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Introduction

❖ Opioid-Induced Androgen Deficiency (OPIAD):

- Secondary hypogonadism with opioid use to treat chronic pain
- Opioids indirectly inhibit secretion of gonadotropin-releasing hormone resulting in decreased production of testosterone
- ❖ *Symptoms of OPIAD:*
 - decreased libido, erectile dysfunction, fatigue, hot flashes, muscle hypotrophy, anemia, osteoporosis, depression, mood swings.
- ❖ Early detection of OPIAD may prevent long-term consequences of hypogonadism and adverse effects of prolonged opioid use.
- ❖ OPIAD is dose dependent, formulation and duration dependent, and is reversible (Ali et al., 2016).

Background & Significance

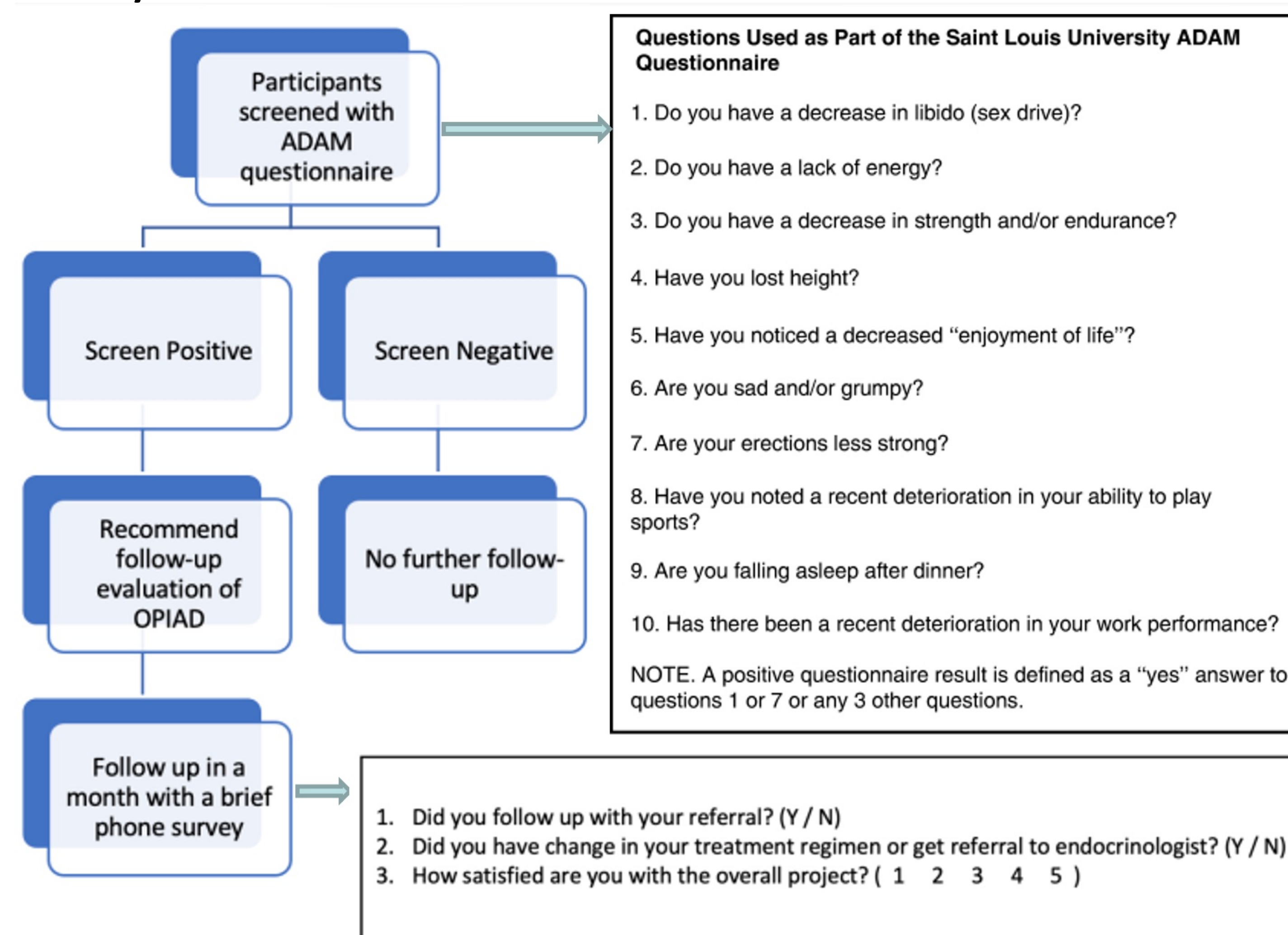
- ❖ 21%-86% of men on chronic opioids have OPIAD (Brooks et al., 2015).
- ❖ Testosterone also has analgesic property by assisting opioid binding to receptors, which helps improve men's pain (Marudhai et al., 2020).
- ❖ Gaps in knowledge among providers about managing patients with androgen deficiency (Morales et al., 2015).
- ❖ The ADAM questionnaire is an effective tool for identifying OPIAD (88% sensitivity and 60% specificity) in males over 40 years of age (Bernie, Scovell, & Ramasamy, 2014; Morley et al., 2000).

Clinical Question

- ❖ How does implementing the ADAM questionnaire increase identification of OPIAD in patients ages 40 to 99 years who are on chronic opioid analgesics?

Methodology

- ❖ **Study Design:** Quality improvement pilot project
- ❖ **Setting:** Primary care clinic specialized in pain management in urban NJ
- ❖ **Study Population:** Men on chronic opioid therapy.
 - **Inclusion criteria:** English speaking; men 40-99; taking opioids for >3 mo.
 - **Exclusion criteria:** Men already on testosterone therapy
 - **Total of 25 men** identified as candidates for project
- ❖ **Study Intervention:**

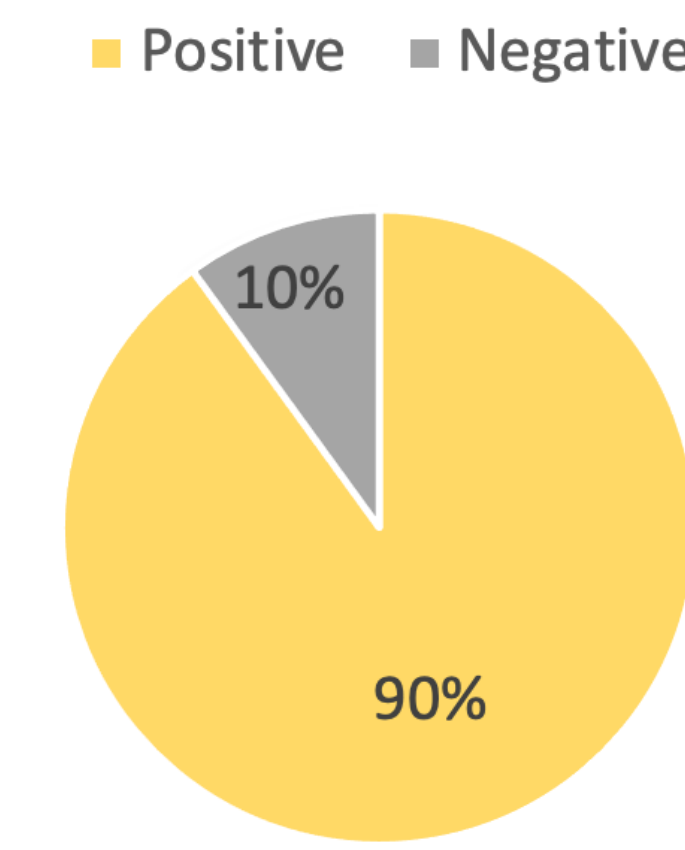


Results:

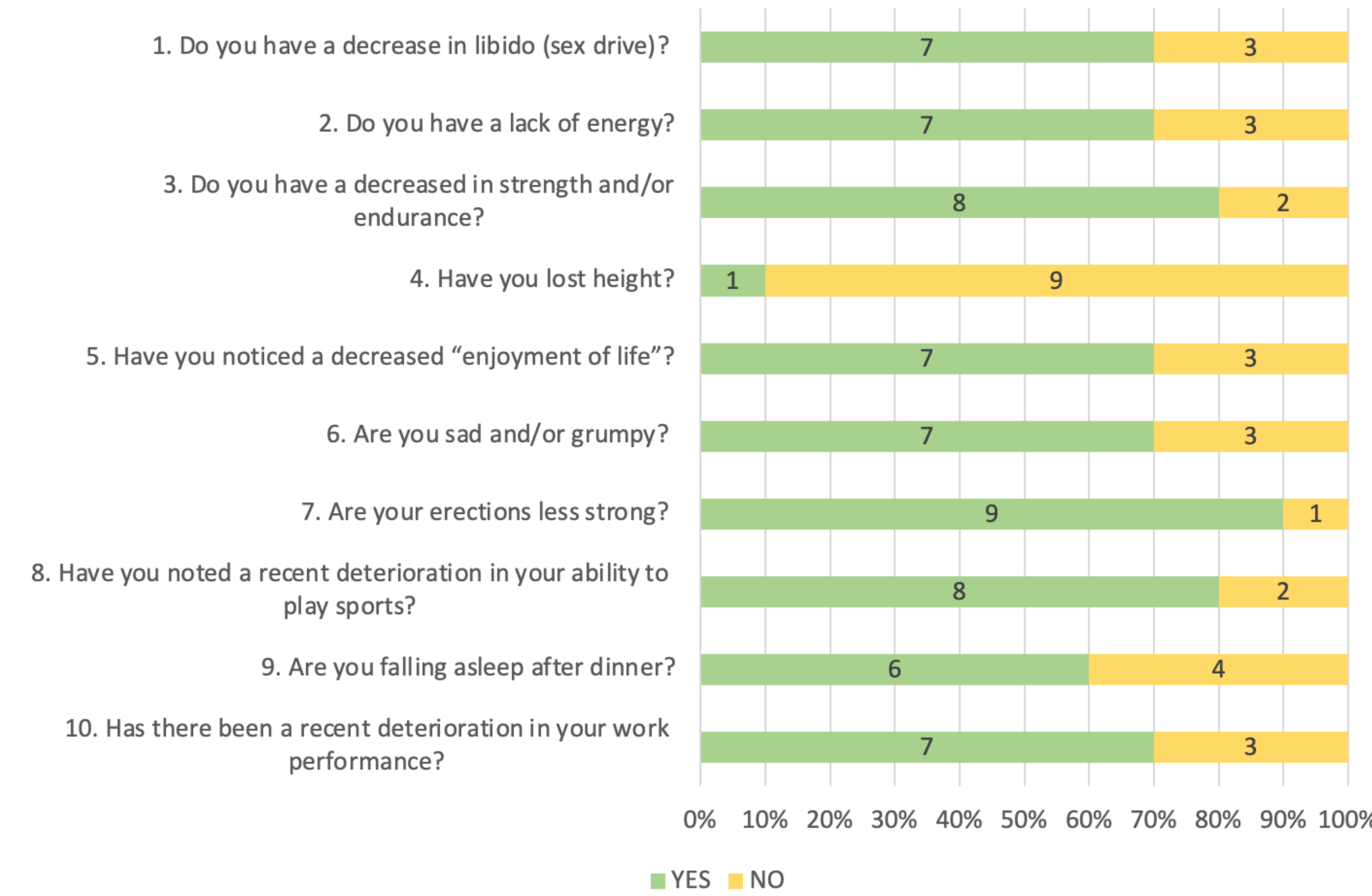
ADAM Questionnaire

- ❖ 10 men participated in project; 9 screened positive & 1 screened negative for androgen deficiency.

ADAM Questionnaire Screening



ADAM Questionnaire Screening



Post-Evaluation Phone Survey

- ❖ 8 men participated in phone survey; 1 men lost to follow-up.

Positive Screened Men—Follow-Up Survey		
Total participants: 8		
	# YES	# NO
1. Did you follow up with your referral?	7 (87.5%)	1 (12.5%)
2. Did you have change in your treatment regimen or get referral to endocrinologist?	2 (33.3%)	6 (66.6%)
3. How satisfied are you with the overall project? (Likert Scale 1-5)	Mean: 4.7 Median: 5 Mode: 5	Mean: 4 Median: 4 Mode: 4

NP Post-Evaluation Survey

- ❖ The NP felt questions 4 and 9 on ADAM questionnaire, about losing height and falling asleep after dinner, were irrelevant to OPIAD.

How effective was the project?	(1 2 3 4 5)
Did screening result effect your plan of care for the patients?	(1 2 3 4 5)
Do you think it is important to screen for OPIAD in chronic pain patients on long term opioids therapy?	(1 2 3 4 5)
How efficient was the ADAM questionnaire in screening OPIAD?	(1 2 3 4 5)
How likely are you to continue the screening?	(1 2 3 4 5)
How satisfied are you with the overall project?	(1 2 3 4 5)
Please provide any feedback or concerns for improvement of the project.	

Discussion

- ❖ 90% of participants screened positive on ADAM, which was higher than reported in the literature.
 - Suggests a significant number of men on chronic opioids may need further evaluation for OPIAD & need for routine screening
 - Patients who screened positive showed interest in identifying impact of chronic opioids to their testosterone levels.
- ❖ Among participants who followed-up, >25% reported having a change in pain regimen or received referral to endocrinologist.
- ❖ NP at project site was very satisfied with the project's effect.
- ❖ The NP suggested screening all men without age parameters to determine androgen deficiency in younger men on chronic opioids to provide improved quality of care.

Study Limitations

- ❖ Availability of the provider on site may have skewed distribution of data due to convenience of having immediate follow-up.
- ❖ Some positive screened participants were hesitant to follow up as they were resistant and opposed to having a change in their opioid treatment regimen.
- ❖ Short implementation time may have skewed project conclusion because time was needed for patients to follow up with referrals.

Recommendations

- ❖ Use PDSA cycle to continue to replicate project in multiple locations on greater scale with larger population and extended duration.
- ❖ Identify the medication type, daily dosage, and consumption duration for participants who screened positive on the ADAM screening.

Study Implications

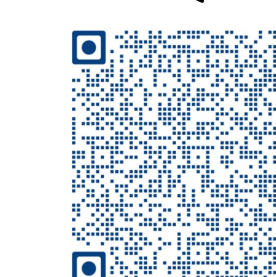
- ❖ **Practice**
 - Providers should screen for OPIAD using ADAM questionnaire.
 - Education on early screening of OPIAD is needed.
- ❖ **Healthcare Policy**
 - National & International hypogonadism guidelines should be unified.
- ❖ **Economic Cost Benefit**
 - Early identification of OPIAD may reduce costs spent treating effects of secondary hypogonadism.
- ❖ **Improvement in Quality of Life**
 - Early screening and recognition can improve patient's overall health, life expectancy and quality of life.

Conclusions

- ❖ This pilot project showed a high prevalence of androgen deficiency in men on chronic use of opioids at this clinical site.
- ❖ Results indicate usefulness of the ADAM questionnaire in identifying OPIAD in men on chronic opioids.
- ❖ Integrating the ADAM questionnaire enables detection and treatment of OPIAD.
- ❖ Prompt identification of OPIAD can enhance quality of care.

References

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