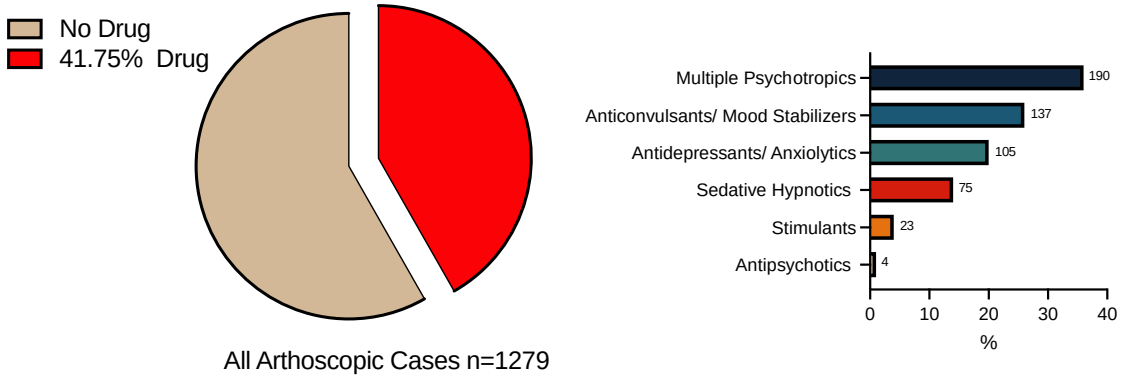


2020 n=397

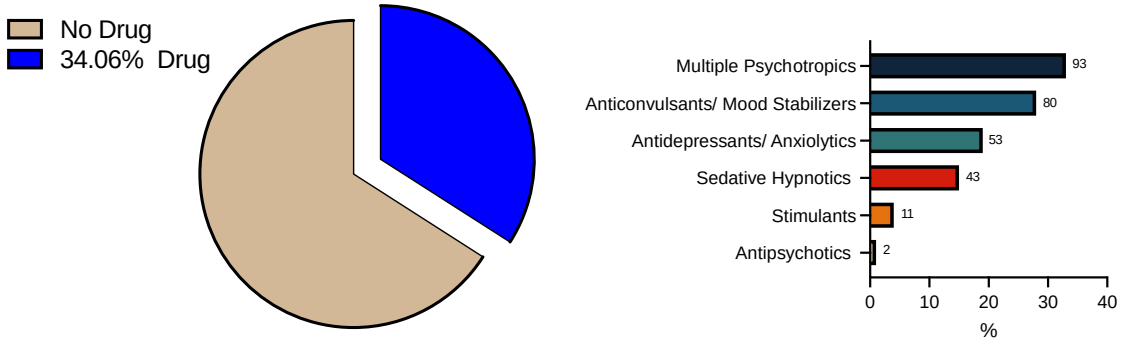


2021 n=453

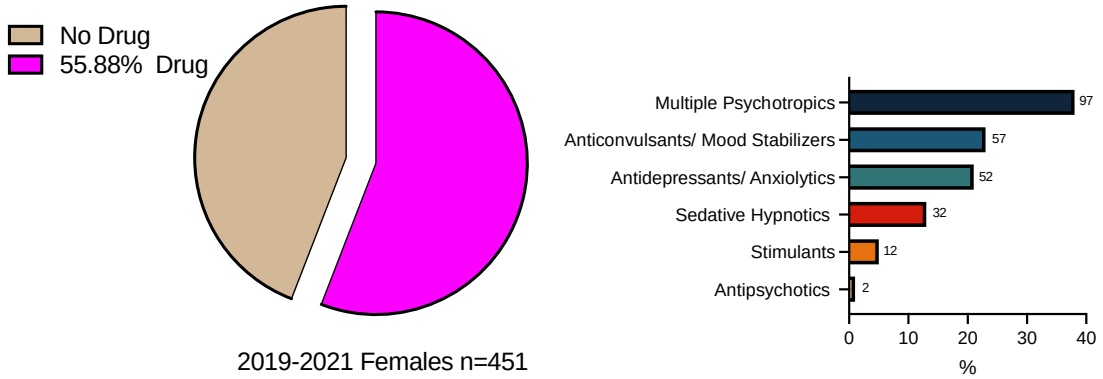
- Antidepressant + Sedative hypnotic utilization trended upward over 2019-2021 (p=.41)



All Arthoscopic Cases n=1279



2019-2021 Males n=828



2019-2021 Females n=451

- Psychotropic drug use was nearly double that of the general population.
- Female patients had significantly higher utilization of these medications compared to males. (p=.0001)

Conclusions

- 41.75% of patients undergoing shoulder arthroscopy between 2019 and 2021 were taking a psychotropic medication.
- Female patients had significantly higher utilization of these medications compared to males. (p=.0001)
- Further research is warranted to determine the relationship between psychotropic drugs and outcomes following shoulder arthroscopy.

Possible Reasons for the Trend

1

Rising Mental Health Issues

Conditions like anxiety, depression, and mood disorders lead to higher rates of psychotropic drug use.

2

Prescribing Practices

Changes in medical practices, such as increased access to healthcare or changes in guidelines for prescribing psychotropic drugs, can lead to higher prescription rates.

3

Multimodal Pain management

In the context of the opioid epidemic, physicians are exploring alternatives in pain management including (NSAIDs), acetaminophen, muscle relaxants, anticonvulsants, and certain antidepressants.

Future Research Directions

Outcome data

Retrospective analysis comparing outcomes between surgical patients taking psychotropic drugs and those with similar risk profiles not taking drugs.

Randomized Trials

Randomized controlled trials comparing the efficacy of psychotropic drugs to other pain management strategies are needed to help guide prescribing.

Societal Implications

Further research into the potential economic and societal implications of the rise of psychotropic drug use in surgical patients is needed.

References

1. Auerbach AD, Vittinghoff E, Maselli J, et al. Perioperative use of selective serotonin reuptake inhibitors and risks for adverse outcomes of surgery. JAMA internal medicine. 2013;173(12):1075-1081.

2. Austin L, Pepe M, Tucker B, et al. Sleep disturbance associated with rotator cuff tear: correction with arthroscopic rotator cuff repair. Am J Sports Med. 2015;43(6):1455-1459.

3. Brody DJ, Gu Q. Antidepressant Use Among Adults: United States, 2015-2018. NCHS Data Brief. 2020(377):1-8.

4. Colvin AC, Egorova N, Harrison AK, Moskowitz A, Flatow EL. National trends in rotator cuff repair. J Bone Joint Surg Am. 2012;94(3):227-233.

5. Cronin KJ, Mair SD, Hawk GS, et al. Increased Health Care Costs and Opioid Use in Patients with Anxiety and Depression Undergoing Rotator Cuff Repair. Arthroscopy. 2020;36(10):2655-2660.

6. DiBartola AC, Cvetanovich GL. Editorial Commentary: Mental Health Comorbidities Are Associated With Increased Cost, Opioid Use, and Inferior Outcomes After Shoulder Rotator Cuff Repair. Arthroscopy. 2020;36(10):2661-2663.

7. Ferreira GE, Abdel-Shaheed C, Underwood M, et al. Efficacy, safety, and tolerability of antidepressants for pain in adults: overview of systematic reviews. BMJ. 2023;380:e072415.

8. Finan PH, Goodin BR, Smith MT. The Association of Sleep and Pain: An Update and a Path Forward. The Journal of Pain. 2013;14(12):1539-1552.

9. Jain NB, Peterson E, Ayers GD, Song A, Kuhn JE. US Geographical Variation in Rates of Shoulder and Knee Arthroscopy and Association With Orthopedist Density. JAMA Netw Open. 2019;2(12):e1917315.

10. Kuo LT, Chen HM, Yu PA, et al. Depression increases the risk of rotator cuff tear and rotator cuff repair surgery: A nationwide population-based study. PLoS One. 2019;14(11):e0225778.

11. Paulose-Ram R, Safran MA, Jonas BS, Gu Q, Orwig D. Trends in psychotropic medication use among U.S. adults. Pharmacoepidemiology and Drug Safety. 2007;16(5):560-570.

12. Pauly NJ, Delcher C, Slavova S, et al. Trends in Gabapentin Prescribing in a Commercially Insured U.S. Adult Population, 2009-2016. J Manag Care Spec Pharm. 2020;26(3):246-252.

13. Soldin OP, Chung SH, Mattison DR. Sex differences in drug disposition. BioMed Research International. 2011;2011.

14. Sramek JJ, Murphy MF, Cutler NR. Sex differences in the psychopharmacological treatment of depression. Dialogues Clin Neurosci. 2016;18(4):447-457.

15. Stedman TL. Stedman's medical dictionary for the health professions and nursing. Illustrated 5th ed. Philadelphia: Lippincott Williams & Wilkins; 2005.

16. Terlizzi EP, Norris T. Mental Health Treatment Among Adults: United States, 2020. NCHS Data Brief. 2021(419):1-8.

17. Terlizzi EP, Schiller JS. Mental Health Treatment Among Adults Aged 18-44: United States, 2019-2021. NCHS Data Brief. 2022(444):1-8.

18. Terlizzi EP, Zablotsky B. Mental Health Treatment Among Adults: United States, 2019. NCHS Data Brief. 2020(380):1-8.

19. Weissman MM, Klerman GL. Sex differences and the epidemiology of depression. Archives of general psychiatry. 1977;34(1):98-111.

20. Woody CA, Ferrari AJ, Siskind DJ, Whiteford HA, Harris MG. A systematic review and meta-regression of the prevalence and incidence of perinatal depression. J Affect Disord. 2017;219:86-92.

21. Wylie JD, Suter T, Potter MQ, Granger EK, Tashjian RZ. Mental Health Has a Stronger Association with Patient-Reported Shoulder Pain and Function Than Tear Size in Patients with Full-Thickness Rotator Cuff Tears. J Bone Joint Surg Am. 2016;98(4):251-256.

22.Youlo ST, Walczak BE, Keene JS. Does the Use of Psychotropic Medication Adversely Affect the Outcomes of Hip Arthroscopy? Am J Sports Med. 2018;46(14):3423-3428.

Thank you!

- Nicholas Gerard ngerard@tulane.edu
- Dr. Mary Mulcahey mary.mulcahey.md@gmail.com

@marykmulcaheymd

@marykmulcaheymd