

Sport Specialization, Sleep, Fatigue, and Psychosocial Ratings: Do highly specialized athletes differ from their less specialized peers?

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No disclosures

Background:

- Sports are beneficial
- More kids are playing organized sports
- There is increased pressure on youth to specialize in a single sport



Background:

- Sport Specialization (SS)
- SS literature has centered on increased risk for overuse injuries, while the psychosocial impacts are less well studied

Jayanthi 3 Point Scale

(1) Can you pick a main sport?

(2) Do you train for more than 8 months per year for your main sport?

(3) Did you quit other sports to focus on a main sport?

Purpose:

To determine if sport specialization level, past injuries, or other demographic factors are associated with psychosocial ratings in high school athletes

Methods:

- **Population:** Healthy high school athletes in Metro Denver, CO attending pre-participation physicals (N=186)
- **Questionnaires:**
 - 1) Injury history
 - 2) Pittsburgh Sleep Quality Index (PSQI)
 - 3) Patient Reported Outcomes Measurement Information System (PROMIS) fatigue, anxiety, depressive symptom rating scales
 - 4) Jayanthi 3 Point Scale

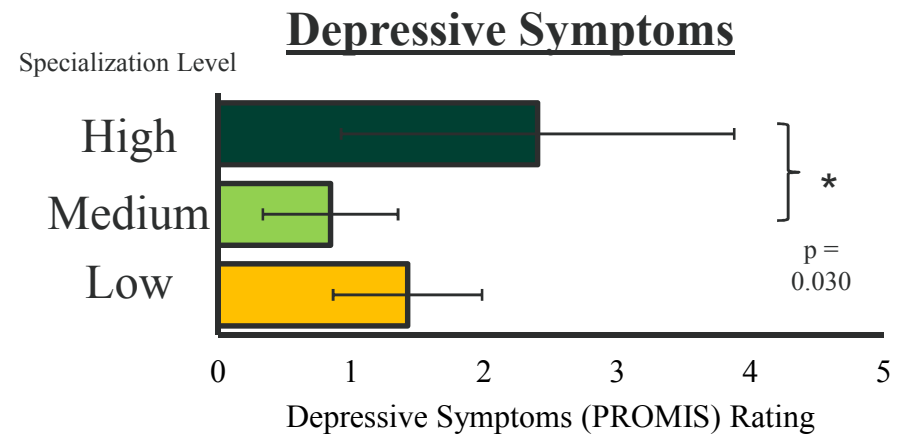
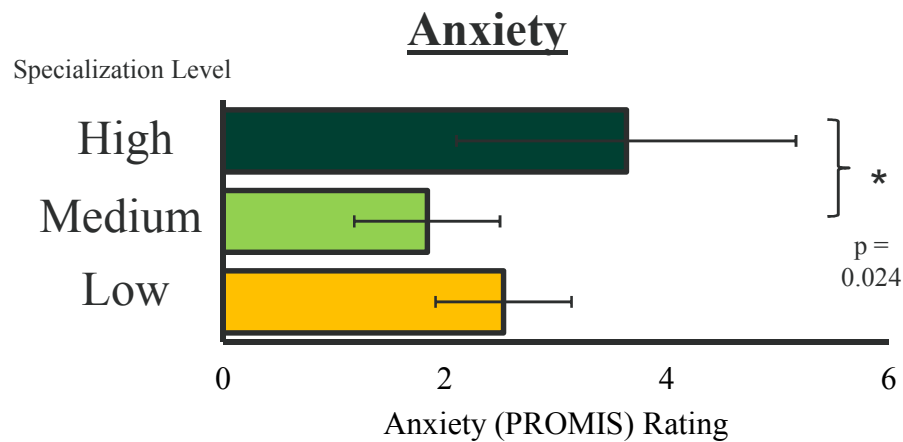
Results: Demographics

Variable	Specialization Level			P value
	Low (n = 92)	Medium (n=64)	High (n=30)	
Age (years)	15.3 (2.0)	15.3 (1.3)	15.7 (1.1)	0.38
Sex (female)	46 (50%)	30 (47%)	17 (57%)	0.68
Hours/week spent training	12.1 (5.1)	11.6 (5.0)	12.5 (4.4)	0.70
Level of competition (varsity v. non-varsity)	27 (29%)	26 (41%)	15 (50%)	0.09
Height (cm)	169.4 (8.9)	169.6 (9.0)	169.5 (8.4)	0.99
Weight (kg)	62.7 (15.9)	65.1 (13.4)	62.7 (20.5)	0.62

Results: Injury History

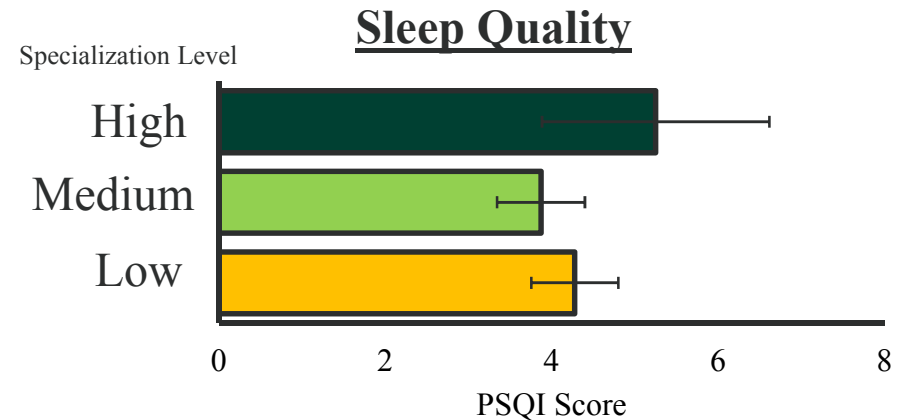
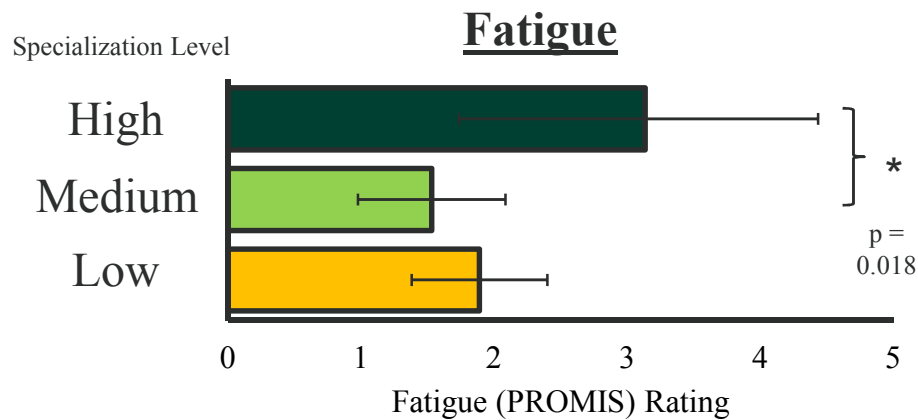
Variable	Specialization level			P Value
	Low	Medium	High	
History of time-loss bone, muscle, ligament or tendon injury	35 (38%)	25 (40%)	13 (43%)	0.88
History of stress fracture	6 (7%)	2 (3%)	3 (10%)	0.41
History of concussion	20 (22%)	14 (23%)	3 (10%)	0.31

Results: Anxiety and Depressive Symptoms



High school athletes who were highly specialized reported higher anxiety and depressive symptom ratings compared to medium specialized athletes.

Results: Sleep and Fatigue



High school athletes who were highly specialized reported higher fatigue ratings compared to medium specialized athletes.

Discussion:

- **Summary:**

Highly specialized HS athletes report higher anxiety and depressive symptoms as well as higher fatigue ratings compared to less specialized peers

- **Limitations of study:**

Cross sectional study, sample size

Future Directions:

- Repeat the study comparing club sport athletes and high school athletes
- Prospective observational study tracking psychosocial ratings as athletes specialize over time

Take Home Points:

- There is more to an athlete's performance and well being than injuries!
 - SS may have adverse psychosocial effects for young athletes
- It is important to counsel young athletes and their parents on the possible drawbacks to SS

Thank you to my amazing research team!

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Questions?

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Additional Slides

Sport Specialization Questionnaire

3 point
Jayanthi
Scale

<u>Please circle the best response:</u>				
Do you play club sports?	Yes	No		
If yes: which sport(s)?				
The time I spend participating in sports is...	Not enough	The right amount	Too much	
Can you identify a primary sport that you play?	Yes	No		
If yes: which sport?				
Do you consider your primary sport more important than other sports	Yes	No	I do not have a primary sport	
Do you play or train for a single sport more than 8 months a year?	Yes	No		
Have you ever quit a sport to focus on a single sport?	Yes	No		
Youth in my sport play in too many games/competitions before entering college.	Strongly agree	Agree	Disagree	Strongly disagree
I wish I could spend more time participating in other sports.	Strongly agree	Agree	Disagree	Strongly disagree

Participation
questions

PROMIS Anxiety & Depressive Symptom

Short Forms

<u>Anxiety:</u> In the past 7 days...	Never	Almost Never	Sometimes	Often	Almost Always
I felt like something awful might happen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I felt nervous	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I felt worried	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I worried when I was home	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Depressive symptoms</u> In the past 7 days...	Never	Almost Never	Sometimes	Often	Almost Always
I felt everything in my life went wrong	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I felt lonely	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I felt sad	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
It was hard for me to have fun	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PROMIS Fatigue Short Form

<u>Fatigue</u> In the past 7 days...	Never	Almost Never	Sometimes	Often	Almost Always
Being tired made it hard for me to keep up with my schoolwork	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I got tired easily	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I was too tired to do sports or exercise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I was too tired to enjoy the things I like to do	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Pittsburgh Sleep Quality Index (PSQI)

Instructions: The following questions relate to your usual sleep habits during the past month only. Your answers should indicate the most accurate reply for the majority of days and nights in the past month. **Please answer all questions.**

1. During the past month, what time have you usually gone to bed at night? _____
2. During the past month, how long (in minutes) has it usually taken you to fall asleep each night? _____
3. During the past month, what time have you usually gotten up in the morning? _____
4. During the past month, how many hours of actual sleep did you get at night? (This may be different than the number of hours you spent in bed.) _____

5. During the <u>past month</u> , how often have you had trouble sleeping because you...	Not during the past month	Less than once a week	Once or twice a week	Three or more times a week
a. Cannot get to sleep within 30 minutes				
b. Wake up in the middle of the night or early morning				
c. Have to get up to use the bathroom				
d. Cannot breathe comfortably				
e. Cough or snore loudly				
f. Feel too cold				
g. Feel too hot				
h. Have bad dreams				
i. Have pain				
j. Other reason(s), please describe:				
6. During the past month, how often have you taken medicine to help you sleep (prescribed or "over the counter")?				
7. During the past month, how often have you had trouble staying awake while driving, eating meals, or engaging in social activity?				
	No problem at all	Only a very slight problem	Somewhat of a problem	A very big problem
8. During the past month, how much of a problem has it been for you to keep up enough enthusiasm to get things done?				
	Very good	Fairly good	Fairly bad	Very bad
9. During the past month, how would you rate your sleep quality overall?				

Results: Psychosocial Ratings

Variable	Specialization level			P-Value
	Low	Medium	High	
PSQI Rating	4.3 (2.5)	3.9 (2.1)	5.3 (3.5)	0.06
PROMIS Fatigue Rating	1.9 (2.4)	1.5 (2.2)	3.1 (3.7)	0.02*
PROMIS Anxiety Rating	2.5 (2.9)	1.8 (2.6)	3.6 (4.1)	0.03*
PROMIS Depressive Symptom Rating	1.4 (2.7)	0.8 (2.0)	2.4 (4.0)	0.04*

Results: Perceptions of Participation

Variable	Specialization Level			P-Value
	Low	Medium	High	
Agree/strongly agree: Youth athletes play too many games/ competitions	17 (19%)	12 (20%)	10 (34%)	0.21
Agree/strongly agree: Wish they could spend more time participating in other sports	39 (43%)	24 (38%)	11 (37%)	0.79