# Specialized Youth Sports and Its Impact on the Mental Health of Collegiate-Aspiring Athletes

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## ABSTRACT

Specialized childhood sports have become increasingly common through family and coach encouragement, raising concerns about how higher expectations and pressure may affect adolescent mental health. This study examines how early sport specialization influences stress, burnout, and emotional well-being among high school athletes.

An exploratory, non-experimental correlational design was used, collecting data from 78 athletes through a researcher-developed survey with reference to the Athlete Burnout Questionnaire. Respondents were categorized by childhood specialization status and collegiate intentions for a direct comparison of mental health outcomes. Quantitative results showed that specialized athletes intending to compete collegiately reported higher composite stress scores (M = 3.6/5) compared to non-specialized peers (M = 2.3/5). Additionally, specialized collegiate-intended athletes have a higher current sport-related stress (M = 6.4/10 vs. 4.8/10). Burnout and emotional exhaustion were also more prevalent among specialized athletes. Thematic coding was used to analyze qualitative data, with 50% of respondents noting that performance pressure and self-expectations were their primary source of childhood stress, 14.1% responding with fear of failure, and 16.7% stating their stress came from parents or coaches.

Overall, results illustrate a clear correlation between early sport specialization and increased stress and burnout among adolescent athletes. This study contributes to existing literature by distinguishing stress and burnout as separate outcomes and by focusing on the understudied demographic of collegiate-aspiring athletes. The results highlight the importance of managing athlete pressure, promoting mental recovery, and recognizing signs of emotional exhaustion within specialized youth sport environments.

## INTRODUCTION

Globally, “one in seven 10-19-year-olds experiences a mental disorder”, with depression, anxiety, and behavioral disorders being the leading causes of illness among adolescents (WHO). Considering the athletic environments that adolescents spend a substantial amount of time in, especially in specialized or structured programs, mental health has a large impact on their emotional well-being. In literature, the term

'specialized sports', or specialization, refers to year-round training in a single sport, often to the exclusion of other sports or activities. Specialized childhood sports are becoming increasingly common, especially as families and coaches encourage adolescents to specialize early to improve their abilities. This phenomenon raises issues about how higher expectations and pressure from adolescents' surrounding environments may be associated with mental health concerns, like stress and performance anxiety, burnout, motivation struggles, and identity issues. However, the psychological effects of specialization are not necessarily uniform. While some athletes experience heightened stress, others may primarily experience burnout and emotional exhaustion. Distinguishing between these outcomes is necessary to better understand how specialized youth sport environments relate to athlete well-being. Because this study relies on self-reported survey data, it is designed to examine associations between these variables rather than establish that one causes another.

High school athletes undergo extraordinary amounts of pressure as they prepare for higher education and engage in additional extracurricular activities. Research indicates that nearly 50% of all adolescent mental health and behavioral problems begin by age 14, suggesting that sporting environments and increasing academic responsibility can occupy significant psychological weight (Khan, 2022, p. 2). Recently, youth sports have become increasingly competitive and specialized, especially as more athletes begin choosing their sports at a younger age. Although good for their skills and abilities, it risks dangerous levels of stress and pressure at a younger age. Within athletics, 'burnout' embodies a multitude of concepts that include emotional/physical exhaustion, reduced sense of accomplishment, and devaluation of sports that cause stress on athletes, leading them to cease participation in sports they previously enjoyed (Brenner, 2024).

## LITERATURE REVIEW

### *Environmental Pressure*

Disengagement from organized sport is common, and understanding its causes is important for protecting adolescent athletes when the athletic environments are damaging to their well-being. According to Anthony Battaglia, "the failure of organized sport programs to accommodate competing demands and interests in other activities is one of the most common reasons for youth disengagement" (2024, p. 347). These competing demands include time for academic coursework, other extracurriculars, and recovery time spent with family and friends. Many competitive sports teams prioritize training above all else, leading coaches to overlook the importance of extracurricular activities in student-athletes' lives.

Additionally, more research indicates that education and training to focus on restorative supportive environments that center on the mental health of these athletes is necessary. Susanna Geidne confirms this through her research, noting that clubs can serve as supportive environments when organized to be "safe, stimulating, satisfying and enjoyable", while maintaining athlete health at the center of club goals (2013, p. 277). Though having supportive environments is necessary, research investigating the dropout crisis reveals that many programs are moving in the opposite direction, away from "safe environments" and

towards what Battaglia defines as performance excellence; a win-at-all-costs mentality, also known as the professionalization of youth sports (2024, p. 348).

Emphasis on performance excellence causes youth athletes to be in social comparisons with their peers, increasingly becoming aware of their mistakes, and experiencing greater feelings of incompetence and low self-esteem. Alan Smith adds to this by explaining how the motivation and aspiration of adolescents are linked with social acceptance among peers (2003, p. 31). When athletes train year-round in the same sport alongside the same group of peers, the opportunity for social comparison becomes constant. They begin to measure themselves against one another, which creates higher personal expectations and often results in greater disappointment and lower self-esteem when those expectations are not met. Negative aspects of sports participation, such as performance pressure, risk of injury, and potential for social elitism, cause harm to student athletes. These environmental pressures do not act alone; they are resulted from the combination of adult behaviors and specialized athletic environments.

***Over-Involvement of Adults***

While more recent literature has expanded on parental involvement in sports, foundation studies about adult over-involvement established by sport sociology scholars still remain relevant, as the dynamic of adults prioritizing performance of the athletes themselves has been consistent to this day. Jonathan Brower advances this perspective, noting that "if the young athletes do not measure up to the hopes, expectations, and even demands of their parents, they are held responsible for making their parents unhappy" (1979, p. 45). Parents tend to become overly invested in their child's sports experience, adding additional pressure to an adolescent who may already be critical of themselves. Similarly, Battaglia explains that "parents may promote unhealthy perfectionism and provide criticisms on the car ride home" (2024, p. 348).

The overly invested actions of parents are a significant contributor to burnout, particularly when athletes start to expect constant feedback. Cumming and Ewing note that parents do not always fully share the perspective of the athlete, which can make it difficult to offer feedback the athlete experiences as constructive rather than as added pressure (2002, p. 21)

However, these added expectations are not only a result of parent interactions. The relationship between athletes, coaches, and parents, with organized sports, indicates the prioritization of winning in parents over the desire of athletes. A study by Kenneth McEwin and Thomas Dickinson advances the notion that many coaches emphasize winning at any cost as well as allow for arguments between superstar athletes, especially at higher levels (1996, p. 218). Young athletes tend to want to enjoy the game while parents and coaches focus more on athletic performance, causing conflicting feelings for children who are pressured to perform well to meet expectations. "Adult egos too often turn the game into a victory drive or a training ground for future stars" (Brower, 1979, p. 41). More recent studies have also noted that many parents try to achieve goals they missed out on in their own childhood (Cumming & Ewing, 2002, p. 21). This becomes increasingly unhealthy for children the longer they have to endure it over time, as many

adults continue to struggle to understand that the benefits are intended for children, rather than themselves. The over-involvement of adults in adolescent sports and their channeling of goals through their children leads to a tendency to use children for their own personal goals, causing additional stress and anxiety for these athletes.

### *Sport Benefits*

It is important to note that being involved in youth sports leads to the development of skills in leadership, discipline, and teamwork, potentially increasing success in academics and personal life as well. Sports are a two-way street, having the potential to be both healthy and destructive depending on the environment of the sport. J. M.R. Duncan-Andrade explains that sports allow for critical development in many areas, including self-esteem, motivation, goal setting, and problem solving (2010, p. 40). Sport clubs are a large factor in an adolescent's life and can be an important learning experience for them because of the long hours spent in this environment every week. For these reasons, athletes are able to distract themselves from burdens while being in a supportive environment in which they are able to enjoy an activity with others who want the same. However, these benefits depend on the environment in which athletes are put in. The continuous year-round commitment causing discipline in a supportive environment can cause burnout for an athlete in a performance-excellence oriented environment. The question for specialized athletes is not whether or not sports are beneficial, but when the conditions of a specialized environment shift from protective to harmful.

### *Exploring the Gap*

The main gap in existing literature stems from the connection between sport specialization and long-term mental health impacts in competitive athletes. Scholars have studied youth sports participation, the physical consequences of early specialization, and general adolescent mental health. However, fewer studies have clearly distinguished between stress and burnout as separate psychological outcomes of specialization. In addition, little research has specifically focused on the age demographic of high school athletes who aspire to compete collegiately, especially in Northwest Houston, a population that may face unique competitive pressures. As a result, it remains unclear whether specialized childhood sport participation is more strongly associated with emotional exhaustion, general stress, or both within this population. The combination of the above factors raises the question: In what ways has participation in specialized childhood sports influenced the mental health of high school athletes in Northwest Houston who intend on competing at the collegiate level?

Two hypotheses guided the present study. The first is that high school athletes in Northwest Houston who intend on competing at the collegiate level are more likely to have higher levels of performance-related stress and burnout rates compared to athletes who were in more diverse sport environments. The second hypothesis predicted that there would be a positive correlation between early sport specialization and stress and burnout issues.

## METHODOLOGY

### *Study Design and Method Type*

The present study employed an exploratory, non-experimental correlation research design to examine the associations between specialized youth sports and the mental health of high school athletes with collegiate sport aspirations. This approach allowed the study to obtain new data regarding the correlation and fill the gap, which is the lack of data in exploring the relationship between youth sports and mental health outcomes later in life. A non-experimental design was chosen for this study, and answered the research question by gathering information through a survey, which is a feasible method for large-scale data analysis and also allows for a direct comparison between how specialized youth sports have impacted the mental health of high school athletes. Because the design is correlation and cross-sectional, its findings should be read as describing associations among variables rather than establishing that specialization causes particular mental health outcomes.

### *Participants*

Participants involved high school-aged athletes in the Northwest Houston area. The chosen sample size was gathered from a pool of volunteers available from school-based teams and independent club teams. Participants were required to (a) be an athlete in high school and (b) reside in the defined geographic region. The subjects were categorized into sub-groups depending on whether they reported participation in specialized childhood sports and whether they expressed intentions to compete collegiately. A non-probability sampling method was used as recruitment occurred through social media outreach and communication with local athletic organizations. Participants were not required to be a part of their high school team, but the majority of respondents fell into that category. It is imperative to note that athletes could be a part of any sport, but to be considered an athlete who has done specialized sports as a child, they had to report early specialization in the same sport they were currently competing in.

### *Study Instrument*

The instrument used in the present study was a researcher-developed survey via Google Forms. The survey consisted of multiple-choice, Likert-scale, yes/no, and open-ended questions regarding the mental health of these high school athletes, specifically stress and burnout.

To strengthen measurement validity, the burnout items in the survey were developed with reference to the Athlete Burnout Questionnaire (Raedeke and Smith, 2001), specifically emotional exhaustion, reduced sense of accomplishment, and sport devaluation. The validated instrument itself was not administered, and no validated stress or burnout measure was used in full; the present study should be described as informed by, rather than based on, this validated framework. Because only the emotional exhaustion

dimension was directly measured through the composite stress reported below, "burnout" in this study specifically refers to the emotional exhaustion composite unless otherwise noted, and this distinction is maintained consistently through the Results and Analysis sections.

The survey was organized into several main categories: demographic information, sport specialization, collegiate intentions, sport performance, childhood sport environment, mental health and burnout, and additional factors (see Appendix A). Branching logic directed participants who reported no childhood specialization to skip the specialization-specific questions, ensuring relevance across both subgroups. The sport specialization section relayed quantitative data about the length of their specialized sport training. Then, moving to the collegiate intentions portion of the survey, the participants were asked about their collegiate intentions and included two Likert-scale questions ranging from 1 ("not important" / "no pressure") to 5 ("very important" / "a lot of pressure"). The sport performance section used a 1 ("never") to 5 ("always") scale. The next section of the survey included questions about the extent to which their childhood environment and experience were beneficial or negative. The Likert-scale questions in this section ranged from 1 ("never", "not at all", "strongly disagree") to 5 ("always", "extremely", "strongly agree"). The inclusion of short-answer questions allowed for a better understanding and detailed account of the experiences that participants went through, providing greater insight into the impact their childhood environment had on their mental health. However, participants were able to put N/A for all questions that did not apply to their childhood sport experience. The survey also inquires into the extent to which burnout is applicable to the athlete's life and the necessity of taking a break or moving away from the sport for a period of time. The last section, "other factors", asked about their personal growth and feelings about support. As per the requests of the Tomball ISD IRB, links to mental health were provided at the conclusion of the survey if participants felt the need to reach out.

### *Procedure*

The survey was promoted through social media campaigns to promote the project and reach out to athletes across the Northwest Houston area. Multiple posts were made on Instagram and promoted through this platform in order to reach respondents. The use of the direct messaging feature on Instagram was also used heavily to ensure athletes of the right demographic were able to be notified of the research study, which became the strategy that yielded the most results. Additionally, emails were sent out to high school coaches around the area, as well as different club and sport organizations, which yielded responses from various willing athletes. The participants would fill out the survey and then access the mental health resources provided at the end of the survey if needed. The approach was designed to maximize reach in the geographic area and demographic bounds of the study, allowing the study to be reproduced by other researchers.

### *Ethical Considerations*

The present study was approved by the Tomball ISD Institutional Review Board. The participants will also be anonymous to ensure that student information is confidential and to prevent any bias when

analyzing the data. No aspect of the experiment will impact the students' mental health, and participation will be voluntary as participants can withdraw at any time. All the participants were informed of the study objectives along with how to complete the questionnaire. An informed consent form and a parent consent form were included in the survey to allow both parents and students to understand the survey while being aware of the method and process. The consent forms assured that all information would remain confidential and that they were able to exit the survey at any stage if they did not want to continue.

### *Statistical Analysis*

Google Sheets was used to analyze data, being a widely available computer software used for statistical analyses. Independent variables used in the present study included years of specialization and early stress factors, which were quantified. Mental health, burnout, and stress were the dependent variables and were also quantified. As the hypothesis was that a more negative specialized sport experience would correlate with more elevated levels of performance-related stress and burnout, specialized versus non-specialized variables were examined separately. Descriptive statistics, including means and standard deviations, were calculated for all variables to summarize the dataset, and tables were included to present the relationships between childhood sport experience, emotional well-being, and stress factors.

Independent samples t-tests were conducted to compare specialized (n1=31) and non-specialized (n2=13) collegiate-aspiring athletes (n=44) across composite stress, emotional exhaustion, and current sport-related stress scores. Parametric assumptions underlying the t-test were not formally evaluated using objective statistical diagnostic procedures due to software constraints in Google Sheets. Assumption checks were limited to visual inspection of score distributions and differences between subgroups.

Pearson correlation coefficients (r) were computed to determine the magnitude and direction of associations between years of specialization and each mental health outcome, answering the second hypothesis that hypothesized that early sport specialization correlates with higher burnout and stress rates. These coefficients are reported as descriptive indicators of relationships strength rather than inferential tests of statistical significance.

## RESULTS AND FINDINGS

### *Intro to Data Results*

This section presents the raw data collected in the study, which is being used to examine the relationship between participation in youth specialized sports and mental health among high school athletes in Northwest Houston. A survey was used and distributed to student athletes that presented quantitative and qualitative data, providing insight into participation demographics, the youth specialization environment, stress and pressure, as well as experience with burnout. The full sample consisted of 78 high school

athletes; the analysis most directly relevant to the research questions focuses on the subgroup of 44 athletes who reported an intention to compete collegiately (31 specialized, 13 non-specialized). Table and in-text references below specify which sample – the full sample (n=78) or the collegiate-aspiring subgroup (n=44) – each statistic describes.

***Demographics of Participants***

The survey received responses from 78 high school students currently participating in sports from the Northwest Houston area. These participants competed in various sports, including swim, track, football, water polo, cheerleading, and more. Additionally, survey participants included both male and female athletes, allowing for more diverse experiences in understanding sport specialization environments as a result of gender specific sports. Participants were chosen through a non-probability convenience sampling method, seeking responses from students who participate in sports currently as well as during their youth. To confirm compliance with this standard, survey participants were required to confirm multiple things before continuing the survey. First, participants were required to be high school students in the Northwest Houston area and to have participated in competitive youth sports. Competitive youth sports included being on any type of sports team, such as a club team or summer sports league that competed against other teams. For athletes who competed in specialized youth sports, questions about the number of years spent in that environment and the age at which they started specialization were asked, collecting data that was later used in statistical tests. Following that, they were required to consent to participate in the study. It was ensured that all responses remained anonymous and no identifying information was collected.

***Sport Specialization and Mental Health Factors***

The first question asked in the survey, aside from demographic information, was “Did you participate in a specialized sport during your childhood?” This question divided participants into two groups: those who answered “yes” and those who answered “no”. There was a large difference in responses, with 53 participants responding with “yes” and 25 participants responding with “no”. Splitting respondents into subgroups allowed for a categorical comparison for the statistical analysis, contributing to a deeper understanding of the context surrounding the findings.

Furthermore, to reach the demographic specified in the research question, participants were then asked: “Do you plan on competing collegiately in your sport?” Of the participants who reported that they participated in a specialized sport during their childhood, 31 responded that they were planning on participating collegiately. On the other hand, of the participants who reported that they did not participate in specialized sports during their childhood, 13 responded that they still intended to compete at the collegiate level.

| Group | Number of Respondents | Percentage |
|---|---|---|
| Specialized / Collegiate-Aspiring | 31 | 70% |
| Non-Specialized / Collegiate-Aspiring | 13 | 30% |

**Table 1:** Collegiate Competition Intentions Among Specialized and Non-Specialized High School Athletes in Northwest Houston (Collegiate-Aspring Subgroup, n=44)

To understand how these groups' experiences compared to each other, average scores were calculated from the Likert-scale questions. Both 1-5 and 1-10 scales were used to quantify levels of stress and emotional exhaustion. Composite scores were created by averaging related survey items. A stress score was calculated as the average from responses measuring pressure to compete at the collegiate level and fear of making errors, using the 1-5 Likert scale questions, with 1 being "no pressure" and "not at all" and 5 being "a lot of pressure" and "extremely". Current stress was measured separately due to being on a 1-10 Likert scale, with 1 being "not stressed at all" to 10 being "very stressed". Additionally, a burnout (emotional exhaustion) score was calculated as the average from responses measuring how emotionally drained participants feel and how overwhelmed they feel by their sport commitments.

| Scale | Anchors |
|---|---|
| Composite Stress Items (1-5) | 1 = "no pressure" / "not at all", 5 = "a lot pressure" / "extremely" |
| Current Sport-Related Stress (1-10) | 1 = "not stressed at all", 10 = "very stressed" |

**Table 2:** Response Scales Used for Stress Measure

Descriptive comparisons of the collegiate-aspiring subgroup (n=44) are reported in Table 3; followed by inferential test results in Table 6.

| Group | n | Stress Score (1-5), M (SD) | Emotional Exhaustion Score (1-5), M (SD) | Current Stress (1-10), M (SD) |
|---|---|---|---|---|
| Specialized / Collegiate-Aspiring | 31 | 3.6 (1.09) | 3.8 (0.53) | 6.4 (2.29) |
| Non-Specialized / Collegiate-Aspiring | 13 | 2.3 (1.26) | 3.5 (0.39) | 4.8 (2.67) |

**Table 3:** Mean Stress and Burnout Scores with Standard Deviation Scores by Group, Collegiate-Aspiring Subgroup (n=44)

***Frequency Responses***

Focusing on the athletes who have participated in specialized youth sports and intended to compete collegiately, participants were asked about external and internal pressures, whether or not they experienced burnout, if they considered quitting their sport, and if they needed to take a break from their sport. Participants responded with either "yes" or "no" to each of those questions. 27 participants responded "yes" to the question regarding their external and internal pressures, while 4 participants responded with "no". For the question about whether or not they experienced burnout, 25 participants responded with "yes" and 6 participants responded with "no". The question about quitting their sport was more equal in responses, with 16 participants selecting "yes" and 15 participants selecting "no". The final "yes or no" question that was asked was about whether they needed to take a break from their sport, and 20 participants responded with "yes" while 11 participants responded with "no".

| External / Internal Pressure | Burnout Experienced | Considered Quitting | Took a Break from Their Sport |
|---|---|---|---|
| Yes: 27 | Yes: 25 | Yes: 16 | Yes: 20 |
| No: 4 | No: 6 | No: 15 | No: 11 |

**Table 4:** Frequency of Yes/No Responses on Pressure, Burnout, Quitting Consideration, and Sport Breaks Among Specialized Collegiate-Aspiring Athletes (n=31)

***Qualitative Data Themes***

Four open-ended questions were included in the survey, with two questions asking about their childhood coaching environment and source of childhood stress, and the other two questions providing further context for a response to a quantitative question. Responses were analyzed using thematic coding: each response was reviewed, categorized based on recurring themes, and counted to determine frequency. Themes were identified directly from the data rather than in advance; however, the final categories aligned with measures established in the literature, including performance-related stress, fear of failure, and external pressures.

A total of 78 qualitative responses from all participants were analyzed. Each response was assigned one primary thematic code based on its predominant theme. Responses containing multiple ideas were categorized according to the theme that most directly represented the primary source of stress described. Unclear responses were reviewed using the established thematic categories to determine the most appropriate classification. Responses that did not clearly align with any of the three primary themes, including miscellaneous or unclear responses, were classified as miscellaneous / excluded from the primary thematic analysis.

50% of responses came from performance pressure and self-expectations (stress coming from internal pressure to improve, be perfect, or meet high expectations). 14.1% noted that they feared failure of

making mistakes, including anxiety about messing up, underperforming, or not meeting expectations. Another 16.7% noted that their stress came from external pressure, like parents, coaches, and their teammates. The remaining 19.2% of responses reflected miscellaneous or overlapping themes that did not clearly align with a single category and were therefore excluded from primary thematic coding. These themes appeared consistently and provided qualitative support for the study hypothesis by illustrating how childhood sport experiences were associated with performance pressure, fear of failure, and external expectations.

| Theme | Count | Percentage |
|---|---|---|
| Performance Pressure and Self-Expectations | 39 | 50% |
| Fear of Failure and Making Mistakes | 11 | 14.1% |
| External Pressure | 13 | 16.7% |
| Miscellaneous / Excluded Responses | 15 | 19.2% |

**Table 5:** Most Common Qualitative Themes Identified in Reported Sources of Childhood Sport Stress

Representative responses illustrate each theme. One participant describing performance pressure wrote: “I always strived to be either perfect or near perfect, so when I felt like I messed up, it weighed on me a lot.” A response reflecting external pressure stated: “I didn’t want to let my teammates or coaches down.” These responses provide information beyond the frequency counts, revealing the language participants used to describe their experiences and confirming the themes found during the coding process accurately reflect the recurring experiences that participants face. A response reflecting the fear of failure theme stated that their stress came from “the fear of not being good enough and not proving [themselves]”.

## ANALYSIS AND INTERPRETATION

The results of the present study demonstrate an association between youth sport specialization and burnout among collegiate-aspiring athletes. Two hypotheses guided the analysis: (1) athletes specialized in youth sports would report significantly higher levels of performance-related stress and burnout rates compared to non-specialized athletes and (2) there would be a positive correlation between years of specialization and both stress and burnout outcomes. Based on these findings, the first hypothesis was partially supported and the second hypothesis was descriptively supported regarding burnout and moderately supported for stress. Specialized childhood sport participation was more strongly associated with burnout than with general stress. This suggests that specialization may influence certain dimensions of psychological well-being more than others, rather than uniformly increasing all negative outcomes.

T-tests for independent samples were conducted to assess group differences between specialized and non-specialized collegiate-aspiring athletes.

| | Composite Stress | Burnout (Emotional Exhaustion) | Current Stress |
|---|---|---|---|
| t (df) | 1.58 (19.00) | 3.65 (21.53) | 2.10 ( 18.64) |
| Cohen's d | 0.70 | 1.59 | 0.96 |
| p-value | 0.120 | 0.00125 | 0.0464 |

**Table 5:** Independent-Samples T-Test Results Comparing Group Means, Collegiate-Aspiring Subgroup (n= 44)

The p-value for the composite stress score was 0.120, exceeding the conventional significance threshold of 0.05 and indicating no statistically significant group difference on overall perceived stress. The p-value for the burnout score was 0.00125, well below the 0.05 threshold, indicating a statistically significant difference in emotional exhaustion between the two groups. The current sport-related stress score yielded a p-value of 0.0464, also below the significance threshold, suggesting that specialized athletes reported significantly different levels of current sport-related stress. Together, these results suggest a more nuanced pattern than a simple "burnout, not stress" conclusion: specialization was significantly associated with emotional exhaustion and current sport-related stress, but was not associated with a significant difference in the broader composite stress measure. This distinction between the border composite measure versus single current state of stress likely accounts for the differing results and should be treated as an important finding rather than a discrepancy to be looked over.

The strongest quantitative finding was the burnout score (p=0.00125): because the p-value is well below the standard threshold of 0.05, the emotional exhaustion difference between groups is unlikely to be due to chance alone. While both groups participate in competitive sports, the specialized group's burnout scores were significantly higher, suggesting that the structure and intensity of specialized sport participation may be associated with greater psychological fatigue. For collegiate-aspiring athletes, this distinction is especially important because burnout may remain hidden behind continued high performance and commitment. The t-test results demonstrate that for this specific subgroup, specialization was associated with a statistically significant difference in sustained emotional exhaustion. These findings are consistent with Battaglia's (2024) characterization of performance-excellence environments, which prioritize winning over athlete well-being, as sustained year-round specialized training produced sustained emotional exhaustion rather than stress. It also extends on Geidne's (2013) framework, as when sport clubs fail to be "safe, stimulating, and satisfying," one measurable consequence may be elevated burnout specifically, rather than elevated general stress. The qualitative data reinforces this pattern as well with themes of performance pressure, fear of failure, and external pressure appearing consistently with

this pattern, though as a separate, non-representative source of evidence they should be read as complementary, not independent, statistical confirmation.

Pearson correlation coefficients were also computed in the collegiate-aspiring subgroup: years of specialization and stress (r=0.55), years of specialization and burnout (r=0.89), and pressure and stress (r=0.77). Because p-values for these correlations were not computed, these r-values should be interpreted as descriptive indications of association strength rather than as evidence that the relationships are statistically significant. With that, the correlation between years of specialization and burnout (r=0.89) describes a very strong positive association, the correlation between pressure and stress (r=0.77) describes a strong positive association, and the correlation between years of specialization and stress (r=0.55) describes a moderate positive association. Combined with the t-test results, these associations reinforce that longer specialization is more strongly linked to emotional exhaustion than to general stress, while also indicating that stress itself is not unrelated to specialization, but rather, the relationship is weaker and less consistent between the different ways stress was measured.

## LIMITATIONS AND IMPLICATIONS

The present study contains several methodological limitations that should be considered when interpreting the findings. Allowing for a volunteer sample creates the possibility of bias, as those who participated in the study may have completely different experiences than those who did not; furthermore, the willingness to discuss the depth of their mental health experiences also differs with each athlete. With the focus on the Northwest Houston area exclusively, the findings do not represent those who experience different sport systems or socioeconomic backgrounds/living conditions. In relation to the survey itself, measures were self-reported by the participants, causing responses to be subject to bias. A section of the survey asked participants to reflect on their childhood sport experiences, which is also subject to bias because of memory inaccuracies. It is important to note that interpersonal relationships, school-sport balance, physical health concerns, and injury, all factors that can influence the mental health and motivation of an athlete, were not controlled in the current study.

Because the design is correlational and cross-sectional, its findings describe associations between specialization and mental health outcomes rather than casual effects; alternative explanations, including that athletes who already experience more stress or burnout are more likely to specialize, or that unmeasured factors influence both specialization and mental health, cannot be ruled out.

In spite of these limitations, the design is a good blueprint for applied field research to be replicated in the future: it draws on measures informed by a validated burnout framework, well-defined variables, and appropriate statistical analysis allows the design to be easily replicated and provide accurate results. By narrowing my demographic to the age bracket of high school athletes with collegiate intentions, the study offers a thorough examination of an understudied population in the broad field of mental health and sports. If this study were to be replicated, the primary methodological change would be the use of a

validated burnout instrument such as the Athlete Burnout Questionnaire (Raedeke and Smith, 2001) in its entirety, and additionally, compute the p-values for the Pearson correlation coefficients to allow for more formal conclusions. The study's implications are significant in leading to more emphasis on better methods to prevent lasting effects on early sport-specialized athletes, as well as inform adults about training intensity, allowing for better decision-making in order to lower rates of poor mental health and burnout.

## CONCLUSION

This study found that childhood sport specialization was associated with higher emotional exhaustion (burnout) among high school athletes, and with a more mixed pattern of association with stress: the broader composite stress measure did not differ significantly between specialized and non-specialized collegiate-aspiring athletes, but current sport-related stress did, and years of specialization showed a moderated positive correlation with stress. Pressure was identified as a key factor in causing stress, which showed how the demands of the environment play a greater role in mental health than specialization itself. Additionally, these findings show the importance of differentiating between stress and burnout indicators for athlete well-being, as they have significantly different impacts on athletes. Because this study is correlation, these findings should be read as identifying associations worth further attention, especially the association between specialization and emotional exhaustion, rather than as establishing that specialization directly causes burnout. The results are consistent with the view that managing athlete pressure, supporting mental recovery, and monitoring for signs of emotional exhaustion are important priorities for coaches and parents working with specialized youth athletes.

## FUTURE DIRECTIONS

Future studies could track athletes over multiple years to have a deeper understanding of the long-term impacts of specialization on stress, burnout, and performance. These findings can lead to information about whether early specialization leads to sustained burnout or withdrawal from sports. Additionally, expanding research to different levels of competition, such as national or international levels, would increase the depth of research, as the current findings are limited to high school athletes with collegiate intentions. Researchers could investigate other factors, like social support and coaching style, to help understand the cause for higher levels of burnout versus lower burnout in specialized athlete experiences. Furthermore, the results of this study and additional research could be shared with athletic clubs and high school coaches to help them understand and find ways to reduce the effects of burnout and pressure on athletes, as well as allow athletes to continue to enjoy participating and performing well in their respective sports.

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## APPENDIX A

# Impact of Youth Sports on Mental Health

***BEFORE YOU CONTINUE**, it is **required** that you are a Northwest Houston area high school student and **required** that you are currently participating in high school sports and have competed in competitive youth sports before you fill out this survey. This survey will take approximately 10 minutes to complete.

Please answer the question below and click "Next" to continue to the main portion of the survey.

* Indicates required question

1. Are you a high school student who is currently participating in sports? *

*Mark only one oval.*

- ◯ Yes
- ◯ No *Skip to section 11 (**Thank you for your time!**)*

**INFORMED CONSENT FOR HUMAN SUBJECT RESEARCH PARTICIPATION**

Study Title: **Impact of Youth Sports on Mental Health**
Student Researcher: Jasmine Nguyen

**Participation is voluntary**
It is your choice whether or not to participate in this student research study. If you choose to participate, you will still be able to leave the study at any time without negative repercussions.

**What is the purpose of this student research study?**
My name is Jasmine Nguyen and I am an AP Capstone student at Tomball Memorial High School in Tomball, Texas. Over the course of the next year, I will be doing a research project centered around the effects of participation in youth specialized sports on the mental health of high school athletes. With my research I aim to gather information to find the true correlation between youth specialized sports and mental health.

**How long will I take part in this student research study?**
Your participation will take no longer than 10 minutes.

**What can I expect if I take part in this student research study?**
As a participant, you will answer multiple types of questions including open ended, multiple choice, and Likert-scale questions surrounding my topic.

**Risks and Discomforts**
Risks and discomforts are absent within this survey.

**Confidentiality**
The confidentiality of your participation in this research study, your responses, or any individual results will be maintained by the Principal Researcher. Note that confidentiality will only be violated when required by law or the ethical guidelines of Tomball ISD. This usually includes, but may not be limited to, situations when your responses indicate that you, or another clearly identified individual, is at risk of imminent harm or situations in which faculty are mandated reporters, such as instances of child abuse or issues covered under Title IX regulations.

**If I have any questions, concerns, or complaints about this student research study, who can I talk to?**
The researcher for this study is Jasmine Nguyen who can be reached at jtvnguyen13@gmail.com. The faculty advisor is Madelyne Lee who can be reached at madelynelee@tomballisd.net.

The Institutional Review Board (IRB) under the Tomball Independent School District is

responsible for the oversight of all human subject research conducted at Tomball Memorial High School. If you have any questions about your rights as a research participant before, during or after the research study, you may contact the faculty advisor who will get you in touch with the right people to answer any questions. This research study has been approved by the IRB on 12/3/25.

2. After you view the consent form, do you consent to continue with the survey? *

*Mark only one oval.*

- ◯ Yes, I am over the age of 18 and I consent. *Skip to question 4*
- ◯ Yes, I am under the age of 18 and I consent.
- ◯ No, I do not consent. *Skip to section 11 (**Thank you for your time!**)*

**Parental Permission to Participate in Research Involving Minimal Risk**

The following information is being presented to help you and your child decide whether or not your child wishes to be a part of a research study. Please read this information carefully. If you have any questions or if you do not understand the information, we encourage you to ask the research.

We are asking you to allow your child to take part in a research study called: ***Impact of Youth Sports on Mental Health***

The person in charge of this research study is **Jasmine Nguyen**

**Why is this research being done?**
My name is Jasmine Nguyen, and I am an AP Capstone student at Tomball Memorial High School in Tomball Texas. Over the course of the next year, I will be doing a research project centered around the effects of participation in youth specialized sports on the mental health of high school athletes. With my research I aim to gather information to find the true correlation between youth specialized sports and mental health.

**Why is your child being asked to take part?**

I am asking your child to take part in this research study because sports are especially relevant to high school aged athletes, so that was the demographic I chose for my research. Alongside sports being relevant, their childhood sport experiences are an extremely important factor to who they are today.

**Should your child take part in this study?**

This informed consent form tells you about this research study. You can decide if you want your child to take part in it. This form explains:

• Why this study is being done.

• What will happen during this study and what your child will need to do.

• Whether there is any chance your child might experience potential benefits from being in the study.

• The risks of having problems because your child is in this study.

**Before you decide:**

The decision to provide permission to allow your child to participate in the research study is up to you. If you choose to let your child be in the study, then you should sign this form. If you do not want your child to take part in this study, you should not sign the form.

**What will happen during this study?**

Your child will be asked to answer multiple types of questions including open ended, multiple choice, and Likert-scale questions surrounding my topic.

**Will your child be compensated for taking part in this study?**

You will receive no payment or other compensation for taking part in this study.

**What will it cost you to let your child take part in this study?**

It will not cost you anything to let your child take part in the study.

**What are the potential benefits to your child if you let him / her take part in this study?**

Participation in this study may allow your child to see the true effects youth sports have on mental health in the long run, and whether or not specialized sports play a large role on their current participation in their chosen sport.

**What are the risks if your child takes part in this study?**

There are no known risks to those who take part in this study.

**Privacy and Confidentiality**

Unless you provide consent to the contrary, the confidentiality of your participation in this research study, your responses or any individual results will be maintained by the Principal Researcher and all members of the research team. Note that confidentiality will only be violated when required by law or the ethical guidelines of the American Psychological Association. This usually includes, but may not be limited to, situations when your responses indicate that you, or another clearly identified individual, is at risk of imminent harm or situations in which faculty are mandated reporters, such as instances of child abuse or issues covered under Title IX regulations.

I may publish what we learn from this study. I will not publish any identifying information.

**You can decide after signing this informed consent form that you no longer want your child to take part in this study.**

I will keep you informed of any new developments which might affect your willingness to allow your child to continue to participate in the study.

Even if you want your child to stay in the study, there may be reasons we will need to withdraw him/her from the study. Your child may be taken out of this study if we find it is not safe for your child to continue in the study. I will let you know the reason for withdrawing your child's participation in this study.

**You can get the answers to your questions, concerns, or complaints.**

If you have any questions, concerns or complaints about this study, email jtvnguyen13@gmail.com

If you have questions about your child's rights, general questions, complaints, or issues as a person taking part in this study, email student research advisor Madelyne Lee at madelynelee@tomballisd.net.

**It is up to you to decide whether you want your child to take part in this study.**

**********

**CONSENT**

**I freely give my consent to let my child take part in this study and authorize that my child's information as agreed above, be collected/disclosed in this study. I understand that by checking yes I am agreeing to let my child take part in research.**

3. After viewing both consent forms do you consent to moving on to begin this survey? *

*Mark only one oval.*

- ◯ Yes, I am under the age of 18 and my parent gives consent
- ◯ No, I do not consent *Skip to section 11 (**Thank you for your time!**)*

**Demographic information**

4. Please select your gender *

*Mark only one oval.*

- ◯ Male
- ◯ Female
- ◯ Prefer not to say
- ◯ Other:

5. Do you participate in a sport at your current high school? *

*Mark only one oval.*

- ◯ Yes
- ◯ No

6. What sport are you a part of (your primary sport)? *

*Mark only one oval.*

- ◯ Football
- ◯ Basketball
- ◯ Cheer
- ◯ Baseball
- ◯ Swim
- ◯ Tennis
- ◯ Volleyball
- ◯ Track
- ◯ Cross Country
- ◯ Dance
- ◯ Soccer
- ◯ Softball
- ◯ Water Polo
- ◯ Other: ___

**Sport Specialization**

Sport specialization is year-round training in a single sport, often to the exclusion of other sports or activities.

7. Did you participate in a specialized sport during your childhood? *

*Mark only one oval.*

- ◯ Yes
- ◯ No *Skip to question 14*

**Sport Specialization**

8. Did you stop playing other sports to concentrate on your specialized childhood sport? *

*Mark only one oval.*

- ◯ Yes
- ◯ No

9. At what age did you begin focusing on one primary sport year-round? *

_____

10. Do you currently participate in a specialized sport team? *

*Mark only one oval.*

- ◯ Yes
- ◯ No

11. Is your current high school sport the same as the one you specialized during childhood? *

*Mark only one oval.*

- ◯ Yes
- ◯ No

12. How many years have you been a part of a specialized sports team? *

_____

13. Did a coach, parent, or school encourage early specialization? *

*Mark only one oval.*

- ◯ Coach
- ◯ Parent
- ◯ School
- ◯ No
- ◯ Other: _____

**Collegiate Intentions**

14. Do you plan on competing collegiately in your sport? *

*Mark only one oval.*

- ◯ Yes
- ◯ No
- ◯ Other: ___

15. How important is earning an athletic scholarship to you? *

*Mark only one oval.*

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Not | ◯ | ◯ | ◯ | ◯ | ◯ | Very Important |

16. How much pressure do you feel to play at the college level from yourself, parents, or coaches? *

*Mark only one oval.*

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| No f | ◯ | ◯ | ◯ | ◯ | ◯ | A Lot of Pressure |

**Sport Performance**

17. I am focused on improving during practice. *

*Mark only one oval.*

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Nev | ◯ | ◯ | ◯ | ◯ | ◯ | Always |

18. I am more focused on improvement than winning. *

*Mark only one oval.*

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Nev | ◯ | ◯ | ◯ | ◯ | ◯ | Always |

19. I feel confident in my athletic abilities during practice and competitions. *

*Mark only one oval.*

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Nev | ◯ | ◯ | ◯ | ◯ | ◯ | Always |

20. I can manage my emotions in competition. *

*Mark only one oval.*

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Nev | ◯ | ◯ | ◯ | ◯ | ◯ | Always |

21. I always strive to do my best in my sport. *

*Mark only one oval.*

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Nev | ◯ | ◯ | ◯ | ◯ | ◯ | Always |

22. I know where I can improve and grow in my sport. *

*Mark only one oval.*

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Nev | ◯ | ◯ | ◯ | ◯ | ◯ | Always |

23. I am able to take constructive feedback and criticism well. *

*Mark only one oval.*

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Nev | ◯ | ◯ | ◯ | ◯ | ◯ | Always |

24. Do you find your sports social groups to be inclusive regarding forming friendships with non-athletes? *

*Mark only one oval.*

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Not | ◯ | ◯ | ◯ | ◯ | ◯ | Very inclusive |

**Childhood Sport Questions**

If you did not participate in childhood sports (both specialized and non-specialized) or the questions do not pertain to your childhood sport experience, answer N/A.

25. At what age did you first feel pressure to win or perform in your sport? *

26. How would you describe the coaching environment during your childhood? *

27. Did your parents attend most of your games? *

*Mark only one oval.*

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Nev | ◯ | ◯ | ◯ | ◯ | ◯ | Always |

28. Did you feel your parents' behavior at games affected your performance? *

*Mark only one oval.*

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Stro | ◯ | ◯ | ◯ | ◯ | ◯ | Strongly Agree |

29. If agreed, in a negative or positive way?

*Mark only one oval.*

- ◯ Negative
- ◯ Positive
- ◯ Other: _____

30. How often did you feel anxious before games or competitions as a child? *

*Mark only one oval.*

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Nev | ◯ | ◯ | ◯ | ◯ | ◯ | Always |

31. What was the main source of stress in your childhood sport? *

_____

32. How much did fear of making errors affect your enjoyment of the sport? *

*Mark only one oval.*

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Not | ◯ | ◯ | ◯ | ◯ | ◯ | Extremely |

33. Do you feel your early sports environment supported your mental well-being? *

*Mark only one oval.*

- ◯ Yes
- ◯ No
- ◯ Other: _____

**Mental Health / Burnout and Motivation**

34. How often do you feel overwhelmed by your sport commitments? *

*Mark only one oval.*

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Not | ◯ | ◯ | ◯ | ◯ | ◯ | Extremely |

35. Do you feel pressure to perform well in your sport from parents, coaches, or yourself? *

*Mark only one oval.*

- ◯ Yes
- ◯ No
- ◯ Other: ___

36. If yes, how is that affecting your athletic performance?

_____

_____

_____

_____

_____

37. Have you ever sought help for anxiety, depression, or stress **related to sports**? *

*Mark only one oval.*

- ◯ Yes
- ◯ No

38. Have you experienced burnout (emotional exhaustion, loss of enjoyment) in your sport? *

*Mark only one oval.*

- Yes
- No
- Other: ___

39. If yes, then explain.

_____

_____

_____

_____

_____

40. Have you ever taken a break from your sport due to mental or physical exhaustion? *

*Mark only one oval.*

- Yes
- No

41. If yes, for how long?

_____

42. Have you ever considered quitting your sport due to stress or emotional exhaustion? *

*Mark only one oval.*

- Yes
- No
- Other:

43. How often do you feel emotionally drained from your sport? *

*Mark only one oval.*

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Nev | | | | | | All the Time |

44. Do you still enjoy your sport as much as when you started? *

*Mark only one oval.*

- Yes
- Less
- Not at All

45. Are you primarily playing for personal enjoyment, college scholarships, or professional dreams? *

46. How would you rate your current stress levels **related to sports**? *

*Mark only one oval.*

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Not | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Very Stressed |

**Other Factors**

47. How satisfied are you with your balance between sports, school, and personal life? *

*Mark only one oval.*

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Not | ◯ | ◯ | ◯ | ◯ | ◯ | Very Satisfied |

48. Do you feel that your current sports team has contributed to your personal growth and development? *

*Mark only one oval.*

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Not | ◯ | ◯ | ◯ | ◯ | ◯ | Significantly |

49. Do you feel supported by your coach, family, and school in managing athletic and academic demands? *

*Mark only one oval.*

- Yes
- No
- Other: ___

50. Have your grades changed since increasing your sport commitment? *

*Mark only one oval.*

- Improved
- Declined
- No Change

51. Do you feel your self-worth is tied to your athletic performance? *

*Mark only one oval.*

- Yes
- No
- Other: ___

**Thank you for your time!**

For any further questions you can contact me at jtvnguyen13@gmail.com or my Project Advisor at madelynelee@tomballisd.net

**Mental Health Resources**

If you are struggling with any mental health issues, please reach out to any of these organizations and receive support! These organizations are here to help and provide communities and groups in which you are able to communicate your struggles with.

**988 Lifeline** - https://988lifeline.org/get-help/
CDC Mental Health Resources - https://www.cdc.gov/mental-health/caring/index.html
Anxiety and Depression Association of America Peer-to-Peer Communities - https://adaa.org/find-help/support
Mental Health First Aid Resources - https://mentalhealthfirstaid.org/mental-health-resources/
The Mental Health Coalition Resource Library - https://www.thementalhealthcoalition.org/resources/

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