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Impact of passion to sport specialization, injury, and burnout in NCAA Division 1 College Athletes

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Disclosures:

None pertaining to the
presented project.

- **Jeffrey Randall**

- Spinal Simplicity, LLC => Stock or stock Options
- Johnson & Johnson => Stock or stock Options
- Stryker => Stock or stock Options

- **Bryan Vopat**

- Stryker Corporation => Associated Research Funding (different project)
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- **Lisa Vopat**

- Altior => Stock or stock Options
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- **Megan Wolf**

- Arthrex Inc. => Grant and Education
- Southtech Orthopedics => Education
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- Medtronic => Employee => Stock or stock Options



Introduction

- Throughout the United States, sports participation^{1, 19} and early specialization^{2, 4} have been increasing at a significant rate.
 - This shift to early high volume training and sport specialization may play a role in increased risks of overuse/overload injuries or acute injuries requiring surgery¹¹⁻¹³ as well as detrimental effects on the athletes' psychological and social well-being.^{16, 19, 21}
- Limited research has been conducted how another factor, “passion”, may influence risk of injury and/or psychological well-being.



Introduction (cont.)

- The Dualistic Model of Passion (DMP) defines “passion as a strong inclination toward an activity that people like, find important, invest time and energy into, and which is part of their identity.”^{30, 31}
 - The DMP further divides passion into two states: harmonious passion and obsessive passion.³¹
 - Athletes experiencing harmonious passion may describe that their involvement in their sport is congruent with who they are as a person.²⁷
 - Athletes with obsessive passion have greater external motivations driving involvement with their sport.²⁷



Introduction (cont.)

- The purpose of this study is to identify the passion scores of current NCAA Division I student-athletes and describe the correlation of passion and burnout in athletes as well as to define the potential relationship of passion with athlete injury.



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Methods

- IRB Approval:
 - Ethical approval was obtained via a Flexible IRB Review by the KUMC Human Research Protection Program under IRB# STUDY00144251.
- Survey:
 - Distributed and its data was collected and managed using REDCap electronic data capture tools hosted at the primary institution^{14, 15}
 - The validated Passion Scale was used to assess harmonious and obsessive passion for each athlete in a respective sport.^{20, 27, 30, 31}
 - The validated Athlete Burnout Questionnaire was used measures emotional/physical exhaustion, reduced sense of accomplishment, and sport devaluation utilizing a 5-point Likert scale.^{17, 22}
- Statistical Analysis:
 - Chi-square test was utilized for categorical variable analysis while t-test was used to analyze continuous variables
 - $P < .05$ was considered statistically significant.



Results

- A total of 283 athletes were surveyed (M=102, F=181).
- The majority of surveyed athletes (50.2%) specialized in a sport between 12-18 years old.
- 58.3% of athletes reported a history of significant injury while 54.8% reported an overuse injury.



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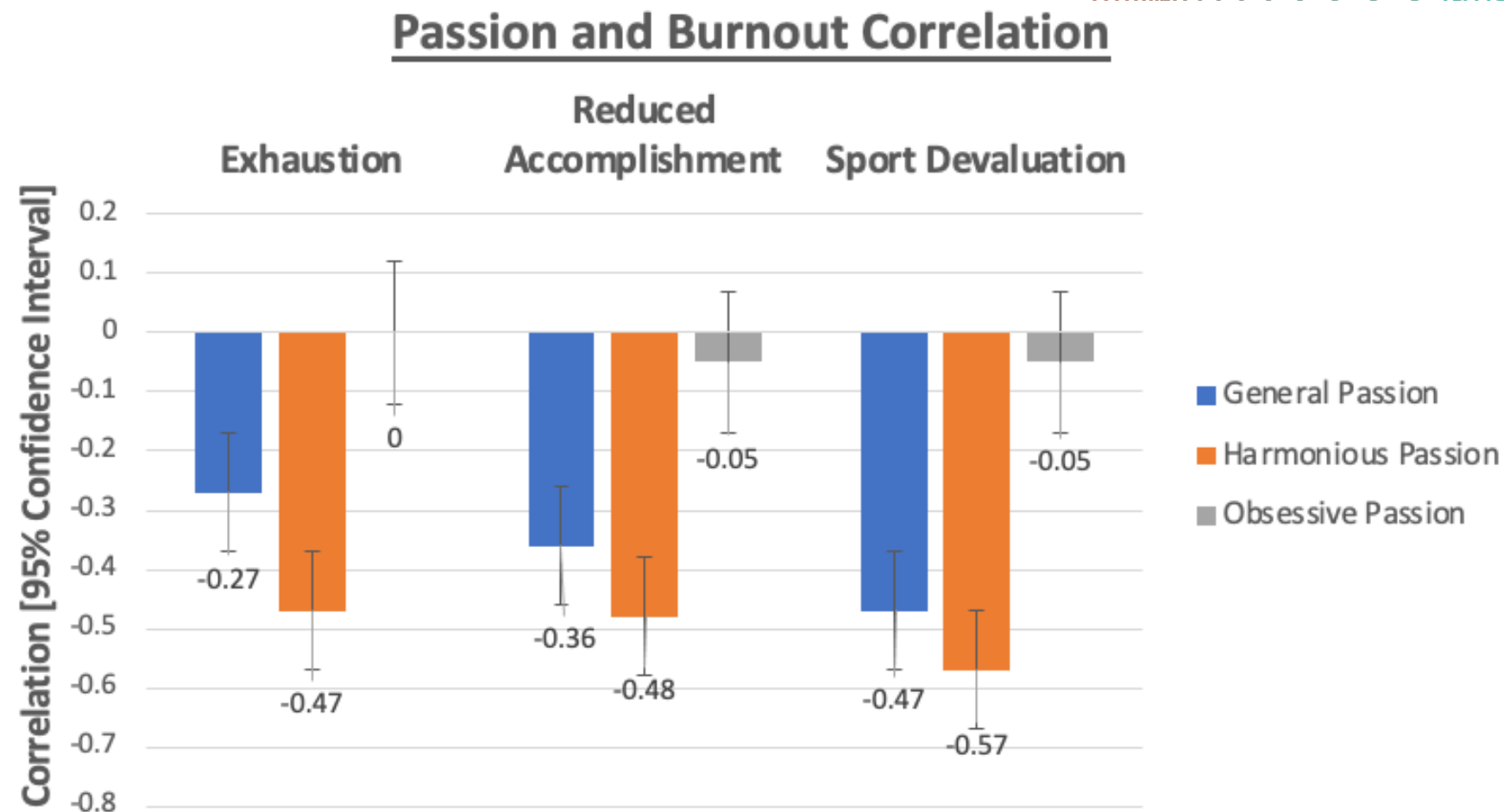
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Table 1. Patient Demographics

	Males (n= 102)	Females (n= 181)	Total (N=283)
Age at Survey - y			
Median	20	19	20
Range	18-23	18-30	18-30
Sport of Participation- n (%)			
Cross-Country/Track & Field	29 (28.4)	45 (24.9)	74 (26.1)
Baseball/Softball	19 (18.6)	14 (7.7)	33 (11.7)
Basketball	2 (2.0)	3 (1.7)	5 (1.8)
Rowing	-	93 (51.4)	93 (32.9)
Football	38 (37.3)	-	38 (13.4)
Volleyball	-	5 (2.8)	5 (1.8)
Other	14 (13.7)	21 (11.6)	35 (12.4)
Multi-Sport Athlete- n (%)	1 (1.0)	2 (1.1)	3 (1.1)
Year of NCAA Eligibility- n (%)			
First	29 (28.4)	61 (33.7)	90 (31.8)
Second	23 (22.5)	54 (29.8)	77 (27.2)
Third	23 (22.5)	31 (17.1)	54 (19.1)
Fourth	16 (15.7)	31 (17.1)	47 (16.6)
Fifth	11 (10.8)	3 (1.7)	14 (4.9)
Sixth	-	1 (0.6)	1 (0.4)
Age of Beginning Specialization- n (%)			
Before 12 Years Old	8 (7.8)	25 (13.8)	33 (11.7)
Between 12 and 18 Years Old	54 (52.9)	88 (48.6)	142 (50.2)
18+ Years Old (In College)	30 (29.4)	56 (30.9)	86 (30.4)
Unknown or Did Not Answer	9 (8.8)	12 (6.6)	21 (7.4)
Never	1 (1.0)	-	1 (0.4)
Injury- n (%)			
History of Overuse Injury ¹	49 (48.0)	106 (58.6)	155 (54.8)
History of Significant Injury	62 (60.7)	103 (56.9)	165 (58.3)

Results (cont.)

- Higher number of years specialized ($p=.0494$) was significantly associated with lower general passion
- Both general passion ($p<.01$) and harmonious passion ($p<.01$) were negatively correlated with lower burnout in all three burnout sub-scores.
 - Therefore, a lower general passion and harmonious passion were correlated with a higher rate of burnout in all three sub-scores.



Discussion

- Our study showed that general passion and harmonious passion have a statistical correlation which decreases exhaustion, feelings of reduced accomplishment, and a sense of sport devaluation, while obsessive passion is not correlated with any burnout marker.
 - What factors drive burnout and increase the risk of injury?
 - We hypothesize athletes with obsessive passion are more diligent with their preparation and participate in practice and training in a rigidly, internally controlled way as described by Szabo et al.²⁸



Discussion (cont.)

- Multiple previous studies have found a relationship between harmonious passion and burnout but not obsessive passion and burnout (similar to our results); however, these studies only analyzed nurses, teachers, and academy soccer players.^{6, 8, 32}
- Previous studies that analyzed professional dancers²³ as well as in recreational runners¹⁰ also discovered a lower harmonious passion score was associated with more overuse injuries while an obsessive passion score did not statistically correlate with injury (also similar to our results).



Conclusion

- Athletes with higher general passion and harmonious passion scores were found to have lower levels of burnout in terms of exhaustion, reduced accomplishment, and sport devaluation.
- Lower harmonious scores correlated with high overuse injuries.
- Higher obsessive passion was not correlated with an increase or decrease in burnout.
- Future research should focus on why and how passion and burnout cause these effects.



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