



# Investigating the User Experience of AI Chatbots in Delivering Mental Health Support to Athletes

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## ABSTRACT

This study aimed to explore how athletes experience and perceive the use of artificial intelligence (AI) chatbots as a source of mental health support, focusing on effectiveness, usability, emotional connection, and limitations. A qualitative exploratory design was employed. Twenty-two athletes from diverse sports disciplines in Malaysia were recruited using purposive sampling. Data were collected through semi-structured, in-depth interviews conducted online to allow flexible participation and confidentiality. The sample size was guided by theoretical saturation, reached when no new themes emerged. All interviews were audio-recorded, transcribed verbatim, and analyzed using thematic analysis. NVivo 14 software supported systematic coding, with open, axial, and selective coding applied iteratively to generate categories and subthemes. Rigor and trustworthiness were ensured through member checking, peer debriefing, and an audit trail. Four main themes emerged: perceived effectiveness of AI chatbots, usability and interaction experience, emotional and relational dynamics, and barriers and limitations. Athletes reported improved mental well-being, reduced competition-related anxiety, and personalized coping strategies. They valued intuitive interfaces, empathetic conversational style, and privacy features, which encouraged engagement and disclosure. Chatbots fostered a sense of trust and emotional validation but sometimes lacked depth and produced repetitive responses. Barriers included occasional technical instability, insufficient long-term personalization, cultural mismatches, and data security concerns. Despite these limitations, participants viewed chatbots as valuable early support tools and stigma-free entry points to mental health care. AI chatbots show promise in enhancing access to psychological support for athletes, offering discreet, immediate, and personalized assistance. However, improving cultural sensitivity, personalization, technical reliability, and data transparency is crucial for sustained engagement and safety in sports mental health contexts.

**Keywords:** artificial intelligence; chatbots; user experience; mental health support; athletes; qualitative research; sports psychology

## 1. Introduction

Mental health has emerged as a pivotal determinant of athletic performance, resilience, and long-term well-

being. Elite and non-elite athletes are exposed to intense psychological demands arising from competition pressure, injuries, public scrutiny, and career uncertainty, often

resulting in stress, anxiety, or depressive symptoms (1, 2). However, despite growing awareness, many athletes delay or avoid seeking professional mental health support because of stigma, access barriers, and fear of judgment (3, 4). Against this backdrop, artificial intelligence (AI) chatbots have emerged as promising digital mental health tools that provide discreet, immediate, and scalable support (5, 6).

AI-powered conversational agents have advanced from simple rule-based systems to sophisticated natural language processing (NLP) and machine learning (ML)-driven models capable of simulating therapeutic dialogues and offering psychoeducation (7, 8). Tools such as *AI counsellors*, *digital therapists*, and *mind-balance assistants* now aim to detect emotional distress, recommend coping strategies, and guide users toward professional help when needed (9, 10). Within sport, this is particularly important because athletes often need rapid, confidential, and culturally sensitive interventions during high-pressure contexts such as competitions or injury recovery (11, 12).

Contemporary research highlights several advantages of AI chatbots: they are cost-effective, available around the clock, and capable of delivering scalable support without replacing clinicians (13, 14). Studies show chatbots can reduce loneliness, anxiety, and social isolation when designed with human-like empathy and personalization (2, 15). They may also serve as “first-line support,” identifying early signs of distress and prompting timely referrals (16, 17). However, evidence of their effectiveness and acceptability remains mixed. While some users find AI-driven interactions motivating and stigma-reducing (18, 19), others report limitations such as shallow responses, emotional disconnect, and privacy concerns (4, 20).

The integration of **generative AI** represents a significant leap forward. Large language models can generate contextually relevant, emotionally attuned, and personalized feedback (21, 22). This capability aligns with mental health support’s nuanced demands, where empathy and tailored advice are critical. Nonetheless, scholars caution about **ethical and safety issues**, including the risk of misinformation, overreliance, or harmful suggestions if chatbots are poorly monitored (13, 14). Calls for rigorous testing, transparency, and human oversight are prominent (4, 20).

While AI chatbots have been evaluated among general and clinical populations, their application in athletic mental health remains underexplored. Athletes have unique psychosocial profiles and performance pressures that may influence technology use and acceptance (11, 23). Previous explorations show digital interventions can improve mood and reduce anxiety in sports settings when tailored to user context (11, 15). Chatbots could complement existing support systems by offering just-in-time coping strategies, such as pre-competition relaxation routines, injury recovery motivation, or guided self-talk (6, 24). Importantly, these features might help athletes overcome help-seeking barriers like fear of disclosure to coaches or peers (3, 19).

However, potential mismatches between chatbot design and athletes’ needs persist. Generic content may not address sport-specific stressors or culturally grounded concerns (1, 24). Technical limitations, low personalization, and absence of high-performance psychological strategies reduce adoption (9, 14). Moreover, trust and data security are critical: athletes often worry about confidentiality breaches affecting their careers (16, 17). Evaluating these experiences qualitatively is essential to improve chatbot relevance and safety for this group.

The concept of user experience (UX) goes beyond usability; it includes perceptions of empathy, safety, trust, and emotional connection. Research shows that when mental health chatbots communicate warmly and adapt to user needs, they foster engagement and long-term adherence (2, 20). Conversely, robotic or repetitive conversations drive disengagement (7, 14). Among athletes, positive UX could translate into sustained use during crucial psychological phases, such as rehabilitation from injury or pre-competition stress management (11, 23). Inadequate UX risks widening support gaps rather than closing them (8, 25).

Several scholars emphasize culturally responsive and context-sensitive chatbot design to ensure inclusivity (3, 24). For athletes in Malaysia and other multicultural contexts, language flexibility, respect for cultural norms, and adaptation to sport-specific idioms could be crucial for acceptance and perceived safety (16, 21). Simultaneously, emerging frameworks propose hybrid models combining chatbot self-help with human supervision to safeguard quality and ethical compliance (14, 20).

Despite rapid technological advances, most existing evidence relies on pilot testing and technical performance rather than lived experiences of end users (1, 15). Quantitative outcome studies show potential reductions in stress and anxiety (2, 23), but they rarely capture the nuanced emotional and relational aspects of human-AI interaction (13, 18). Particularly in sports, qualitative insights into athletes' perceptions, trust dynamics, and daily integration of AI support are limited. As highlighted by recent interdisciplinary analyses, understanding end-user narratives can inform safer, more personalized, and engaging mental health chatbot solutions (17, 20).

Qualitative inquiry is valuable because it allows exploration of contextual barriers—from performance culture to technology literacy—and facilitators such as anonymity and flexible access (3, 19). It also helps uncover ethical tensions athletes may feel, such as balancing privacy with the need for tailored interventions (13, 14). Furthermore, thematic analysis of user narratives can guide developers to refine emotional resonance, safety features, and sport-oriented content (6, 7).

Given these gaps, this study investigates the user experience of AI chatbots in delivering mental health support to athletes in Malaysia.

## 2. Methods and Materials

### 2.1. Study Design and Participants

This study employed a qualitative exploratory design to gain an in-depth understanding of athletes' experiences using AI chatbots for mental health support. A purposive sampling strategy was used to recruit participants who had direct experience with AI-based mental health chatbots, ensuring the inclusion of individuals capable of providing rich and relevant data. The sample consisted of 22 athletes from various sports disciplines, including both individual and team-based sports, who were currently residing in Malaysia. Inclusion criteria required participants to (a) be at least 18 years old, (b) have used an AI chatbot for mental health support for a minimum of one month, and (c) be fluent in English or Malay. The final sample size was determined by theoretical saturation, defined as the point at which no new codes, themes, or insights emerged from subsequent interviews.

### 2.2. Measure

Data were gathered through semi-structured, in-depth interviews designed to elicit participants' personal experiences and perceptions of using AI chatbots for mental health support. An interview guide with open-ended questions was developed based on relevant literature and expert consultation in sports psychology and digital health. Questions focused on user interaction with the chatbot, perceived usefulness, trust and confidentiality, emotional engagement, and challenges or limitations encountered. Interviews were conducted online via secure video conferencing platforms to ensure accessibility and participant comfort. Each interview lasted approximately 45 to 75 minutes and was audio-recorded with participants' informed consent. All recordings were transcribed verbatim for analysis.

### 2.3. Data Analysis

A thematic analysis approach was adopted to systematically identify, analyze, and interpret patterns within the data. Transcribed interviews were imported into NVivo 14 software to facilitate data management and coding. The analysis followed an iterative process: initial open coding was performed to capture key concepts, followed by axial coding to refine and group similar codes into broader categories. Finally, selective coding was used to integrate these categories into overarching themes that captured the essence of participants' experiences. To ensure rigor and trustworthiness, the analysis incorporated strategies such as member checking with selected participants to validate interpretations, peer debriefing with experienced qualitative researchers, and maintaining an audit trail documenting analytic decisions.

## 3. Findings and Results

A total of 22 athletes participated in the study. Participants ranged in age from 19 to 34 years ( $M = 25.7$ ), with 12 men (54.5%) and 10 women (45.5%). They represented a variety of sports, including team sports such as football ( $n = 6$ , 27.3%) and basketball ( $n = 4$ , 18.2%), and individual sports such as athletics ( $n = 5$ , 22.7%), swimming ( $n = 4$ , 18.2%), tennis ( $n = 2$ , 9.1%), and martial arts ( $n = 1$ , 4.5%). Most participants ( $n = 14$ , 63.6%) had been using AI

chatbots for three to six months, while a smaller group ( $n = 8$ , 36.4%) reported use for more than six months. The majority were national-level athletes ( $n = 13$ , 59.1%), followed by university-level athletes ( $n = 6$ , 27.3%) and

professional club athletes ( $n = 3$ , 13.6%). All participants were based in Malaysia, and most reported using English as their primary language when interacting with the chatbot ( $n = 17$ , 77.3%), while the rest preferred Malay ( $n = 5$ , 22.7%).

**Table 1**

*The Results of Qualitative Analysis*

Category (Main Theme)	Subcategory	Concepts (Open Codes)
1. Perceived Effectiveness of AI Chatbots	Improved Mental Well-being	emotional relief after sessions; reduced anxiety before competition; increased self-confidence; sense of support; improved focus during training
	Accessible Psychological Support	24/7 availability; no waiting time for help; immediate responses; ease of access via phone; flexible scheduling
	Personalized Coping Strategies	tailored breathing exercises; custom motivational messages; goal tracking; adaptive recommendations; feedback matching emotional state
	Performance Enhancement	visualization prompts; motivational reinforcement; pre-competition calming guidance; performance routine reminders
	Early Problem Identification	detection of mood changes; alerts about stress escalation; nudges to seek professional help
2. Usability and Interaction Experience	Interface Simplicity	clear navigation; intuitive menus; easy onboarding; minimal technical barriers
	Communication Style	conversational tone; empathetic wording; culturally sensitive language; non-judgmental feedback; motivational prompts
	Technical Stability	fast response time; minimal glitches; reliable data saving; offline usability
	Engagement Features	gamification elements; daily check-ins; progress badges; interactive exercises
	Privacy Assurance	anonymity features; control over data sharing; clear privacy policy; no forced identification
3. Emotional and Relational Dynamics	Accessibility Options	multi-language support; voice/text input flexibility; mobile-friendly interface
	Trust Building	consistent responses; respectful language; transparency of AI capabilities; safe emotional disclosure
	Emotional Validation	feeling understood; supportive responses to distress; empathy simulation; positive reinforcement
	Relational Substitution	sense of companionship; replacing human counselor temporarily; less fear of judgment; perceived empathy despite AI nature
	Stigma Reduction	safe alternative to therapy; avoiding social labeling; discreet mental health support
4. Barriers and Limitations	Empowerment and Autonomy	control over conversation pace; self-reflection encouraged; guided decision-making; improved emotional literacy
	Technical Barriers	system crashes; connectivity issues; slow loading time; incompatibility with some devices
	Limited Personalization	generic advice; repetitive responses; lack of deep understanding; poor adaptation to context
	Emotional Disconnect	robotic replies; inability to pick up subtle cues; lack of deep empathy; frustration with scripted answers
	Confidentiality Concerns	uncertainty about data use; fear of leaks; mistrust of AI privacy promises
	Cultural and Language Barriers	non-Malay cultural references; translation inaccuracies; inappropriate idioms; difficulty with sport-specific jargon
	Preference for Human Interaction	desire for therapist's emotional presence; nuanced advice missing; value of nonverbal cues

## 1. Perceived Effectiveness of AI Chatbots

**Improved Mental Well-being.** Participants widely described emotional relief and better psychological states after interacting with the chatbot. They reported less pre-competition anxiety and increased self-confidence. One athlete explained, *“When I talk to the chatbot before a match, my nerves calm down and I feel more ready to focus.”* Others said that regular check-ins helped maintain motivation and reduce stress during training cycles.

**Accessible Psychological Support.** Athletes appreciated the **24/7 availability** and immediate responses. They contrasted this with waiting weeks for a therapist appointment. *“At night when I can't sleep before a big game, I can just message it and get some guidance,”* said one football player. Ease of access through mobile phones made help feel close and constant.

**Personalized Coping Strategies.** Several participants highlighted the chatbot's ability to provide tailored exercises

and feedback. They received personalized motivational notes, reminders for breathing exercises, and progress tracking. As a sprinter shared, *“It asks me if I want to do a quick relaxation exercise before training—it feels made for me.”*

**Performance Enhancement.** Beyond mental well-being, athletes said the chatbot assisted with sport-specific focus. They valued visualization prompts and motivational reinforcement before competitions. *“It gives me a mental warm-up routine—reminds me how to get in the zone,”* commented a tennis player.

**Early Problem Identification.** Some athletes reported that the chatbot detected emotional decline and nudged them to seek further support. *“It noticed I was typing more about being tired and sad and suggested talking to someone professional,”* said a long-distance runner. These early alerts were described as “preventive” and “life-saving.”

## 2. Usability and Interaction Experience

**Interface Simplicity.** Users praised the clean, intuitive design. Even those unfamiliar with mental health apps found it easy to navigate. One interviewee noted, *“It’s simple; you just click start, answer, and it guides you—no confusion.”*

**Communication Style.** The chatbot’s conversational and empathetic tone was a major strength. Many appreciated the non-judgmental style and culturally sensitive phrasing. *“It speaks in a friendly way, not robotic or cold,”* shared a basketball player. Others valued motivational prompts like “You’re making progress; keep going.”

**Technical Stability.** Participants found the platform generally reliable, with fast response time and minimal glitches. However, a few noted occasional connectivity interruptions. *“It’s mostly stable, but once or twice it froze mid-chat,”* said a swimmer.

**Engagement Features.** Gamified elements, such as badges and streaks, kept users motivated. Daily check-ins encouraged habit formation. *“I like the badges for keeping up my sessions; it’s small but keeps me going,”* explained a triathlete.

**Privacy Assurance.** Athletes valued anonymity and control over personal information. Some felt safer sharing vulnerabilities. One said, *“I don’t have to tell my name or team; it feels private.”* Clear privacy statements built trust.

**Accessibility Options.** Features such as multi-language support and flexible input modes helped. *“I could switch to*

*Malay when I wanted to express emotions better,”* a participant noted. Mobile compatibility also enabled use during travel and training camps.

## 3. Emotional and Relational Dynamics

**Trust Building.** Many athletes felt the chatbot established trust by being consistent and respectful. *“It doesn’t judge, it just listens and gives ideas,”* reported a rugby player. Over time, participants became more open in sharing personal struggles.

**Emotional Validation.** Several described feeling genuinely understood. The AI’s supportive responses to distress increased confidence in using it. One athlete said, *“When I type that I’m overwhelmed, it replies with comfort—it feels like someone cares.”*

**Relational Substitution.** For some, the chatbot temporarily filled a relational gap when human help was unavailable. *“It’s not a real friend, but when I’m alone after practice, it’s someone to talk to,”* noted a gymnast. However, most viewed this as short-term rather than replacing therapists entirely.

**Stigma Reduction.** The anonymity of AI support reduced fear of social judgment. *“I don’t want my coach or teammates to know I’m struggling; this is safe,”* explained one football player. Such discretion encouraged early help-seeking.

**Empowerment and Autonomy.** Athletes felt greater control over their mental health journey. They valued pacing conversations and reflecting privately. *“I can decide how deep to go, and it makes me think about my feelings,”* said a marathon runner.

## 4. Barriers and Limitations

**Technical Barriers.** Some users faced system crashes or slow response times. *“During a weak internet connection, it just stops,”* said a diver. These interruptions occasionally discouraged continued use.

**Limited Personalization.** Several athletes found responses repetitive or too generic over time. *“It keeps saying the same tips; after a while, I want something deeper,”* commented a basketball player.

**Emotional Disconnect.** Despite improvements, some interactions still felt robotic. *“It tries to sound caring, but sometimes it misses the emotion,”* shared a track cyclist. This gap limited trust for more complex emotional struggles.



**Confidentiality Concerns.** A minority feared their data might not be fully secure. *“I worry if my chats could be leaked or analyzed,”* said a fencer, highlighting the need for stronger transparency.

**Cultural and Language Barriers.** Occasional mismatches in cultural context or sport-specific jargon emerged. *“Sometimes it uses Western examples that don’t fit here,”* one athlete noted. Translation imperfections in Malay also surfaced.

**Preference for Human Interaction.** Some ultimately felt human therapists offered richer empathy and nuanced advice. *“It’s helpful, but you can’t replace a real person’s warmth,”* said a swimmer.

#### 4. Discussion and Conclusion

The present study explored how athletes in Malaysia experience AI chatbots when seeking mental health support. Thematic analysis revealed four broad categories: perceived effectiveness, usability and interaction experience, emotional and relational dynamics, and barriers and limitations. These findings both confirm and extend previous research on AI mental health interventions and highlight nuances unique to athletic contexts.

##### 5. Perceived effectiveness and psychological outcomes

Participants consistently reported psychological relief and improved well-being after engaging with chatbots, describing decreased anxiety before competition, emotional release, and improved focus. This echoes evidence that AI-driven tools can reduce psychological distress and promote resilience (2, 23). The chatbots’ ability to provide personalized coping strategies—such as breathing exercises, motivational prompts, and goal-tracking—parallels findings from AI-based cognitive and affective interventions (6, 7). Our athletes valued these features for preparing mentally before events, aligning with reports that personalized digital content enhances performance readiness (11).

Importantly, participants described chatbots as early detectors of deteriorating mood or stress escalation. Some reported that the AI suggested professional support after recognizing patterns of negative self-report. This proactive screening role supports earlier calls to leverage chatbots for early detection and triage (5, 16). For athletes who often delay formal help, this low-threshold detection mechanism can be crucial.

##### 6. Usability and engagement factors

Our data highlighted how interface simplicity and intuitive design encouraged adoption and sustained use. Participants praised easy onboarding and straightforward navigation, consistent with earlier reports that user-friendly design is central to engagement (15, 17). They also valued conversational, empathetic language. Similar findings in general populations show that natural and warm dialogue style strengthens user trust and comfort (1, 18).

Engagement was further promoted by gamification features, daily check-ins, and progress feedback. Previous evaluations of AI well-being platforms suggest that such behavioral nudges sustain motivation and increase adherence (9, 20). Our study extends this to the athletic context, where maintaining mental training habits parallels physical training discipline.

Privacy assurances emerged as particularly salient. Anonymous use and explicit privacy messaging increased willingness to disclose sensitive emotions. This mirrors earlier work showing that perceived confidentiality is a key facilitator for mental health app use (3, 19). Given that athletes often fear stigma and career repercussions, privacy may be even more decisive for them than for general users.

A striking finding was that chatbots fostered a sense of trust and emotional validation. Participants described feeling listened to and supported, aligning with research on social chatbots’ capacity to simulate empathy and alleviate loneliness (2, 13). This sense of safe companionship appears to help athletes open up when human help feels inaccessible or stigmatized (3, 19).

However, the relational depth was limited. While initial interactions felt caring, some users eventually sensed emotional flatness or repetitive replies, leading to disappointment and reduced engagement. This reflects known limitations of current AI empathy simulation (4, 14). The discrepancy between early supportive experiences and later “scripted” feeling suggests a need for adaptive conversation models and periodic content refresh.

Interestingly, some athletes described the chatbot as a temporary substitute for human connection when under psychological pressure, but few intended to fully replace human therapists. This supports the hybrid support model advocated in prior work, which envisions AI tools as supplements rather than replacements (20, 21).

Despite positive aspects, participants reported technical barriers such as app crashes or slow response during weak connectivity, which disrupted engagement. These echo usability challenges noted in digital mental health literature (15, 22). Addressing technical reliability remains essential for trust building.

Limited personalization also emerged. Users disliked generic or repetitive advice after long-term use. Similar dissatisfaction has been found when chatbots fail to update insights over time (6, 7). This gap highlights the importance of machine learning models that adapt dynamically to individual patterns.

Concerns about data security and confidentiality were noted by a minority. Even though many appreciated anonymity, some feared misuse of sensitive disclosures, reflecting global ethical debates about AI in mental health (13, 14). These fears could be amplified in elite sports where data misuse may impact selection or sponsorship.

Finally, participants highlighted cultural mismatches, such as irrelevant Western metaphors or inadequate Malay language support, echoing arguments that cultural tailoring is vital for chatbot acceptance (16, 24). Developers must localize content to athletes' sociocultural and sport-specific context.

## 7. Integration with prior evidence and contribution

Our study extends existing knowledge in three ways. First, it confirms that AI chatbots can provide real, short-term psychological relief and stigma-free access for athletes, echoing prior findings in non-sport populations (5, 23). Second, it contextualizes engagement and trust factors—particularly privacy, conversational tone, and gamification—in competitive sports, an area rarely examined (11, 12). Third, it surfaces persistent limitations—technical fragility, shallow long-term personalization, and cultural misalignment—that future development must address.

By centering athletes' lived experiences, the findings help bridge a research gap identified by scholars calling for qualitative UX evidence to inform design (17, 20). These insights can directly guide safer and more effective AI mental health support systems tailored to performance environments.

This study has several limitations. The sample was limited to 22 athletes in Malaysia, which may restrict

transferability to other cultural or competitive contexts. Most participants were young adults comfortable with digital tools; thus, findings may not represent older or less tech-literate athletes. Data relied on self-report through interviews, and participants may have selectively shared positive or negative experiences. Furthermore, as with most qualitative research, thematic interpretations are shaped by the research team's perspective and may not capture all nuances of user interaction.

Future work should include larger and more diverse athlete populations across sports levels, including recreational and para-athletes, to explore how needs vary. Longitudinal studies could track sustained engagement and mental health outcomes over competitive seasons. Experimental or mixed-methods designs might combine qualitative user experience with measurable indicators such as anxiety reduction or adherence rates. Additionally, future research should examine cultural adaptation and language tailoring, as well as the integration of AI chatbots within broader sports mental health ecosystems involving coaches, psychologists, and support staff.

Practitioners and developers should prioritize trust-building features such as transparent privacy policies and optional anonymity. Designers should integrate sport-specific content and culturally appropriate language to increase relevance. Incorporating adaptive learning to avoid repetitive responses and sustain long-term engagement is crucial. Finally, sports organizations and mental health professionals could implement chatbots as complementary tools, using them for early screening, self-help, and stigma reduction while maintaining pathways for human care when deeper support is needed.

## Authors' Contributions

All authors equally contributed to this study.

## Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

## Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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## Declaration of Interest

The authors report no conflict of interest.

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## Ethics Considerations

The study placed a high emphasis on ethical considerations. Informed consent obtained from all participants, ensuring they are fully aware of the nature of the study and their role in it. Confidentiality strictly maintained, with data anonymized to protect individual privacy. The study adhered to the ethical guidelines for research with human subjects as outlined in the Declaration of Helsinki.

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