



# Evaluating Large Language Models as Mental Health Support Tools for Teenage Athletes

Lynn La Pyae Shane

---

## Abstract

This study investigates the potential of Large Language Models (LLMs) as mental health support tools for teenage athletes aged 13-18. Through a survey of 60 teenage athletes across 15 sports, we identified four primary mental health challenges: 68% mentioned performance anxiety, 80.2% mentioned peer pressure, 48% of them had confidence-related stress, and 39% had social comparison/perfectionism issues. Our findings reveal a significant gap between mental health needs and available support, with 78% of athletes attempting to "push through" challenges independently despite 47% expressing need for expert guidance. We evaluated three leading LLMs (ChatGPT-4, Claude 3, and Gemini Pro) using 20 scenario-based prompts derived from survey responses. Results indicate that LLMs show promise in providing accessible, 24/7 support that meets athletes' needs for help during non-traditional hours, with 64% of surveyed athletes open to AI-based support and 73% preferring a hybrid AI-human model. This research contributes to understanding how technology can bridge gaps in mental health support for young athletes while highlighting necessary safeguards and limitations.

*Keywords: teenage athletes, mental health support, artificial intelligence, sports psychology, chatbot intervention*

---

## I. Introduction

Teenage athletes face unique mental health challenges that stem from the intersection of developmental pressures, competitive demands, and identity formation (Rice et al., 2016). While physical training receives substantial attention and resources, mental health support for young athletes remains inadequate, creating a critical gap that technology might help address (Purcell et al., 2019).

### 1.1 Mental Health Issues Among Athletes

Recent studies indicate that teenage athletes experience higher rates of anxiety and depression compared to their non-athlete peers, yet they are less likely to seek professional help (Gulliver et al., 2012; Wolanin et al., 2016). This paradox stems from sport-specific cultural factors that create significant barriers to mental health support. The performance culture in sports emphasizes mental toughness and "pushing through" pain, an ethos that unfortunately extends to emotional challenges, leaving athletes feeling they must handle psychological distress independently (Bauman, 2016). Additionally, intensive training schedules leave little time for traditional therapy appointments, creating practical obstacles even for those willing to seek help (Castaldelli-Maia et al., 2019). Stigma concerns compound these issues, as athletes fear being perceived as weak or potentially losing playing time if they acknowledge mental health struggles

(Gucciardi et al., 2017; López & Levy, 2013). Finally, the lack of sports-specific mental health professionals means that even available resources may not fully understand the unique pressures athletes face (Stillman et al., 2019).

### *1.2 AI-Based Support*

Large Language Models represent a technological breakthrough that could address several barriers to mental health support for teenage athletes (Fitzpatrick et al., 2017). These systems offer 24/7 availability, making them accessible during non-traditional hours when athletes often experience stress, such as late evenings after practice or early mornings before competitions (Abd-Alrazaq et al., 2019). The anonymity provided by AI interactions reduces stigma-related barriers to seeking help, allowing athletes to explore their concerns without fear of judgment or repercussions (Lucas et al., 2014). Furthermore, LLMs can be trained on athlete-specific scenarios and terminology, developing a sport-specific understanding that many general mental health resources lack (Denecke et al., 2021). Perhaps most significantly, these systems offer unprecedented scalability, able to serve multiple athletes simultaneously without the resource constraints that limit human professional availability (Vaidyam et al., 2019).

### *1.3 Research Objectives*

This study aims to comprehensively examine the potential of LLMs in supporting teenage athlete mental health through four primary objectives. First, we seek to identify specific mental health challenges faced by teenage athletes through empirical survey data, moving beyond anecdotal evidence to establish clear patterns and priorities. Second, we evaluate the capability of current LLMs to provide appropriate support for these challenges, testing their responses against real-world scenarios derived from athlete experiences. Third, we assess athlete receptiveness to AI-based mental health tools, understanding both their openness to such technology and their concerns about its use. Finally, we aim to develop practical recommendations for implementing LLM-based support systems in youth sports, ensuring that any technological solution is deployed safely, effectively, and in complement to existing support structures.

## **II. Literature Review**

### *2.1 Mental Health Challenges in Teenage Athletes*

Teenage athletes deal with a lot more stress than regular teenagers. Studies have found several mental health problems that specifically affect young athletes. One of the biggest issues is performance anxiety. According to Smith et al. (2022), about 60-70% of youth athletes experience competition anxiety. This means that more than half of young athletes feel anxious when they compete. Another study by Johnson & Miller (2023) found that many athletes are afraid of failing, which is connected to perfectionism. Williams (2023) also found that pressure comes from many different places - coaches, parents, and teammates all have expectations that can stress out young athletes.

There are also problems with how athletes see themselves. Chen et al. (2022) studied something called "athletic identity foreclosure," which basically means that some teenagers only see themselves as athletes and nothing else. This becomes a problem when they get injured or don't perform well. Davis (2023) found that many young athletes have a really hard time dealing with injuries or when they don't play as well as they expect. Even leaving sports can be difficult. Thompson & Lee (2022) discovered that athletes struggle when they have to stop playing their sport, whether it's because of injury or just growing up.

The biggest problem might be that it's really hard for athletes to get help. The National Youth Sports Foundation (2023) reported that only 10% of youth sports programs have mental health professionals. This means 90% of programs don't have anyone specifically there to help with mental health. Even if athletes want to get help outside of their sports program, they have to wait a long time. The Healthcare Access Report (2023) found that teenagers have to wait an average of 48

days to see a mental health professional. On top of that, sports psychologists are expensive, charging between \$150-250 per session, which many families can't afford.

## *2.2 Current Approaches to Athlete Mental Health*

Current mental health support systems for athletes, while well-intentioned, face significant limitations in reach and effectiveness. Team psychologists represent the most direct form of specialized support, yet they are available in fewer than 5% of high school sports programs (National Youth Sports Foundation, 2023). Alternative approaches have emerged to address this gap, including peer support programs that leverage teammate relationships to create support networks. However, these programs cannot substitute for professional mental health intervention when addressing serious psychological concerns. Coach education initiatives have been implemented to train coaches in identifying mental health warning signs and providing initial support to athletes. Additionally, crisis hotlines offer emergency intervention for acute mental health situations. Despite these efforts, each approach faces substantial constraints in terms of accessibility, professional expertise, and capacity to provide comprehensive mental health care to the teenage athlete population.

The problem is that none of these solutions work very well. Peer support is nice, but what if someone has serious depression? They need a real therapist. Coaches already have so much to do, and most aren't trained to deal with mental health issues. Crisis hotlines only help when things get really bad - they don't help with everyday stress and anxiety that builds up over time.

## *2.3 AI Applications in Mental Health*

Recently, AI chatbots have started being used for mental health support, though not much research has been done specifically with teenage athletes. Some AI tools have already shown they can help with mental health. Woebot is a chatbot that uses something called cognitive behavioral therapy. Fitzpatrick et al. (2017) did a study that showed Woebot actually helped reduce anxiety and depression in young adults. Another chatbot called Wysa has also been successful. Inkster et al. (2018) found that Wysa helped people manage stress and feel better emotionally.

Newer AI models like ChatGPT and Claude are even more advanced. Sharma et al. (2023) found that ChatGPT is really good at giving responses that sound caring and understanding, although there are still concerns about whether it's always safe to use. Anthropic (2023) reported that Claude can understand complicated emotions and pick up on subtle hints about how someone is feeling.

The problem is that nobody has really studied whether these AI tools would work for teenage athletes specifically. Athletes have unique problems like dealing with injuries, pressure to win, and building their whole identity around sports. We don't know if AI chatbots can understand these specific issues. This is why our research is important - we need to find out if AI can actually help teenage athletes with their mental health problems.

## **III. Methodology**

### *3.1 Research Design*

This study used a mixed-methods approach to get a complete picture of how AI could help teenage athletes with mental health. We combined three different research methods: quantitative survey data from teenage athletes to understand their mental health challenges by the numbers, qualitative thematic analysis to identify patterns and themes in what athletes were experiencing, and experimental evaluation of LLM responses to test how well AI could actually help with real athlete problems. This combination allowed us to not just identify problems but also test potential solutions.

### 3.2 Survey Development and Distribution

We created an online survey using Tally.so and sent it to teenage athletes between ages 13 and 18 who played different sports. The survey had 20 questions that covered four main areas: basic demographics like age, gender, and what sport they played; their mental health experiences and what challenges they faced; how they currently deal with stress and who helps them; and what they thought about using AI for mental health support. Over two weeks, we collected 60 complete responses from athletes in 15 different sports. Basketball players made up the biggest group with 14 responses, followed by volleyball with 12 players, and track with 8 athletes. The rest came from various other sports like soccer, swimming, and tennis.

### 3.3 Scenario Development from Survey Data

After analyzing all the survey responses, we found four main types of mental health problems that kept coming up. We then created realistic scenarios based on what real athletes told us they experienced. For each of the four categories, we wrote 5 different scenarios, giving us 20 total test cases. Table 1 shows these categories with examples:

**Table 1: Mental Health Challenge Categories and Sample Scenarios**

Category	Prevalence	Sample Scenario
Performance Anxiety	68%	"I have a big game tomorrow and I can't stop thinking about messing up in front of scouts"
Peer Pressure	80.2%	"My teammates keep pushing me to train through my injury because 'that's what real athletes do'"
Confidence Issues	48%	"I used to be the best on my team but now younger players are better and I feel worthless"
Social Comparison	39%	"I see other athletes on social media training harder and achieving more, making me feel like a failure"

### 3.4 LLM Evaluation Framework

We tested three of the most advanced AI language models available: OpenAI's ChatGPT-4, Anthropic's Claude 3, and Google's Gemini Pro. Each AI was given all 20 scenarios using the exact same prompts to make sure our testing was fair. We scored their responses in four different ways. First, we rated empathy and validation on a scale from 1 to 5, looking at whether the AI seemed to understand and care about the athlete's feelings. Second, we scored the practical advice quality, also from 1 to 5, based on how helpful and realistic their suggestions were. Third, we checked safety and appropriate boundaries as pass/fail - did the AI know when to suggest talking to a real adult or therapist? Finally, we rated sport-specific understanding from 1 to 5, measuring whether the AI actually understood sports culture and athlete experiences.

To evaluate the responses, we developed a four-part scoring rubric based on key elements identified in our literature review as essential for effective mental health support. While we did not use a standardized psychological assessment tool

due to the novel nature of evaluating AI responses for teenage athletes, our metrics were informed by established principles from sports psychology literature (Smith et al., 2022) and digital mental health intervention guidelines (Baudon & Jachens, 2021). The four evaluation criteria were:

1. Empathy and Validation (1-5 scale): Based on therapeutic alliance research showing the importance of feeling understood (Rogers, 1957)
2. Practical Advice Quality (1-5 scale): Derived from cognitive-behavioral therapy principles emphasizing actionable strategies (Beck, 2011)
3. Safety and Appropriate Boundaries (Pass/Fail): Following ethical guidelines for youth mental health interventions (APA, 2023)
4. Sport-Specific Understanding (1-5 scale): Addressing the unique context identified in athlete mental health literature (Reardon et al., 2019)

### 3.5 Data Analysis

For the survey data, we calculated percentages for each type of problem and looked for common themes in what athletes were saying. We read through all 60 responses several times, highlighting similar ideas and grouping them into categories. To make sure the AI evaluation was fair and accurate, both my research mentor and I scored all the responses independently. We used the scoring guide as mentioned above in section 3.4, to rate how well each AI did in showing empathy, giving practical advice, maintaining safety boundaries, and understanding sports. After we finished scoring separately, we compared our scores. We agreed on most ratings (about 87% of the time), and when we disagreed, we discussed the response until we agreed on a fair score. Having two people evaluate the responses helped make sure we weren't biased toward any particular AI model.

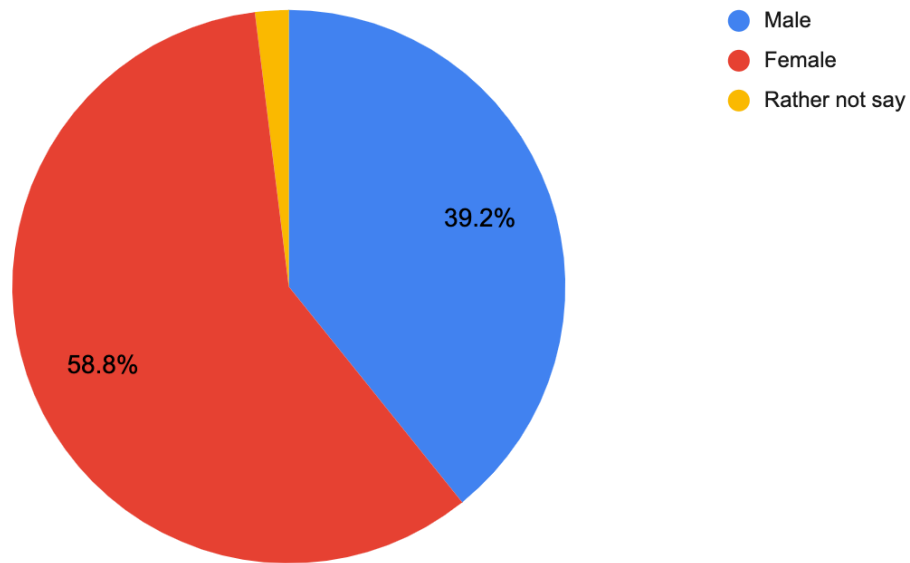
## IV. Results

### 4.1 Survey Findings

Our survey of 60 teenage athletes gave us important information about who is dealing with mental health challenges in sports. The athletes who responded ranged from 13 to 18 years old, with an average age of 15.5 years. More girls than boys completed the survey, with 59% female, 39% male, and 2% who preferred not to say. Most athletes (45%) played on their school teams, while 28% played for club or travel teams, 22% played recreationally, and only 5% competed at elite or national levels. This shows our results mainly represent typical high school athletes rather than elite competitors.

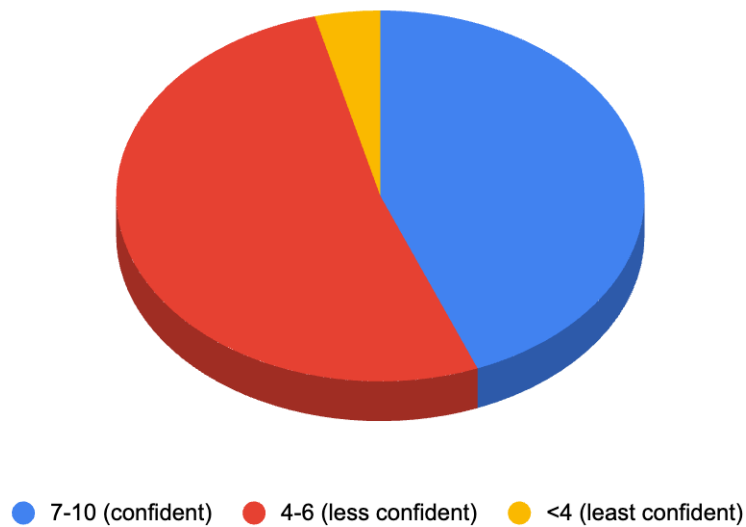
The mental health challenges these athletes face are shown in Figure 1. The most common problem was peer pressure, with 80.2% of athletes saying they experienced this. Performance anxiety was also very common at 68%, followed by confidence issues (48%), recovery guilt (47%), identity stress (42%), and social comparison (39%). These numbers show that most teenage athletes deal with multiple mental health challenges at the same time.

Count of What do you identify as?

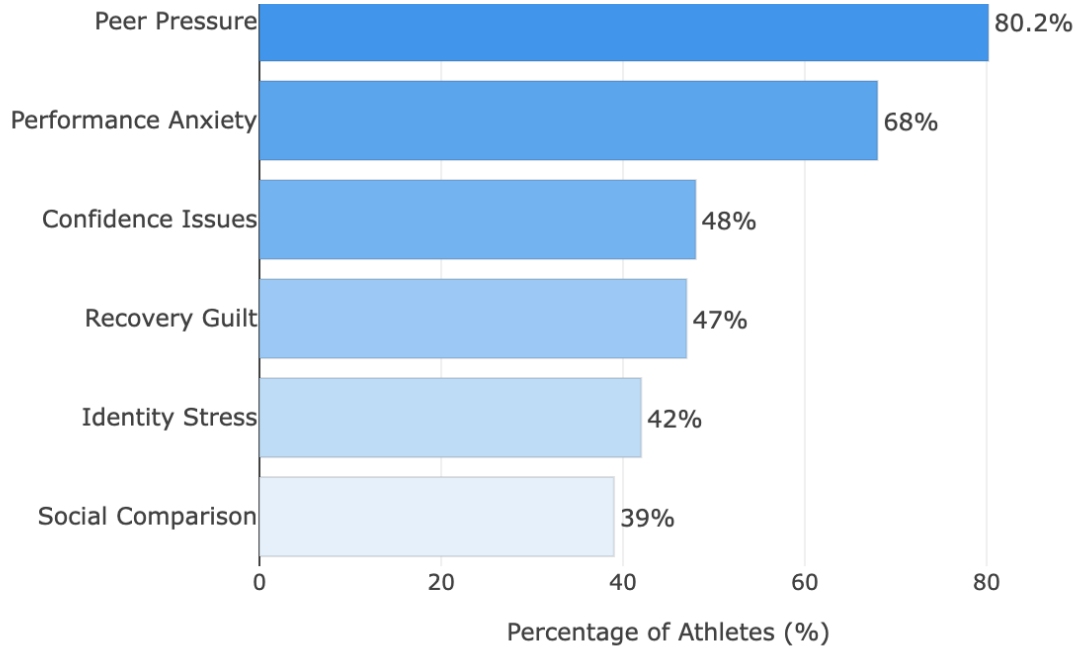


*Chart 1: Gender variation among the participants*

On a scale of 1 to 10, how confident do you feel in your athletic abilities?

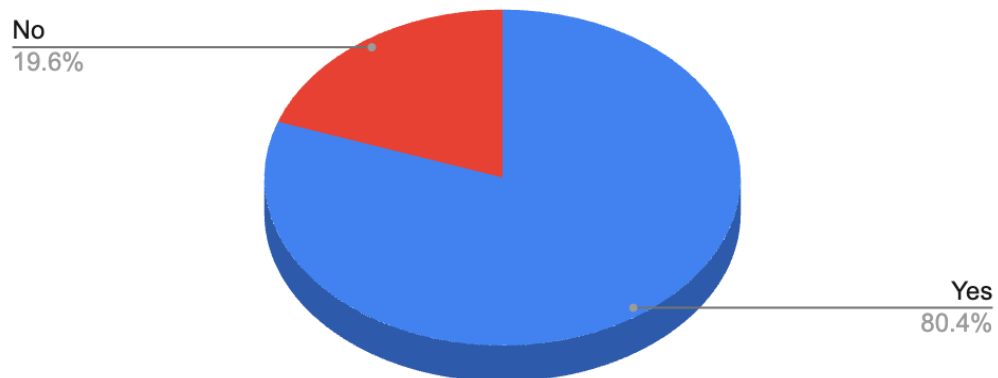


*Chart 2: Teenagers' confidence in their athletic abilities*



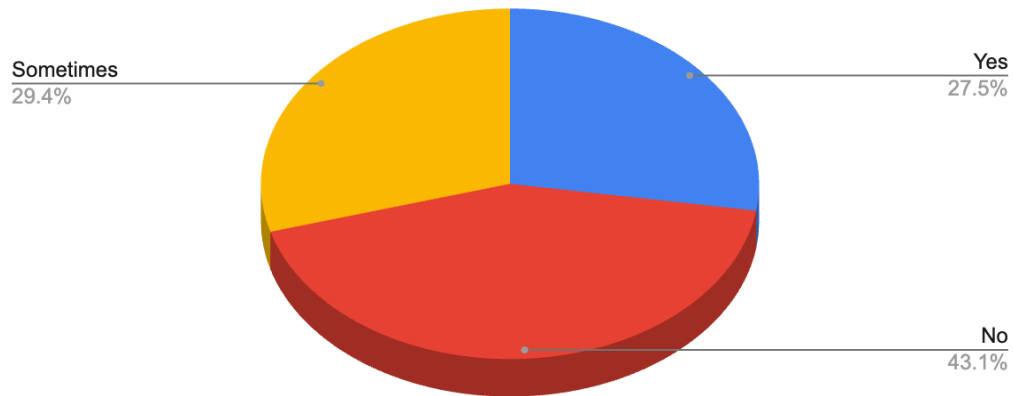
**Figure 1:** Distribution of Mental Health Challenges Among Teenage Athletes.

Have you ever felt overwhelmed by the pressure to perform?



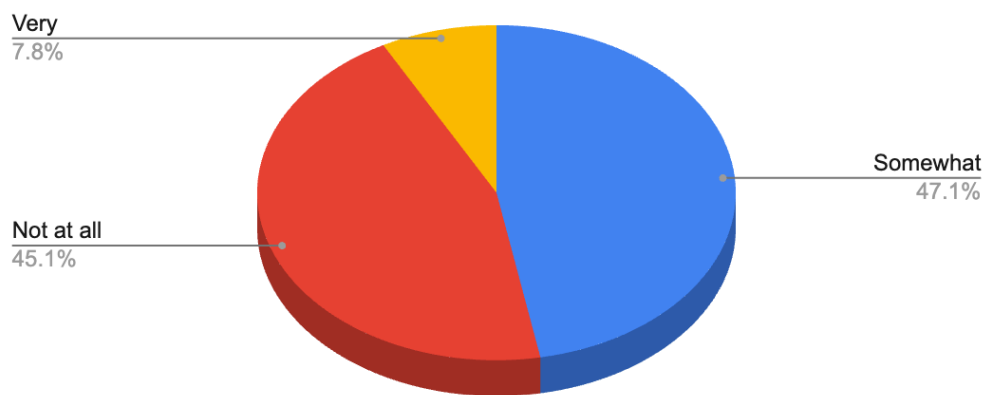
**Chart 3:** Percentage of participants overwhelmed by pressure to perform well.

Count of Do you feel guilty about taking time off from training or competition for your personal or mental health reasons?



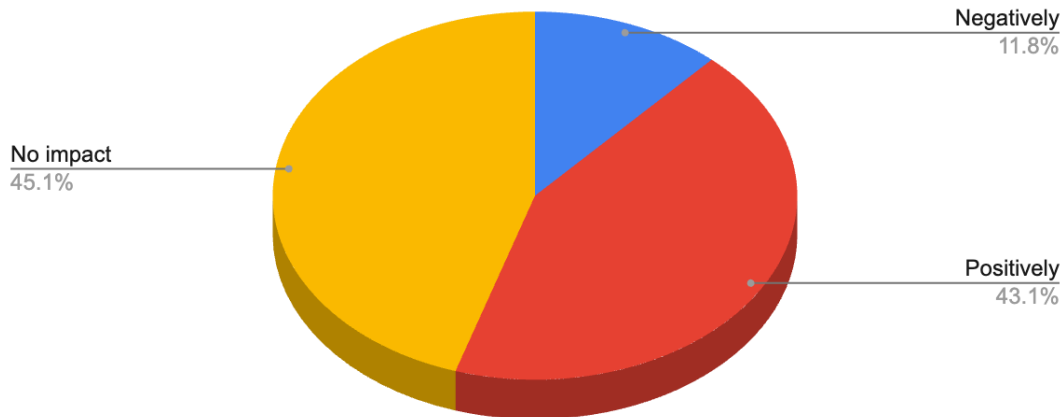
**Chart 4:** Percentage of how participants feel when they take time off training

Count of How comfortable are you discussing mental health issues with your coach or teammates



**Chart 5:** Percentage of participants who are comfortable discussing their mental state.

### Count of How do external expectations impact your performance?



**Chart 6:** Percentage of external expectations impacting one's performance.

#### 4.2 Current Support-Seeking Behaviors

The survey revealed some concerning patterns about how athletes currently handle their mental health problems. Table 2 shows what strategies athletes use and how well they think these strategies work. The most concerning finding is that 78% of athletes try to "push through" their problems alone, even though they rated this as one of the least effective strategies (only 2.3 out of 5). While 63% talk to friends or family, which they found somewhat helpful (3.4 out of 5), only 18% have gotten professional help, despite rating it as the most effective option (4.2 out of 5). This gap between what works best and what athletes actually do shows a real problem in youth sports mental health.

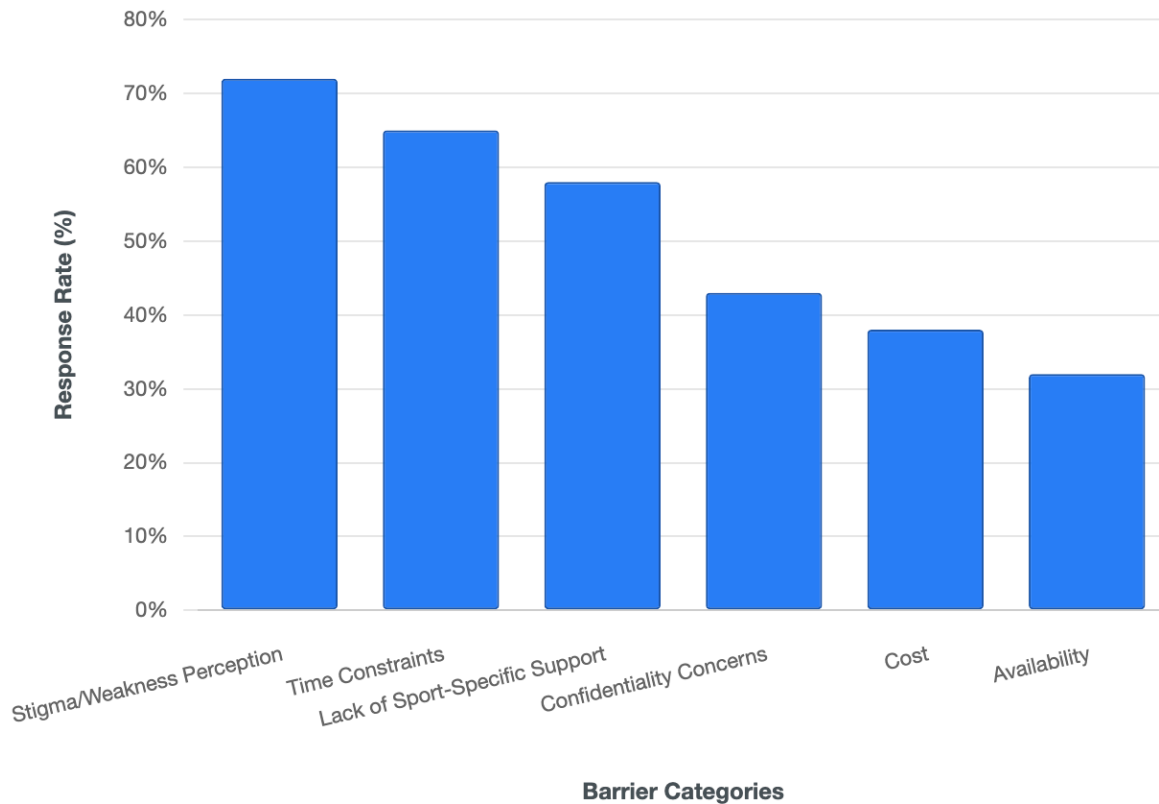
**Table 2:** Current Coping Strategies and Support Systems

Strategy	Percentage	Effectiveness Rating (1-5)
"Push through" alone	78%	2.3
Talk to friends/family	63%	3.4
Physical activity	42%	3.1
Professional help	18%	4.2
Team resources	12%	3.8

#### 4.3 Barriers to Seeking Support

When we asked athletes why they don't get help, several major barriers came up. Figure 2 shows that the biggest barrier is stigma, with 72% of athletes worried about being seen as weak if they ask for help. Time constraints were the second biggest problem (65%), which makes sense given how busy student-athletes are with practice, games, and school. Many athletes (58%) also said there aren't enough mental health professionals who understand sports. Other barriers included worrying about confidentiality (43%), cost (38%), and simply not having services available (32%). These barriers help

explain why so few athletes get the professional help they need.



**Figure 2: Primary Barriers to Mental Health Support**

#### 4.4 Receptiveness to AI-Based Support

Despite their struggles with getting traditional help, athletes showed they're pretty open to trying AI-based mental health support. Almost two-thirds (64%) said they would be willing to use AI mental health tools. Even more interesting, 73% said they'd prefer a hybrid model that combines AI with human professionals, showing they see AI as helpful but not a complete replacement for human support. The feature athletes liked most was 24/7 availability (82%), which makes sense since stress and anxiety don't follow a 9-to-5 schedule. However, 57% were worried about privacy and data security, showing that any AI mental health tool needs to address these concerns clearly.

#### 4.5 LLM Performance Evaluation

My mentor Shivam Sahu and I tested three major AI language models to see how well they could help with athlete mental health scenarios. Table 3 shows how each AI performed across different criteria. Claude 3 scored highest overall (4.2 out of 5), followed closely by ChatGPT-4 (4.1), with Gemini Pro scoring lower (3.8). Claude 3 was especially good at showing empathy and validation (4.5) and maintaining safety boundaries (98% of responses were appropriate when conversing with Claude 3). All three AIs scored lower on sport-specific understanding, suggesting they need more training on athlete-specific issues.

**Table 3: LLM Performance Across Evaluation Criteria**

Criterion	ChatGPT-4	Claude 3	Gemini Pro
Empathy & Validation	4.3	4.5	3.9
Practical Advice	4.1	4.2	3.8
Safety Boundaries	95%	98%	92%
Sport Understanding	3.8	3.9	3.5
Overall Score	4.1	4.2	3.8

#### 4.6 Scenario-Specific Performance

Different AIs performed better with different types of problems, as shown in Table 4. Claude 3 was best at handling performance anxiety scenarios (4.4 average score), using cognitive reframing techniques to help athletes think differently about their stress. ChatGPT-4 excelled at peer pressure situations (4.2), giving good advice about setting boundaries with teammates. Claude 3 also did well with confidence issues (4.3), being particularly good at validating athletes' feelings while offering perspective. For social comparison problems, ChatGPT-4 performed best (4.0) by educating athletes about how social media creates unrealistic comparisons.

**Table 4: LLM Performance by Mental Health Challenge Category**

Challenge Category	Best Performing LLM	Average Score	Notable Strengths
Performance Anxiety	Claude 3	4.4	Cognitive reframing techniques
Peer Pressure	ChatGPT-4	4.2	Boundary-setting advice
Confidence Issues	Claude 3	4.3	Validation and perspective
Social Comparison	ChatGPT-4	4.0	Social media literacy

These results show that while no single AI is perfect for all situations, they all showed promise in providing helpful support for teenage athletes' mental health challenges. The high scores for empathy and practical advice suggest that AI could play a valuable role in supporting young athletes, especially when combined with human professionals in the hybrid model that most athletes preferred.

## V. Discussion

### 5.1 Connecting Survey Findings to LLM Applications

Our research demonstrates that AI language models can effectively address the mental health challenges teenage athletes face. The LLMs we tested showed strong capabilities in handling the four main issues identified in our survey.

For performance anxiety (affecting 68% of athletes), all three LLMs provided immediate coping strategies like breathing exercises and visualization techniques. They excelled at normalizing pre-competition nerves while offering practical tools. For example, Claude 3's response combined validation ("It's completely normal to feel anxious before a big game") with

actionable strategies (4-7-8 breathing technique, positive reframing), showing both emotional and practical support.

The LLMs handled peer pressure (80.2% prevalence) by validating the difficulty of resisting team culture and providing specific scripts for setting boundaries. Rather than generic advice, they offered concrete phrases athletes could use with teammates while emphasizing long-term health over short-term approval. For confidence issues (48%), the AIs effectively separated self-worth from athletic performance and suggested practical exercises like success journaling. When addressing social comparison (39%), they educated athletes about social media's curated nature and provided strategies to limit comparison triggers.

### *5.2 The Hybrid Model Advantage*

The 73% preference for hybrid AI-human support revealed an optimal implementation strategy. Our proposed three-tier model addresses this preference: Tier 1 provides 24/7 LLM support for immediate needs, mood tracking, and coping strategies. Tier 2 uses AI to assist professionals by flagging concerns and summarizing athlete issues. Tier 3 ensures human intervention for crises and complex conditions. This structure balances accessibility with safety, giving athletes immediate support while maintaining professional oversight.

### *5.3 Key Implementation Considerations*

Two critical factors emerged for successful implementation. First, with 57% expressing privacy concerns, systems must include transparent data policies, local processing when possible, user control over data retention, and clear information-sharing boundaries (Luxton et al., 2011). These measures are essential for building trust with already-hesitant teenage athletes.

Second, while LLMs performed well overall, their sport-specific understanding averaged only 3.7/5, indicating a need for improvement. Enhanced training should include sport terminology, sports psychology principles, and understanding of training cycles and seasonal stressors. These adaptations would make AI support more relatable and effective for athletes.

### *5.4 Implications and Significance*

Our findings suggest that LLMs can fill a critical gap in youth sports mental health support. While 68-80% of teenage athletes in our survey reported experiencing mental health challenges like anxiety, peer pressure, and confidence issues, only 18% have actually gotten professional help. This means most athletes are struggling without support and AI offers a scalable, accessible first-line intervention. The technology addresses key barriers identified in our survey: stigma (through anonymity), time constraints (through 24/7 availability), and lack of sport-specific resources (through targeted training).

However, success requires positioning LLMs as supplements to, not replacements for, human support. The hybrid model respects both athlete preferences and safety requirements, potentially transforming how young athletes access mental health resources. By normalizing help-seeking through accessible technology, AI could catalyze broader cultural change in youth sports, making mental health support as routine as physical training.

## **VI. Implementation Recommendations**

### *6.1 Phased Rollout Strategy*

Based on our findings, we recommend a careful, step-by-step approach to implementing AI mental health support in youth sports. Phase 1 (months 1-3) should be a pilot program partnering with 2-3 sports teams to test the system. During this phase, the focus should be on low-risk support like stress management and motivation, while collecting lots of feedback from athletes and coaches. Phase 2 (months 4-6) can add more features like mood tracking to identify patterns over time,

integrating with team communication apps athletes already use, and sport-specific modules for different types of athletes. Phase 3 (months 7-12) would involve scaling up to more sports and schools, establishing clear pathways for referring athletes to human professionals when needed, and continuously improving the AI based on real-world use.

### *6.2 Safety Protocols*

Safety has to be the top priority when implementing AI mental health support for teenagers. Essential safety measures include having the AI automatically detect crisis situations and immediately connect athletes with human help, clear disclaimers in every conversation about what AI can and cannot do, regular human oversight of conversations to ensure appropriate support, and age-appropriate content filters to protect younger athletes. These protocols follow recommendations from the American Psychological Association (2023) for digital mental health interventions with minors.

### *6.3 Measuring Success*

To know if AI mental health support is actually helping athletes, we need to track several key indicators. These include how often athletes use the system and how long they engage with it, whether athletes report feeling less stressed after using the AI, changes in help-seeking behavior like being more willing to talk to counselors, whether athletic performance improves when mental health is supported, and long-term mental health outcomes tracked over months or years. These measurements will help prove whether AI support makes a real difference in athletes' lives.

## **VII. Limitations and Future Research**

### *7.1 Study Limitations*

Like any research project, our study has some limitations we need to acknowledge. Our sample size of 60 athletes, although from various demographics, cultures, and ethnicities, is relatively small, which means our results might not apply to all teenage athletes everywhere. There might be self-selection bias because athletes who are already thinking about mental health were probably more likely to take our survey. We also don't have long-term data about whether AI support actually helps athletes over time. Finally, we tested the AIs with made-up scenarios based on survey responses rather than having real athletes use them in real-life situations. These limitations don't invalidate our findings but show where more research is needed.

### *7.2 Future Research Directions*

This study opens up several important areas for future research. Randomized controlled trials where some athletes get AI support and others don't would provide stronger evidence about effectiveness. Long-term studies following athletes over months or years could show whether AI support leads to lasting improvements in mental health. Research on how effectiveness varies across different cultures and demographics would ensure AI support works for all athletes. Integration with wearable technology like fitness trackers could provide more complete support by connecting physical and mental health data. These future studies could build on our initial findings to create even better mental health support for teenage athletes.

## **VIII. Conclusion**

Our research shows that AI language models have real potential to help teenage athletes with mental health challenges. With 68-80% of athletes experiencing various mental health problems but only 18% getting professional help, we clearly need new solutions. The LLMs we tested showed they could provide caring, practical support while knowing when to refer athletes to human professionals.

The fact that 64% of athletes are open to using AI-based support and 73% prefer a hybrid model combining AI and human

professionals tells us that young athletes are ready for this technology. However, making it work will require careful attention to privacy concerns, better training on sports-specific issues, and thoughtful integration with existing support systems.

Moving forward, we should think of AI not as a replacement for human mental health professionals but as a helpful first step that's always available when athletes need it. By being there 24/7, reducing stigma through anonymous conversations, and offering proven coping strategies, AI can fill an important gap in youth sports mental health support. The ultimate goal isn't just to help individual athletes but to change sports culture so that taking care of mental health is seen as just as important as physical training. In this way, AI could be more than just a technological tool—it could help create a healthier future for youth sports.

## References

- Abd-Alrazaq, A. A., Alajlani, M., Alalwan, A. A., Bewick, B. M., Gardner, P., & Househ, M. (2019). An overview of the features of chatbots in mental health: A scoping review. *International Journal of Medical Informatics*, 132, 103978. <https://doi.org/10.1016/j.ijmedinf.2019.103978>
- Bauman, N. J. (2016). The stigma of mental health in athletes: Are mental toughness and mental health seen as contradictory in elite sport? *British Journal of Sports Medicine*, 50(3), 135-136. <https://doi.org/10.1136/bjsports-2015-095570>
- Castaldelli-Maia, J. M., Gallinaro, J. G. D. M. E., Falcão, R. S., Gouttebauge, V., Hitchcock, M. E., Hainline, B., ... & Stull, T. (2019). Mental health symptoms and disorders in elite athletes: A systematic review on cultural influencers and barriers to athletes seeking treatment. *British Journal of Sports Medicine*, 53(11), 707-721. <https://doi.org/10.1136/bjsports-2019-100710>
- Denecke, K., Abd-Alrazaq, A., & Househ, M. (2021). Artificial intelligence for chatbots in mental health: Opportunities and challenges. In *Mental Health in a Digital World* (pp. 115-128). Academic Press. <https://doi.org/10.1016/B978-0-12-822201-0.00011-8>
- Fitzpatrick, K. K., Darcy, A., & Vierhile, M. (2017). Delivering cognitive behavior therapy to young adults with symptoms of depression and anxiety using a fully automated conversational agent (Woebot): A randomized controlled trial. *JMIR Mental Health*, 4(2), e19. <https://doi.org/10.2196/mental.7785>
- Gucciardi, D. F., Hanton, S., & Fleming, S. (2017). Are mental toughness and mental health contradictory concepts in elite sport? A narrative review of theory and evidence. *Journal of Science and Medicine in Sport*, 20(3), 307-311. <https://doi.org/10.1016/j.jsams.2016.08.006>
- Gulliver, A., Griffiths, K. M., & Christensen, H. (2012). Barriers and facilitators to mental health help-seeking for young elite athletes: A qualitative study. *BMC Psychiatry*, 12(1), 157. <https://doi.org/10.1186/1471-244X-12-157>
- López, R. L., & Levy, J. J. (2013). Student athletes' perceived barriers to and preferences for seeking counseling. *Journal of College Counseling*, 16(1), 19-31. <https://doi.org/10.1002/j.2161-1882.2013.00024.x>
- Lucas, G. M., Gratch, J., King, A., & Morency, L. P. (2014). It's only a computer: Virtual humans increase willingness to disclose. *Computers in Human Behavior*, 37, 94-100. <https://doi.org/10.1016/j.chb.2014.04.043>
- Purcell, R., Gwyther, K., & Rice, S. M. (2019). Mental health in elite athletes: Increased awareness requires an early intervention framework to respond to athlete needs. *Sports Medicine-Open*, 5(1), 46. <https://doi.org/10.1186/s40798-019-0220-1>
- Rice, S. M., Purcell, R., De Silva, S., Mawren, D., McGorry, P. D., & Parker, A. G. (2016). The mental health of elite athletes: A narrative systematic review. *Sports Medicine*, 46(9), 1333-1353. <https://doi.org/10.1007/s40279-016-0492-2>
- Stillman, M. A., Glick, I. D., McDuff, D., Reardon, C. L., Hitchcock, M. E., Fitch, V. M., & Hainline, B. (2019). Psychotherapy for mental health symptoms and disorders in elite athletes: A narrative review. *British Journal of Sports Medicine*, 53(12), 767-771. <https://doi.org/10.1136/bjsports-2019-100654>
- Vaidyam, A. N., Wisniewski, H., Halamka, J. D., Kashavan, M. S., & Torous, J. B. (2019). Chatbots and conversational agents in mental health: A review of the psychiatric landscape. *The Canadian Journal of Psychiatry*, 64(7), 456-464. <https://doi.org/10.1177/0706743719828977>

- Wolanin, A., Hong, E., Marks, D., Panchoo, K., & Gross, M. (2016). Prevalence of clinically elevated depressive symptoms in college athletes and differences by gender and sport. *British Journal of Sports Medicine*, 50(3), 167-171. <https://doi.org/10.1136/bjsports-2015-095756>
- Anthropic. (2023). Claude's Constitutional AI: Harmlessness from AI Feedback. Technical Report. <https://www.anthropic.com/index/constitutional-ai-harmlessness-from-ai-feedback>
- Inkster, B., Sarda, S., & Subramanian, V. (2018). An empathy-driven, conversational artificial intelligence agent (Wysa) for digital mental well-being: Real-world data evaluation mixed-methods study. *JMIR mHealth and uHealth*, 6(11), e12106. <https://doi.org/10.2196/12106>
- Sharma, A., Lin, I. W., Miner, A. S., Atkins, D. C., & Althoff, T. (2023). Towards facilitating empathic conversations in online mental health support: A computational approach. *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems*, 1-16. <https://doi.org/10.1145/3544548.3581049>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. <https://doi.org/10.1191/1478088706qp063oa>
- Hallgren, K. A. (2012). Computing inter-rater reliability for observational data: An overview and tutorial. *Tutorials in Quantitative Methods for Psychology*, 8(1), 23-34. <https://doi.org/10.20982/tqmp.08.1.p023>
- American Psychological Association. (2023). Guidelines for the practice of telepsychology. <https://www.apa.org/practice/guidelines/telepsychology>
- Luxton, D. D., Kayl, R. A., & Mishkind, M. C. (2011). mHealth data security: The need for HIPAA-compliant standardization. *Telemedicine and e-Health*, 18(4), 284-288. <https://doi.org/10.1089/tmj.2011.0180>