

# Burnout in Sport Specializers Versus Samplers: An Evidence-to-Practice Review

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## ABSTRACT

The prevalence of sport specialization is a common concern in contemporary youth sports and has been linked to potential negative physical and psychological effects for developing athletes. While the evidence regarding negative physical effects, such as overuse injury, are consistent in the literature, the psychosocial outcomes are unclear due to the lack of published studies on the topic. Specialization is thought to lead to added stress, which may affect an athlete's mental health, whereas athletes who sample multiple sports are believed to have a healthier psychosocial experience. Burnout is characterized as physical and emotional exhaustion, sport devaluation and a reduced sense of accomplishment in athletics. This guiding review evaluates the evidence regarding burnout levels between specializers and samplers. Two of the articles included in the review directly assessed burnout in samplers vs specializers and noted inconsistencies in higher burnout rates. The six other articles studied burnout only in specializers by indirectly assessing burnout through perfectionism, fear of failure, motivation, and drop out. The comparisons of these variables illustrated heightened burnout in athletes who specialize. The results from these studies provide moderate evidence for recommendations that athletes should delay specializing in one sport.

**Content Focus:** Health Care Competency

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## ORIGINAL REFERENCE

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## SUMMARY

### CLINICAL PROBLEM AND QUESTION

Sports specialization is generally defined as year-round intensive training in a single sport at the exclusion of other sports,<sup>1</sup> while athletes who participate in multiple sports are often labeled as sport samplers.<sup>2</sup> There are concerns among healthcare providers that athletes who specialize early have increased potential for physical and psychological negative outcomes. While the link between sport specialization and negative physical outcomes (e.g., rates of overuse injuries) have been well-established,<sup>3</sup> the relationships to psychosocial outcomes remain largely unclear. It is postulated that sport specialization introduces athletes to additional stressors (e.g., increased time demands, low quantity, quality sleep, and drive for elite status) that can negatively affect the mental health of these athletes,<sup>4</sup> including loss of passion, burnout, and development of a unidimensional identity.<sup>5</sup>

Burnout refers to physical, emotional, and psychological withdrawal from sports that were once found enjoyable due to over training and chronic stress.<sup>6,7</sup> The increase in training volume often associated with sport specialization may result in burnout, which may decrease an athlete's likelihood to have the motivation or drive required to be successful in their sport.<sup>8</sup> Unfortunately, there is very little published empirical evidence that directly correlates sport specializers and non-specializers with levels of burnout.<sup>9,10</sup> Therefore, the purpose of this guiding meta-analysis and systematic review was to assess burnout among youth athletes who specialize compared to those who sample.

## **SUMMARY OF LITERATURE**

To answer the clinical question, a literature search was conducted using various electronic databases, including PubMed, CINAHL, SportDiscus, and PsychInfo. Search terms included sport specialization; adolescent burnout; sport burnout; athlete burnout questionnaire to find relevant titles and abstracts to be screened. Full-text articles that passed the initial screening were assessed for eligibility using the following criteria: English language, adolescent athlete participants between 12 and 18 years of age, classification of samplers or specializers, and burnout was measured using the Athlete Burnout Questionnaire (ABQ). For data extraction the authors were primarily interested in the results of the ABQ. Patient demographics, sport demographics and specialization status were also extracted from each study. Sport specialization status was determined based on the Jayanthi scale which classifies athletes as “high, moderate, or low” specialized based on whether an individual has a main sport, competes for more than eight months of the year, and competes in the one sport at the exclusion of other sports.<sup>1</sup> In the meta-analysis all levels of specialization were simply grouped as specializers. Additionally, athletes who were enrolled in schools or academies with a sport focus, engaged in their sport at least 8 months per year and participated in a single sport were included in the sport specializer group. The authors of the systematic review defined sport sampler as athletes who participate in multiple sports.<sup>2</sup> Participants that were grouped into the sampler group participated in more than 1 sport per year or did not meet all 3 criteria of specialization.

## **SUMMARY OF OUTCOMES**

The primary outcome measure assessed in this systematic review and meta-analysis was burnout, assessed through the ABQ. The ABQ has been shown to have acceptable construct validity across a number of athletic populations in similar ages.<sup>7</sup> The ABQ measures three dimensions of burnout: emotional-physical exhaustion, reduced sense of accomplishment, and sport devaluation with five items included for each dimension. Each dimension is measured on a 5-point Likert scale (1 almost never to 5 almost always) and an average response score is calculated for each dimension. Athletes completing the ABQ are presented with statements about their sports and then asked to rate how often they feel that way. The ABQ is scored with a global score of the 15 items, as well as three dimension-specific subscale scores, that include 5 items for each of the respective subscales. Higher scores on the ABQ denote higher levels of burnout and lower scores on the ABQ denote lower levels of burnout.

## **FINDINGS AND CLINICAL IMPLICATIONS**

There were seven cross-sectional studies and one longitudinal prospective survey study included in the meta-analysis. Of the eight included studies, only two directly compared specializers vs samplers in regards to burnout and reported inconsistent findings. Specifically, levels of burnout were present in both samplers and specializers; however the burnout scores were not significantly different among female non-elite youth soccer, volleyball, and tennis athletes.<sup>10</sup> In contrast, another study reported higher levels of physical and emotional exhaustion and burnout among swimmers, gymnasts, and divers who specialized in their respective

sport.<sup>11</sup> The other six studies assessed burnout only among specializers, directly or indirectly through the use of additional outcome measures, such as fear of failure, motivation, self-worth, and perfectionism. One study found no evidence of a link between early specialization and increased burnout and drop out,<sup>9</sup> another noted a higher burnout profile was indicative of ceasing sport participation,<sup>12</sup> and a third study identified athletes with higher symptoms of burnout tended to detach from their sport.<sup>13</sup> Of the studies that used indirect additional outcome measures, the outcome measures were chosen based on their relationship with burnout. Specifically, fear of failure was related to burnout and psychological stress in one study.<sup>14</sup> Amotivation and intrinsic motivation were found to be mediators of perfectionism and burnout symptoms in another study.<sup>15</sup> Lastly, self-worth and perfectionism were noted to increase one's vulnerability to burnout.<sup>16</sup>

Collectively, the majority of participants were assigned to the sport specialization group (95.9%, n=1371) and 4.1% (n=58) to the sport sampling group. Almost all (99.5%, n=1422) participants completed the ABQ. The primary meta-analysis findings of the guiding review noted that specialized athletes reported higher levels of burnout on the ABQ compared to samplers. Specifically, all three ABQ dimensions were significantly higher in the specializers, who had a greater sense of reduced accomplishment [ $2.51 \pm 0.66$  vs  $1.64 \pm 0.60$ ,  $\Delta 0.87$  (95%CI: 0.67-1.08),  $p < .01$ ], greater exhaustion [ $2.44 \pm 0.79$  vs  $1.99 \pm 0.71$ ,  $\Delta 0.46$  (95%CI: 0.24-0.68),  $p < .01$ ], and more devaluation ( $1.82 \pm 0.54$  vs  $1.40 \pm 0.54$ ,  $\Delta 0.41$  (95%CI: 0.22-0.60)  $p < .01$ ). This information is clinically meaningful in the sense that it gives clinicians the awareness and evidence that there is an increased rate of burnout within specialized athletes, which can then be translated into practical settings in which athletes specialize.

Of note is that the highest mean ABQ score in the meta-analysis was 2.51, among the specializers for the *reduced sense of accomplishment* subscale. However, the ABQ is scored out of five for each section, suggesting that while there were significant group differences, even the specializers were not reaching the ceiling of the instrument. This finding aligns with previous studies in this area which have commonly found athletes to exhibit burnout scores on the lower half of the scales' range.<sup>17</sup> Practical interpretation of these scores remains a challenge in using this measure, as no explicit cutoffs have been provided to precisely classify an athlete's severity of burnout.<sup>18</sup> Therefore, athletes have tended to be classified as more "at risk" of burnout or "more/less" burned out than others, rather than classified as high, moderate, or low severity of burnout.<sup>18</sup>

Based on these prior studies, the scores calculated through the meta-analysis are indicative of relatively lower burnout across all domains in the samplers in comparison to the specializers. While this means that specializers are more "at risk" of being burned out, since neither group reached levels that exceeded the midpoint of the scale, it appears that athletes who specialize are still able to maintain a relatively positive sport experience.

While the findings of the guiding manuscript provide insight into the relationship between sports specialization and burnout, there are several limitations of the meta-analysis that should be considered. First, only two of the eight included studies had a sport sampler group, thus the distribution of athletes among the groups was skewed, with less than 5% of the total sample included in the sport sampler group and only those two studies had direct comparisons. Furthermore, only three studies directly assessed burnout, while the other five included secondary measures that were compared to burnout and specialization. Lastly, the athlete participants across the included studies varied in geographic location, sport, and level of competition and ranged from elite academy athletes to non-elite youth athletes.

## CLINICAL BOTTOM LINE

Evidence from this review suggests that athletes who specialize in their sport are likely to score higher on each of the three ABQ subscales compared to sport samplers, suggesting higher levels of burnout within athletes who specialize. It is noted that the values were only slightly higher, but did not hit the midpoint of the scale. Further guidance on interpreting the meaning of ABQ scores would aid in practical application. These findings provide a degree of evidence to support the notions regarding the potential psychosocial implications of sports specialization and the recommendations put forth by numerous medical associations to limit or delay specializing in one sport.<sup>5,6,19,20</sup>

Athletic trainers and other healthcare professionals providing care to youth and adolescent athletes should ask questions regarding sport specialization practices during pre-participation physical examinations and during injury evaluations. These discussions should include questions regarding training load, volume, and intensity, rest days, time off throughout the year, and include patient-report outcome measures, such as the ABQ to assess psychosocial constructs that may impact sport participation and recovery following injury. Including questions regarding burnout or symptoms of burnout as part of the pre-participation physical examination or secondary to an injury should be included in clinical practice. Furthermore, athletic trainers and other clinicians can use the findings of the guiding manuscript to educate patients and other stakeholders and advocate for the inclusion of safe sport recommendations by schools and leagues. Specifically, education and advocacy around this issue should include recommendations to have two days off from sport per week, participate in sport-related activity for fewer hours per week than their age, and spend at least one month away from organized sport each year.<sup>20</sup> These recommendations, along with encouragement to be a sport sampler, can assist athletes with the needed physical and mental recovery to reduce the risks of overuse injury and burnout risks.<sup>20</sup> Lastly, clinicians should be knowledgeable regarding the signs and symptoms of burnout (Table 1) to be able to appropriately recognize athletes at risk and assist in proper treatment, management, and referral.

**Table 1:** Physical and mental signs and symptoms of burnout

| <u>Physical</u>                               | <u>Mental</u>   | <u>Athletic</u>  |
|---|---|--|
| Changes in eating                             | Problems with concentration, memory, or ability       | Leveling off or diminished performance or conditioning |
| Unable to complete tasks                      | Feeling overly worried                                | Higher resting heart rate and/or blood pressure        |
| Sensitivity to sound, sight, smell, and touch | Feeling sad, empty, hopeless, or worthless            | Cognitive issues                                       |
| Irritability and restlessness                 | Loss of interest in activities you previously enjoyed | Illnesses as result of suppressed immune system        |
| Changes in energy levels and sleep patterns   | Withdrawn or disconnected from others                 | Emotional issues                                       |
|   | Feeling like your brain is playing tricks on you      | Low self esteem  |
|   | Loss of interest in activities                        | Increased anxiety and depression                       |

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