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ABSTRACT

The capacity to demonstrate resilience is important for performance and development outcomes in youth soccer. A key feature of resilience is the demonstration of positive behavioral responses to pressures or setbacks, yet little research exists on the specific behaviors that characterize resilience in the youth soccer literature. This study aimed to explore the behavioral indicators of resilience through focus groups and interviews with 60 participants from six professional soccer academies and one National Soccer Governing Body. The data was collected in two phases, the first involved a discussion of the observable behaviors associated with resilience in youth soccer. In the second phase, participants reflected on examples of resilience behaviors alongside video clips. These acted as a stimulus to contextualize the behaviors arising from the first phase. Content analysis was used to analyze the data and 36 behaviors were identified across six themes: (a) teammate support-focused (e.g., verbal support following mistakes), (b) emotion-focused (e.g., displaying emotional regulation), (c) effort-focused (e.g., physical efforts to overcome challenge), (d) rebound (e.g., positive reactions to a mistake), (e) robust (e.g., showing composure when under pressure), and (f) learning-focused (e.g., willingness to accept feedback). The results offer an insight into a multifaceted range of resilience behaviors in the context of youth soccer. With this knowledge, practitioners can make informed decisions around player development by assessing specific behavioral metrics related to resilience, players can engage in structured self-reflection practices pertaining to resilience development, and researchers can work toward the development of validated observational tools for resilience assessment.

Lay summary: This study offers insight into the observable behaviors characterizing resilience in youth soccer. Participants identified 36 resilience behaviors, highlighting the multifaceted nature of the concept in this specific context. The results provide a platform to support practitioners in observing resilience behaviors and structuring practices for resilience assessment and development.

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IMPLICATIONS FOR PRACTICE

- The findings of this study can support youth soccer players in reflecting on their behavioral responses to in-game stressors, and thus better understand how and when they demonstrate resilience.
- Given the multifaceted nature of resilience behaviors highlighted in this study, practitioners in youth soccer settings may target specific themes for resilience development or use these to inform long-term curricular approaches.
- The findings can underpin the development of formalized observation instruments to support resilience behavior assessment and tracking.

The capacity to maintain performance despite challenges and setbacks has long been considered a crucial characteristic of successful athletes (Durand-Bush & Salmela, 2002). This holds true in academy-level youth soccer, where players who respond well to the pressures and inherent obstacles in the environment may ultimately be more successful and more likely to progress toward professional status (Holt & Dunn, 2004). The nature of youth soccer in the professional academy setting dictates that many challenges and setbacks of varying magnitudes must inevitably be navigated, including external demands (e.g., coach or parent criticisms), on-field setbacks (e.g., making errors), and performance issues (e.g., poor team outcomes; Sagar et al., 2010). The need to manage these various competitive demands points to the importance of developing and demonstrating resilience in this context (Holt & Dunn, 2004; Mills et al., 2012; Mitchell et al., 2022).

Resilience has received increasing research attention in the sport psychology field and there is an emerging understanding of its implications for sport performance, as researchers seek to explore why some performers are seemingly able to withstand the pressures of competition while others appear less able to (Fletcher and Sarkar, 2012). In youth soccer research, resilience is identified as one of four key psychosocial competencies for success in this context (Holt & Dunn, 2004), and a central factor in player development and progression into the professional game (Mills et al., 2012; Mitchell et al., 2022). The importance of resilience is emphasized in a review of the Elite Player Performance Plan (The Premier League, 2022), the strategy that underpins youth soccer development in England and Wales, which notes that soccer academies should equip players with "the mental and emotional resilience required to sustain a career at the highest level" (p. 26). The general view is that resilience represents a capacity to cope with adversities and the inherent challenges that are presented in the soccer academy context. As an example, Holt and Dunn (2004) describe resilience as "the ability to use coping strategies to overcome obstacles" (p. 199). Similarly, Mills et al. (2012) suggest that a key component in the demonstration of resilience, and an "indispensable attribute" in player development (p. 1597), is an ability to cope with pressure and setbacks. This focus on coping with challenges, setbacks and adversities is reflected in wider soccer research, which discusses resilience alongside other concepts such as grit or attitude

(e.g., Larkin & O'Connor, 2017), while perhaps not capturing the full extent of what resilience represents beyond coping (Bryan et al., 2019; Wixey et al., in press).

In general terms, resilience occurs when there is a positive response (e.g., adaptation) in the presence of adversity or stressors (Fletcher & Sarkar, 2013). This is illustrated by Bryan et al. (2019) who suggest that resilience definitions typically share three common features: positive adaptation following the experience of adversity, the capability to bounce back or rebound, and the maintenance of performance and/or well-being despite exposure to stressors. In a practical sense, resilience may therefore be observed through the maintenance of functioning under pressure, bouncing back to typical levels of performance following a setback, or demonstrating some form of adaptation (e.g., learning and adjusting performance strategies) after experiencing contextual challenges of varying magnitudes and thus benefitting to some degree (Fletcher & Sarkar, 2016). Where this differs from concepts such as coping, the demonstration of resilience can be seen in apparently positive situations that may still be appraised as threatening (e.g., protecting a lead in the final minutes of a game) rather than solely in response to adversity. As such, for the purposes of this study, resilience is viewed as a capacity to manage specific contextual stressors (e.g., performance pressures), demonstrated through observed behavioral responses such as adaptation, the maintenance of typical contextual functioning (i.e., performance behaviors) or rebounding from setbacks.

Despite recent research offering theoretical insight into resilience outcomes in sport, the current body of literature on resilience in practical contexts is limited. Early research studies that sought to assess resilience in the sport domain did so by focusing on performance outcomes as the measure of an athlete's capacity for navigating performance-related setbacks. For example, Mummery et al. (2004) used the improved times produced by swimmers following a worse-than-anticipated performance as an indicator of individual resilience. The premise is that these athletes produced a "bounce back" response and thus a positive adaptation following a setback. However, while such research offers a perspective on how resilience might unfold in the performance domain, there are criticisms of the design of studies that use performance as the only measure of resilience, which could be subject to a range of uncontrollable factors. Galli and Gonzalez (2015) encourage the use of alternative behavioral measures such as effort and game strategy as indicators of positive adaptation, rather than solely focusing on performance metrics. As an example, Chandler et al. (2020) identified behaviors such as "persistence in the face of setbacks" and "attempts to demonstrate creativity even if these did not always come off" (p. 239) as observable psychological outputs in youth soccer beyond the performance outcome itself. Such behavioral examples of athletes observably responding to the setbacks that commonly occur in-the-moment could provide further insight into the resilience process beyond existing research that either extrapolates from performance or relies on retrospective athlete testimonies (Den Hartigh et al., 2022).

The behavioral aspect of resilience has been referred to in existing youth soccer literature. For example, Holt and Dunn (2004) suggest that there are a series of situations and obstacles in youth soccer that require certain "resilient behaviors," and that resilience represents "a set of behaviors associated with soccer success" (p. 214). Similarly, Mills et al. (2012) refer to the capacity to develop "resilient behaviors" (p. 1601) as an

important feature of youth player development in soccer. Other studies in the sport domain make similar reference to the behavioral manifestation of resilience (e.g., White & Bennie, 2015) and point to the demonstration of positive behavioral responses in the face of stressors as a key feature of resilience (e.g., Fletcher & Sarkar, 2012). Yet, few studies have directly sought to explore the specific behaviors that characterize resilience in this context. In studies that have attempted this, the focus is on a holistic view of the psychosocial competencies required by youth soccer players rather than an exclusive focus on resilience (e.g., Mitchell et al., 2022; Robinson et al., 2024; Wixey et al., in press). For example, as one of "eight pillars" underpinning youth soccer development, Mitchell et al. (2022) identified general observable behaviors linked to the demonstration of resilience, including "sticks at a task they find hard or challenging" and "keeps going when errors are made" (p. 5). Similarly, Robinson et al. (2024) included resilience as one of seven psychosocial attributes in an observational tool for youth soccer, with behavioral indicators such as "ability to overcome adversities" and "positive attitude after a mistake" (p. 5). While this represents a good starting point as an exploration of resilience behaviors in this context, these items are perhaps more akin to general descriptors rather than distinct behaviors per se (Diment, 2014), with some lacking the clearly identifiable features that would be required by those observing performance (Musculus & Lobinger, 2018).

Despite this identification of general behavioral descriptions, resilience has yet to be observationally measured in sport research. To assess an athlete's "displayable level of resilience" (Hill et al., 2018, p. 337), there is a need to establish observable and contextually relevant behavioral indicators of positive functioning (Kegelaers, 2023). The identification of observable behaviors to assess psychological phenomena has been seen in other areas of sport psychology. For example, Toering et al. (2011) used interviews with youth soccer coaches to develop a list of "objectively visible behaviors" (p. 188) related to self-regulation in this context. These behavioral items were then used to observe player behaviors in practice sessions. Where this type of research is most advanced is in the field of mental toughness. Several studies have identified mental toughness behaviors (MTb) across different sports including soccer (e.g., McKay et al., in press), with some of these forming the basis of observational assessment tools (e.g., Diment, 2014). In these studies, McKay et al. (in press) and Diment (2014) drew upon the insights of various stakeholders to identify a series of performance behaviors that characterize mental toughness in soccer. For example, Diment (2014) highlighted 28 mental toughness behaviors through video analysis of game footage (before filtering to ten through expert ranking), including actions such as scanning and effective/ineffective soccer skill. On the surface, some of these behaviors are not obviously tied to definitions of mental toughness but are more indicative of technical proficiency. This points to criticisms of the mental toughness literature more broadly where extensive lists of characteristics are used to describe the concept, sometimes tied to uncontrollable (e.g., consistency of performance), other-dependent performance-oriented outputs (e.g., outperforming opponents) (Andersen, 2011). As noted by Galli and Gonzalez (2015) in relation to resilience assessment, and by Gucciardi (2017) in more recent conceptualization of mental toughness, it is important to move away from these descriptions that are based on uncontrollable performance outcomes and instead focus on alternative behavioral indicators.

While there are some conceptual similarities between resilience and mental toughness, such as the capacity to overcome adversities and manage stressors (Cowden et al., 2016), there are also distinctions that separate these concepts. For example, mental toughness has been described as an internal psychological resource whereas resilience is a capacity built on a range of protective factors, many of which exist outside of the individual (i.e., in the environment) (Gucciardi, 2017). Theoretically, the trajectory of functioning following exposure to stressors may therefore differ based on these conceptualizations, with different associated behavioral outcomes. Some descriptions of mental toughness have included absolutist terminology such as having an unshakable belief or a capacity to endure (Andersen, 2011). Unlike resilience, this could imply a tolerance of stressors without recognizing the need to draw on protective assets (e.g., social support) to facilitate adaptation, learning, and changing goals to support rebound or growth (Kegelaers & Sarkar, 2021). The demonstration of resilience may also be most salient as a *reaction* to challenging circumstances, whereas the psychological resources that underpin mental toughness may be developed *proactively*, through pre-competition planning for example (Gucciardi, 2017). In both cases, the actions of an individual when confronted with stressors provides insight into their functioning under pressure, with resilience researchers perhaps being primarily concerned with behavioral responses during and after the event.

While behavioral research has advanced in the mental toughness domain, few studies have attempted to explore how resilience manifests through athlete behavior. To develop a broader understanding of the behavioral characteristics of resilience and thus facilitate observational assessment in this area, further insight is required on the behavioral examples of resilience in the current literature (e.g., Mitchell et al., 2022; Robinson et al., 2024; Wixey et al., in press). This would extend the wider resilience research that discusses the development of "resilient behaviors" (e.g., White & Bennie, 2015, p. 388) yet does not present clear insight or examples of these behaviors. There is thus an opportunity to investigate the observable behaviors associated with resilience, utilizing methodological approaches similar to those in the behavioral sport psychology literature (e.g., Toering et al., 2011) that place participants with expertise in the specific domain at the center of the data collection process. As such, the aim of this study was to explore the behavioral indicators of resilience in academy-level youth soccer from the perspectives of key stakeholders who have direct experience in this setting. Given that professional academy-level soccer involves unique contextual pressures, it was important to draw upon the views of practitioners with experience in a diverse range of roles in the setting, with a view to capturing a breadth of insight on the topic (Kegelaers et al., 2021).

Method

Research design and philosophical underpinning

A two-phase design was adopted in this study using different forms of qualitative data collection (e.g., video-stimulated discussion), with the aim of exploring the perceptions of a wide range of participants with experience in academy-level soccer. *Phase 1* involved focus groups with exploratory discussions of resilience behaviors in youth soccer, and in *Phase 2*, focus groups and interviews combined member reflections and analysis of video clips to further explore the topic. The methodological approach was

underpinned by a critical realist philosophy, based on the ontological assumption that at the empirical level (i.e., observable or perceptible events), there exists a reality that can be explored through individual interpretations and explanations (Ronkainen & Wiltshire, 2021). This is based on critical realist principles of ontological realism (i.e., reality exists relatively independently of our experience), and epistemic relativism (i.e., there are inherently different views on reality based on individual interpretation). In line with the critical realist position, adopting different data collection approaches across two phases presents an opportunity to corroborate or refute (or refine) the collective views of participants toward resilience behaviors (stratified ontology) and develop our understanding of when/where/why these behaviors occur (causal complexity) (Ryba et al., 2022). Epistemologically, the critical realist stance does acknowledge the inevitable fallibility of individual perception of a phenomenon that is external to them, requiring some theorization on certain unobservable processes. It is therefore important to maintain "judgmental rationality" (Wiltshire, 2018, p. 532) whereby we can arrive at a level of agreement, understanding and a plausible account of the phenomena through analytical debate during data collection, and reflective and reflexive analysis of the data.

Researcher positionality

At the time that the study was conducted, the first author was a doctoral researcher with prior experience of qualitative and quantitative data collection in a Research Associate role (unrelated to resilience in sport) and with an involvement in youth soccer as a grassroots coach. With no previous involvement in academy-level soccer or resilience research, the lead author could initially operate from a position of "cultural outsider," allowing for a degree of impartiality and with few preconceptions on the subject. However, this positionality likely evolved during the data collection process through the ongoing interactions with participants that inevitably influence our perceptions and understanding of the context and the study topic. The diverse positionality of the wider research team ensured that effective reflexive practices (e.g., sense checking during data analysis) could mitigate this, and allow for different perspectives and interpretations to be considered (Smith & McGannon, 2018). Specifically, the second author has extensive experience in the publication and application of resilience research in elite sport, the third author has been employed in an academy soccer role and has published sport psychology research in this setting, and the fourth author is a former elite athlete (international elite swimmer) and is published in both the resilience and youth sport literatures. Collectively, the second, third, and fourth authors have over 25 years' experience of conducting qualitative research in sport. With these different experiences, the research team were positioned to critically support the data collection and analysis processes (see the *Methodological Rigor* section for specific examples).

Participants

To address the research aims, a purposive sample was recruited targeting those currently involved in the professional youth soccer setting, with enough variation by virtue of their job roles to allow for diversity of experience and insight. Previous research that

has explored behavioral features of psychological characteristics has done so by drawing on the narratives of social agents who have a wide range of experiences and perspectives on the subject in question (e.g., Anthony et al., 2020). As such, participants were recruited on the basis that they held a position of employment in a professional youth soccer setting and their job role involved player observation in some capacity. A total of 60 participants took part in the study across the two phases of data collection (*Phase 1:* n = 51; *Phase 2:* n = 28) from six professional soccer academies and one National Soccer Governing Body. The participants were employed in a range of roles including coaching (n = 35), performance analysis (n = 6), head of coaching (n = 5), psychological support (n = 4), talent identification (n = 4), sport science (n = 2), strength and conditioning (n = 1), physiotherapy (n = 1), head of operations (n = 1), and academy manager (n = 1) (please see Supplementary Material 1 for a breakdown of participant details).

Procedure and data collection

Following ethical approval from the Non-Invasive Research Ethics Committee of the lead researcher's institution, all participants were sent an information sheet and were required to sign a consent form. 13 focus groups and two interviews were completed in total over an 18-month period. The two-phase data collection method was used to provide a comprehensive examination of what is a previously underexplored topic, allowing for both exploratory and confirmatory approaches to the data collection and analysis.

Phase 1: 10 focus groups were completed using a semi-structured guide, where resilience in the youth soccer context was discussed with a specific focus on the observable, on-field behaviors associated with the demonstration of resilience. Guided by the critical realist approach, the aim of the questioning was to draw out examples, observations and empirical "events," using "why" and "how" questions (Brönnimann, 2022) (e.g., "can you think of any specific examples where a player has demonstrated resilience?"). The focus groups were facilitated by the lead researcher who guided the discussion and asked clarifying or explanatory probing questions where necessary to encourage contributions from all participants. This was especially relevant in the focus groups that had a high number of participants when individual contributions can be restricted. Largely, the focus groups represented an interactive discussion between the participants with limited intervention from the researcher (full focus group/interview guides are available on request from the lead author). Between Phase 1 and Phase 2, the participating clubs were asked to prepare illustrative video clips of the behaviors that they discussed and had observed previously in practice (coordinated by the performance analysts who sourced the clips).

Phase 2: Five follow-ups were completed where the findings from the first phase were reflected on and video clips with contextual on-field examples of resilience were discussed as a form of "video stimulated dialogue" (Nind et al., 2015, p. 570). To achieve this, the lead researcher first presented a list of behaviors that were identified from the initial focus group via an informal content analysis ($M = 14$ behaviors; Range = 10-19 behaviors) and asked the participants to provide further reflections and analysis of these (please see Supplementary Material 2 for an example of this list of behaviors). Where possible, video clips were then displayed and used as a stimulus for discussion and

contextualization of these behaviors. For example, one clip showed a player losing possession of the ball and quickly making efforts to win it back – this was framed as a demonstration of resilience in this focus group. In another focus group, a video showed a player missing a penalty (i.e., a stressor) and subsequent efforts to create and score goals (i.e., positive response). The lead researcher used prompts after viewing the video clips to guide the discussion and encourage elaboration on the points raised, with the aim of generating recall of previous experiences and promoting reflective dialogue (e.g., "why is this specifically an example of a resilience behavior?"; "can you think of other examples?"). Presenting both the list of behaviors from Phase 1 (exploratory phase) and the illustrative video clips encouraged the participants to confirm, challenge and add to their initial thoughts on the subject in Phase 2 (confirmatory phase). This generated better understanding of these behaviors in context as well as producing new ideas.

All participants were invited to take part in both focus groups, however the higher number of participants in the first phase is representative of the changes in participant availability during the data collection period. 19 individuals participated in both (32%), 32 participated in phase one only (53%), and nine participated in phase two only (15%). Five of a possible eight follow ups could be completed, and three of the five were able to provide video clips. Two follow-ups were conducted on a one-to-one basis and not in focus group format as intended, again due to availability and staff turnover at the participating clubs. Six focus groups were completed in person at the soccer academy training ground premises and were audio recorded using a Dictaphone ($M = 82$ minutes). Nine were completed online using a communication platform (Microsoft Teams, Washington US) and were recorded using the integrated video recording software ($M = 57$ minutes). The more exploratory nature of the discussion in the first phase of focus groups is reflected in the longer duration ($M = 73$ mins; Range = 49-108 mins) and word count ($M = 11, 983$ words) compared to the second phase (duration: $M = 54$ mins; Range = 34-86 mins; word count: $M = 9, 082$ words).

Data analysis

All focus groups were transcribed verbatim, generating 352 A4 pages of double-spaced text. To achieve the aim of identifying specific resilience behaviors from the focus groups/interviews, content analysis was used. This approach allowed us to gain direct, descriptive information without having imposed any preconceived categories on the data (Hsieh & Shannon, 2005). Based on the assumption that perspectives on the topic come from unique individual experience, the occurrence of any behavioral item that matched our definition was deemed to represent an example of a resilience behavior. Our definition of resilience behavior included observable positive functioning by a player in response to in-game pressures, with "positive functioning" understood as clearly observable behavioral adaptation/adjustment and regulatory processes (Tamminen et al., 2016). Frequency of occurrence in the transcripts was not considered to be of greater importance or relevance, and any new behaviors discussed in the confirmatory phase (Phase 2) were included in addition to those from the exploratory phase (Phase 1). The approach to content analysis followed a series of analytical stages (Hsieh & Shannon, 2005). The lead researcher first transcribed the recordings verbatim and in doing so became more familiar with the

content. All transcripts were then reviewed by listening back to the recordings and checking for accuracy. The first formal phase of the analysis process involved highlighting any quotes where examples of resilience behaviors were discussed. The first author then grouped these behaviors to produce categories and overall themes, with ongoing discussions with the research team to check the suitability of the analysis, and thus challenge any threats to descriptive validity (Maxwell, 2012). Once the categories and themes had been agreed in relation to the identified behaviors, illustrative quotes were selected for data presentation purposes.

Methodological rigor

To maintain rigor in the data collection and analysis processes, various strategies were employed. Firstly, once ethical approval had been obtained, the focus group guide was piloted to test the procedure in its entirety. Five practitioners from a professional soccer academy who were not involved in the main study completed the first focus group protocol. Rather than contributing to the study data, this process allowed the lead researcher to reflect on and refine the approach to coordinating focus group discussions (e.g., moderating the discussion to draw contributions from all participants). During data collection, to check the descriptive validity of the findings, member reflection was carried out by presenting the behaviors identified in the first phase to the participants during the second phase. This encouraged critical discussion and reflection on the accuracy of these behaviors which was deemed important to limit researcher misunderstandings of the multiple perspectives offered through the focus groups (Maxwell, 2012). To ensure methodological coherence during the (18-month) data collection period, ongoing self-reflection and reflexive discussions took place between the lead researcher and the research team (Smith & McGannon, 2018). After data collection, critical friends supported data analysis by providing alternative perspectives on the data (e.g., theme labels). This was a useful exercise in checking the interpretations of the lead researcher and encouraging reflexivity, whilst being mindful that those external to the data bring their own perspectives of reality (Ronkainen & Wiltshire, 2021).

Results

36 resilience behaviors were identified across 14 categories and six themes (see Table 1). These themes are: (a) teammate support-focused resilience behaviors, (b) emotion-focused resilience behaviors, (c) effort-focused resilience behaviors, (d) rebound resilience behaviors, (e) robust resilience behaviors, and (f) learning-focused resilience behaviors. These themes have been outlined with illustrative examples of the observable behavioral features of each, with some examples of contrasting behavioral displays designed to contextualize what resilience may or may not "look like" in this specific setting.

Teammate support-focused resilience behaviors

Teammate support-focused resilience behaviors were described as a player positively influencing or interacting with their teammates during periods of pressure or following

Table 1. Resilience behaviors in youth soccer.

Behavior	Category	Theme
1. Giving verbal support or instructions to others following mistakes	Verbal Support	Teammate Support-Focused Resilience Behaviors
2. Positive body language in response to a teammates' mistake	Non-Verbal Support	
3. "Showing" for the ball through body language		
4. Demonstrating leadership during pressure or adversity	Influencing Others	
5. Displaying emotional control under pressure or when facing challenge	Emotional Regulation	Emotion-Focused Resilience Behaviors
6. Positive body language after an error is made		
7. Visible positive body language directed towards others during periods of challenge		
8. Change of facial expression when experiencing challenge		
9. Positive response to being substituted		
10. Showing humor (i.e., playing with a smile) despite setbacks	Maintaining Perspective	
11. Showing physical bravery	Managing Physical Challenges	Effort-Focused Resilience Behaviors
12. Working hard to support attack and defense when required	Physical Effort	
13. High physical effort to quickly regain possession after an error		
14. Physical efforts to overcome challenge or to manage setbacks		
15. Persistence through challenges	Psychological Effort	
16. Repeated attempts to score despite previous missed chances	Positive Response to Errors or Setbacks	Rebound Resilience Behaviors
17. "Bouncing back" after a mistake		
18. Quickly moves on from an error		
19. Immediate positive reaction to a mistake (i.e., pressing)		
20. Getting back into the appropriate position quickly after an error		
21. Showing bravery by repeatedly taking the ball under pressure	Approach Focused	Robust Resilience Behaviors
22. Wanting the ball despite losing possession previously		
23. Attempting challenging skills under pressure		
24. Maintaining consistent performance standards despite setbacks	Control of Performance State	
25. Consistent and correct decision-making following mistakes		
26. Demonstrates confidence when faced with challenge		
27. Shows composure when under pressure		
28. Positive self-talk when facing challenge	Internal Processes	
29. Remaining focused in the face of challenges		
30. Displaying a positive attitude		
31. Practical attempts to maintain composure after making errors		
32. Adapting playing strategy based on challenges	Self-Awareness	Learning-Focused Resilience Behaviors
33. Recognizing a mistake by taking corrective action		
34. Willing to accept feedback	Ownership	
35. Follows team instructions despite setbacks		
36. Taking responsibility for own errors		

setbacks. This can be seen through verbal or non-verbal support, and through indirectly influencing others by responding to setbacks in an adaptive manner. This could be by "demanding more" from teammates when "in a tough situation" (Performance Analyst, Focus Group 7) or by providing verbal support or instructions to others following mistakes, for example "it's not just when they respond well to their own mistakes, it's when they respond well to the mistakes of others. So … those leadership qualities … a striker misses a goal - never mind mate, get ready for the next one" (Talent Scout, Focus Group 10).

This was reiterated by an Under-16s coach who discussed the demonstration of resilience through verbal and non-verbal support toward others, using "communication skills" to "not just influence yourself but affect teammates in the group" (Focus Group 7). A talent scout described an example of this occurrence from observations of youth female players: "that kid who's teammate made a bad pass and she 'gees' them up, she doesn't lose her rag at her, she is being positive and saying 'hey come on we can do better, let's get going, let's pick it up'" (Focus Group 9). A sport psychologist also discussed resilience behaviors that are oriented toward support for teammates, both through supportive communication when facing challenge: "if someone else makes a mistake, there's a need for an element of support or encouragement to lift them up" and through body language that shows a genuine intent to receive the ball when a teammate needs support i.e., "calling for the ball but then also having the body language to match" (Focus Group 12). This was summarized by a head of coaching when describing support-oriented resilience behaviors following setbacks (i.e., conceding a goal): "the response is - carry on talking, helping, showing" (Focus Group 11). An Under-16s coach also discussed how a player's response to setbacks (in this case being substituted) can influence others, with a player demonstrating leadership when confronted by a stressor being seen as a behavioral indicator of resilience:

> You've got to show the resilience when times aren't going right ….so, he might not feel comfortable that he's being brought off, but that might be a conversation where he could just speak to us so he then can understand, but he's also got to be resilient enough to then go, all right, I've been brought off, 'well, I'm a leader, so I'm going to support my teammates around me' (Focus Group 6).

Emotion-focused resilience behaviors

Emotion-focused resilience behaviors refer to visible attempts made by a player to manage and regulate their own emotions when facing challenges or setbacks, for example, "if they made a mistake or something has gone against them … do they react and get angry or are they level-headed" (Youth Development Phase Lead Coach, Focus Group 5). It is suggested that these emotional responses can be seen when observers "put the microscope on them" as "not many of them can hide how they actually feel. You can see it in their behavior, their body language, their facial expression" (Head of Academy Coaching, Focus Group 1). A sport psychologist described the demonstration of resilience through emotional regulation under pressure, and indicated that this may vary based on the age of the player:

> The changes as a result of adolescence I think that are really important and particularly if we're relating resilience to, you know, someone's ability to respond appropriately or

effectively to adversity and challenge, those types of things. Well, a big part of that is going to be relying on someone's ability to manage their emotions (Focus Group 7).

In describing a player's "ability to overcome adversity" by "looking at the behaviors," one participant described resilience in a soccer player as one that "remains calm, remains focused, will often learn from the negative" (Under 12s Coach, Focus Group 5). This response can be observed through body language, for example, "eyes up, chest out … rather than getting your head down or not wanting to make eye contact" (Head of Academy Coaching, Focus Group 11). It was also noted that emotion-focused resilience behaviors include body language directed toward teammates when difficulties are being encountered: "you can see frustration in body language, but you could also see somebody encouraging others through body language, whether that is applauding or a simple thumbs up or smile" (Under 11s Coach, Focus Group 5). The proximity of this response after experiencing a challenging situation may also be an important consideration:

> It doesn't have to be positive immediately … there is an instinctive allowance … you could react negatively but that has to be for a short time on the understanding that that is naturally how you feel but then we need to click in and get on with the game (Sport Psychologist, Interview 12).

Certain game situations or "resilient moments" were discussed as important markers for emotion-focused resilience behaviors, such as observing "how they react" to potentially adverse situations such as getting substituted (Academy Goalkeeper Coach, Focus Group 8) or facing a tough physical challenge, with "body language" and "facial expression" being indicators of their emotional response (Head of Academy Coaching, Focus Group 1). In such situations, a player observably demonstrating "calm and controlled" behavior "rather than losing your head," for example, by being able to "smile and remain calm" and "having a sense of humor … it's a pressure situation but being able to almost smile at it" may indicate the capacity to maintain perspective during adversity, which could be viewed as an indicator of resilience (U18s Coach, Focus Group 1).

Effort-focused resilience behaviors

Effort-focused resilience behaviors refer to visible attempts to manage the physical and psychological demands that occur during games, particularly linked to recovering from setbacks or specific physical challenges. For example, a player may be seen to be demonstrating resilience when they engage with the physical demands of the game (such as being repeatedly fouled) by maintaining positive body language and "demeanor" (Talent Scout, Focus Group 9). Showing physical effort to support both attacking and defensive situations despite setbacks was also highlighted as a resilience behavior. As an example, a player may attempt an attacking cross but is then "back on the edge of our box sprinting to defend" (Professional Development Phase Lead Coach, Focus Group 14). This physical response demonstrated after a setback may also be observed through "some really good visuals" (Youth Development Phase Coach, Focus Group 11) such as when a player demonstrates effort to quickly regain possession after an error:

> You might go and miss a chance or something happens, you give the ball away … but then I look at his resilience, something has happened, something has gone wrong. Yeah, you're going to have a negative thought first, but what is your challenge for yourself to go and motivate yourself? Can I go and win that ball back or can I take this next shot again and get off that continuum from negative to positive again? That's what I look at, as in when I'm looking at training sessions, matches and that's what I judge resilience on (Head of Academy Coaching, Focus Group 2).

While this example demonstrates an effortful response to a personal error i.e., "they've given it away, the next thought is right … go win it back" (Talent Scout, Focus Group 10), effort-focused resilience behavior can also be observed in response to a teammates' error, for example "if someone misplaces a pass to them, what is their reaction to that player, you know, do they throw their hands up in the air or are they … you know what, I'm actually going to try and win that ball back" (Talent Scout, Focus Group 9). This illustrates that when observing resilience, key behavioral features include "increased physical effort … putting that extra effort to try and get on top of the situation" (Sport Psychologist, Focus Group 7).

An example of effort-focused resilience behavior may therefore be observed through a player exerting physical efforts to overcome personal challenges or to manage the inherent setbacks that they experience during play:

> I think things that definitely sort of standout are in terms of resilience when you see players who are maybe not having the best game or maybe in their own eyes underperforming in that game. They continue to work hard and try and push themself to at least affect the game in a certain way, so they almost get to a point where you think they know they're not having the best of games but they're going to try and do the best for themselves or the team to try and have as best of an impact as they can, so for me that would be an example of resilience (Under 16s Coach, Focus Group 7).

This application of effort-focused resilience behavior is also discussed in relation to showing persistence through challenges. For example, "someone who is able to cope with probably unexpected or difficult circumstances as they happen and then just persevere, play through it. Face the challenge and overcome the barriers in front of them" (Under 11s Coach, Focus Group 5). This was similarly described as "resilience to keep going … it might be a game that … the opposition might be stronger than us, the players are not giving up - I think that's always a decent sign to see" (Academy Manager, Focus Group 14).

Rebound resilience behaviors

Rebound resilience behaviors were discussed as actions by a player to bounce back from errors or setbacks (i.e., a temporary disruption to functioning after exposure to a stressor followed by a prompt return to previous levels). For example, "after a mistake, how do they actually react? … if we concede a goal how do we react? If they make a mistake, how do they react? That's what I try and look for more than anything around … having this resilience mindset" (Academy Performance Consultant, Focus Group 4), The capacity of a player to bounce back was highlighted as a key indicator of resilience, suggesting that it is possible to observe this response following errors:

The ability to bounce back from making a mistake. So I'm going through a couple who are in our team now, if they make a mistake on the pitch it's like that's the end of … the world. And then you'll lose them for a good five to ten minutes in the game just because they made a mistake and now I'm saying 'you made a mistake, you can't do anything about it, it's gone, you can't erase the past', you can't but how can we learn from that mistake going forward? (Under 14s Coach, Focus Group 5)

The capacity to rebound from setbacks was highlighted through two specific examples. Firstly, "if a player steps up and takes a penalty and misses … and gets the opportunity five minutes later are they still going to show that resilience … to take it again and put themselves forward" (Sport Psychologist, Focus Group 3). Secondly, a striker who has missed a goal scoring opportunity but continues to put themselves into positions to score suggests that "one way or another he managed a way to not dwell on that and move on quickly" (Youth Development Phase Coach, Focus Group 1). The timing of the rebound behavior appears to be an important consideration, one participant described resilience as "how they react to situations where they're challenged or any sort of adversity that they have to deal with and how they come back from that, how long it takes them … that's observable - how long it takes them" (Youth Development Phase Lead Coach, Focus Group 5).

Rebound-resilience behaviors were also described in terms of a capacity to quickly move on from an error, being "focused on the next thing" by "rolling it up [the mistake] and throwing it in the bin" (U16s Coach, Focus Group 6). For example, one participant described a player who "clears his mind straight away, doesn't dwell on errors" having "built those coping mechanisms. It used to affect the next probably 10 minutes, you'd see him kicking the floor, punching the post" (Head of Academy Coaching, Focus Group 5). One participant described resilience as "a positive reaction straightaway … it's got to be within a short time span" (Head of Academy Coaching, Focus Group 2), with another participant describing the observable nature of this response: "how are we going to see you and what are we going to hear from you immediately following a mistake - what's that first or second reaction that we're going to see" (Sport Psychologist, Interview 12).

A sport psychologist summarized rebound-resilience behaviors as a player who quickly moves on from an error observed through an immediate positive reaction to a mistake:

I wonder … if you could almost do like a stopwatch so we, speaking to some of the 23s, they were like 'oh yeah, this mistake happened and then for like the next five minutes of the game I just wasn't on it, I was thinking about it too much'. I'm not saying we follow them for five minutes but I'm thinking as an error is made, from the moment that a bad pass is made, how long does it take in milliseconds/seconds for that player to actually engage back into what we want from them in their performance? (Interview 12).

Robust resilience behaviors

Robust resilience behaviors relate to observable actions by a player to maintain their performance levels in the presence of setbacks or pressures (i.e., maintaining relatively stable functioning after exposure to stressors). Specific examples of this in the youth soccer context include a player showing "bravery" and "being prepared to make

mistakes" (Head of Academy Coaching, Focus Group 1), "not hiding" after making mistakes (Sport Psychologist, Focus Group 7), and being "in positions where you're going to be under pressure" (U23s Lead Coach, Focus Group 3). This was summarized as "the little things that I'm looking for when I'm looking for the resilience: the bravery, the confidence to do things that are challenging" (Talent Scout, Focus Group 9). One example was provided of a player who "gave the ball away and then the next time they got it they played safe when they could have maybe … taken more of a risk, that would be an example for me of a player not displaying resilience" (U16s Coach, Focus Group 7). The idea of robust resilience behavior as continuing to maintain typical performance behaviors despite the experience of challenges or setbacks was described in relation to continuing to engage in the game and "getting on the ball" (Sport Psychologist, Focus Group 7). Specifically, "resilience … do they keep getting on the ball. So, if you're a holding midfielder, do you keep going and getting the ball, keep trying things" (Academy Performance Consultant, Interview 15).

It was suggested that robust resilience behavior can also be observed when a player chooses to "approach rather than avoid challenge" in the game (Sport Psychologist, Focus Group 3). For example, "when you talk about resilience, we do all the time with the boys, to try and get them to do stuff that they're not comfortable with on the ball on the pitch in a game situation when it's pressurized" (Under 14s-16s Coach, Focus Group 8). It was suggested that robust resilience behavior is associated with "a consistent level of performance when things are against them" (Lead Development Phase Coach, Focus Group 8) and a consistency of decision making despite making errors. For example, after misplacing a pass: "next time when they get the ball, does that alter their decision making or are they still bold enough to just go … I knew it was the right decision, I just didn't quite execute the pass" (Talent Scout, Focus Group 9). However, it was noted that some inconsistency will inherently be expected when observing youth soccer players:

> If we're developing resilience, we need to expect to see a little bit of inconsistency as well because that inconsistency would mean that there's ups, there's downs, and they are learning but maybe over time that trajectory becomes more and more consistent as they are developing and learning that resilience (Sport Psychologist, Focus Group 8).

The demonstration of robust resilience is also discussed as "the ability to remain confident and perform in pressurized situations or situations that are challenging" (Academy Goalkeeper Coach, Focus Group 4). This was illustrated by a talent scout who regularly looks for the demonstration of resilience in their observations:

> How do they act when they are under pressure, do they play their own game, are they influenced by others, are they able to stay on the ball? So a lot of players, again as soon as the pressure comes, are looking to release it which is, you know, when you get your sideways passing as it's known, but like some players that doesn't bother them, they are so composed that they'll stay on the ball under pressure, they'll look to roll the player and just keep possession (Focus Group 9).

Remaining focused when confronted with challenges is also representative of robust resilience behavior: "being able to see a bigger picture, so a decision could go against you or something bad could happen, but just remaining focused on whatever the goal is" (U9s Coach, Focus Group 5). For example, "how much they can refocus after a

mistake … right one nil down, keep calm, we've got a game plan, keep working on it" (Academy Performance Consultant, Focus Group 4). Certain behavioral tendencies can offer insight into the attitude of the player by "looking at how they react and whether it's a positive attitude toward the game and others" (Foundation Phase Lead Coach, Focus Group 6). This could involve practical strategies to maintain composure: "he's come up with strategies to kind of overcome when things aren't going right" (Head of Coaching, Focus Group 14) or certain internal processes such as self-talk that can be inferred through body language: "the self-talk … might be words you're saying to yourself internally but then that drives the body language … eyes up, chest out" (Youth Development Phase Coach, Focus Group 11).

Learning-focused resilience behaviors

Learning-focused resilience behaviors were described as visible actions by a player that demonstrate attempts to learn from, and adapt to, pressures or setbacks during games. A participant described this through a situation where a player demonstrates self-awareness and adaptability in the face of challenges:

> If you know the winger is going to outpace you, you need to be resilient enough to understand that, not take it to heart that 'oh well I'm gonna get beaten all this game' and think differently, to go right, how do I adapt my game to deal with this (Sport Psychologist, Interview 12).

This adaptability and capacity to learn from experience can also be seen through responses to mistakes: "are they recognizing a mistake, correcting it. How many mistakes is it taking?" (Head of Academy Sport Science, Focus Group 1). Taking ownership was highlighted as a key feature in the demonstration of learning-focused resilience behaviors. This includes taking responsibility for their own errors, rather than projecting the mistake onto teammates: "if a player gives a bad pass away and he's the one who gives it away but he's blaming it on someone else not moving toward the ball … he starts moaning and complaining … that's you not taking responsibility" (Head of Academy Sport Science, Focus Group 11). In line with this, a participant suggested that a player demonstrates resilience when they are willing to accept feedback:

> The active communication really is important. So that's not just having the ability to talk, but also the ability to listen to either constructive criticism or just listening to somebody else. And that's really important, I think, to be resilient if you can show good skills there, it shows that you can take information on board and then apply it in a footballing context (Foundation Phase Lead Coach, Focus Group 6).

Overall, the results illustrate six behavioral themes related to the demonstration of resilience, including the management of emotions under pressure, maintaining performance or rebounding when faced with stressors, supporting others during periods of adversity, demonstrating effort to manage pressure situations, and showing the capacity to learn and adapt following these. All of which are deemed to show demonstrable positive functioning or adaptation in the presence of stressors. To further illustrate the nuance that exists when observably assessing resilience in youth soccer, the data also highlighted certain behaviors that indicate potentially sub-optimal responses to competitive stressors. These were labelled "avoidance-focused behaviors," including passiveness,

risk-aversion, and a tendency to play safe when under pressure or following setbacks. While these behaviors do not directly address our aim of identifying behavioral characteristics of resilience, we have included a summary of these avoidance-focused behaviors in Supplementary Material 3 to: a) further illustrate the multifaceted and complex nature of the behavioral demonstration of resilience, and b) to support future research efforts to observationally assess resilience which may require 'opposing' behaviors to capture the complexity of behavioral observation in this area.

Discussion

By drawing on the perspectives of participants from various roles in academy-level youth soccer, the aim of this study was to explore the behavioral indicators of resilience in this context. The demonstration of resilience has been highlighted as an important facet of developmental and performance outcomes in the youth soccer setting (e.g., Mitchell et al., 2022) but has yet to be extensively studied from a behavioral standpoint. The results of the present study highlight the multifaceted nature of resilience behaviors, illustrating the breadth of behavioral indicators that could be considered when observing for demonstrations of resilience. These behaviors incorporate the robust and rebound resilience trajectories proposed in previous literature (e.g., Fletcher & Sarkar, 2016), suggesting that resilience can be exhibited through a behavioral rebound after encountering a stressor, and through the maintenance of relatively stable behavioral functioning when these stressors occur. Additionally, the results highlight the behavioral manifestation of other resilience-related processes including the capacity to demonstrate learning and adaptation, managing emotions, applying effort, and supporting others in the presence of contextual stressors. These findings extend the current research from both the youth soccer and resilience in sport contexts where the behavioral demonstration of resilience is discussed but is not directly assessed or comprehensively examined.

A key finding of the present study is the identification of specific resilience behaviors in the youth soccer context, indicating that resilience can be observed through certain behavioral responses to contextual stressors. This builds upon the existing resilience literature in sport which has advocated the use of behavioral indicators of resilience (e.g., effort and in-game strategies) to better understand the resilience process and move beyond inferring resilience from performance outcomes (Galli & Gonzalez, 2015). The observable nature of an individual's response to stressors, for example, the way in which a player reacts to challenges, may provide insight into resilience processes at the individual level (Den Hartigh et al., 2022), yet a clear understanding of this observable response is illusive in the existing literature. There are examples in the wider sport psychology literature of attempts to observationally capture behavioral responses to in-game stressors in team sports. For example, Durdubas et al. (2021) developed a behavior observation coding scheme for non-verbal behaviors in volleyball that included "supportive behaviors after a mistake" (i.e., offering social support through non-verbal communication) and "negative behaviors after a mistake" (e.g., body language including shoulder shrugs/looking down after making an error) (p. 6). Similarly, Moesch et al. (2015) identified a series of positive (e.g., thumbs up) and negative (e.g., expressions of frustration/irritation) post-shot, non-verbal behaviors in a behavioral coding scheme for

handball. However, given the contextual specificity and complexity of resilience (Kegelaers, 2023), these behaviors are not directly applicable to soccer, where a range of contextual stressors are likely to elicit specific behavioral responses.

In the existing resilience literature, certain trajectories have been proposed (e.g., rebound and robust resilience; Fletcher & Sarkar, 2016), as theoretical projections of functioning in response to stressors. From a theoretical standpoint, "robust resilience" represents a protective quality observed when an individual maintains their well-being and performance when under pressure, whereas "rebound resilience" refers to a "bounce back quality" where a minor disruption to well-being and performance when under pressure is followed by a quick return to normal functioning (Fletcher & Sarkar, 2016, p. 136). The findings of the present study suggest that there are certain behavioral indicators associated with these resilience trajectories that can be observed in the youth soccer context. For example, based on our findings, robust resilience could be demonstrated through observable actions (highlighted in previous behavioral research) that indicate a capacity to minimize the impact of a stressor and maintain functioning, including the use of positive self-talk (e.g., Van Raalte et al., 1994). Alternatively, rebound resilience may be seen when a stressor has caused a visible disruption to functioning but is followed by positive behavioral actions that show a prompt return to typical levels (i.e., "players are not disappointed for too long") (Wixey et al., in press, p. 16).

While the existing literature in youth soccer offers some preliminary insight into the behavioral manifestation of resilience (e.g., Mitchell et al., 2022; Robinson et al., 2024; Wixey et al., in press), the current study is the first to examine this phenomenon in detail, as previous studies have discussed resilience as part of a constellation of psychosocial competencies in youth soccer rather than as a primary study focus. In the existing research, the behavioral demonstration of resilience is viewed either as an observable emotional regulation process e.g., "keeping level-headed"; "stability in the face of challenge" (Mitchell et al., 2022, p. 5) (i.e., emotion-focused resilience behavior), or effortful actions in response to stressors e.g., "working hard following failure or a setback" (Oliver et al., 2010, p. 438); "work hard to improve after setback" (Wixey et al., in press, p. 16); "not wanting to give up; strong work ethic" (Robinson et al., 2024, p. 5) (i.e., effort-focused resilience behavior). While such studies offer some general behavioral indicators of resilience, the current study extends this research both methodologically and in the breadth of data generated. Specifically, the present study outlines a wide range of observable resilience behaviors, taking account of the multifaceted nature of resilience that is not seen in prior research where the focus is on a narrow range of general behavioral indicators. For example, support-focused behavior has not been discussed in previous descriptions of individual resilience and is suggestive of a relational aspect to the demonstration of resilience in youth soccer, shifting the focus from solely individual actions toward how players behaviorally interact to negotiate stressors and adapt to adversities (Morgan et al., 2013). This would indicate that significant others in the youth soccer context (i.e., teammates) may be a key protective factor in managing the on-field stressors that are regularly experienced (Holt & Hogg, 2002), demonstrated through certain observable, socially-oriented behaviors (Kavussanu et al., 2009). Similarly, the identification of learning-focused behaviors extends existing behavioral descriptions of resilience and supports the view that resilience involves a capacity

to learn from setbacks and demonstrate adaptability (e.g., Sarkar & Fletcher, 2014). The identification of a range of learning-focused resilience behaviors in the current study provides greater potential for observational assessment than the more general descriptors that exist (e.g., "looks to learn from setbacks or weaknesses" – Wixey et al., in press, p. 16). The previous research that has illustrated narrow behavioral descriptors of resilience that perhaps lack observable clarity could be criticized if the aim is to subsequently carry out observational assessment (Diment, 2014).

The methodological approach in the current study and sampling of participants from various roles has provided a broad, multidisciplinary perspective on the topic when compared to other studies that have utilized a narrower participant range (i.e., staff from one professional soccer academy - Mitchell et al., 2022) or have focused predominantly on the perspectives of coaches (e.g., Larkin & O'Connor, 2017; Oliver et al., 2010). The use of a breadth of key stakeholders derives in-depth data on the topic from a wide range of unique perspectives (Kegelaers et al., 2021). This comprehensive approach to the identification of observable resilience behaviors also extends the (albeit limited) existing behavioral observation literature in the sport psychology field, where research has begun to move toward observational methods to assess psychological concepts in practical settings but is limited by methodological inconsistencies (Musculus & Lobinger, 2018). Early studies in this area developed observational instruments by including behaviors from the researcher's own observations of performance (e.g., Van Raalte et al., 1994). More recently, research has used more systematic approaches that involve interviewing domain experts to develop behavioral items. For example, Toering et al. (2011) interviewed six "expert" coaches in youth soccer to establish observable self-regulated practice behaviors. Such studies again appear to rely on the perspectives of a small number of coaches and therefore do not capture the views of broader stakeholders (e.g., sport psychologists) who contribute wider knowledge and expertise (Musculus & Lobinger, 2018). Having captured the perspectives of these wider stakeholders and illustrated the multifaceted nature of resilience behaviors, the current study represents a good starting point for the observational assessment of resilience in the practical context.

Practical implications

The identification of resilience behaviors in this study has the potential to inform practices for the observational assessment of resilience in youth soccer. Practitioners in youth soccer (e.g., coaches) may arbitrarily and subjectively assess a players' capacity for demonstrating resilience in relation to specific stressors in the game (e.g., bouncing back from performance setbacks) (Roberts et al., 2019). However, this is often based on instinctual "gut feeling" (Roberts et al., 2019, p. 1167). The behaviors presented in the current study have been generated from discussions with multiple stakeholders which, according to Musculus and Lobinger (2018), makes an important contribution to the improved objectivity of observational assessment of psychological constructs. As such, the findings of this study can contribute to more systematic and objective observations of resilience in practice. Aligned with existing approaches to psychosocial development in youth soccer (e.g., Mitchell et al., 2022), these assessments could form part of an

intervention "curriculum" that involves longitudinal observation of different behavioral themes, with feedback and player self-reflection integrated to reinforce learning and development. This is advocated in the work of Mills et al. (2012) who emphasize the importance of reflection in resilience development by, for example, analyzing and challenging the appraisal of stressors to catalyze behavior change. In the applied youth soccer setting, practitioners might, as an example, focus on the assessment of certain resilience behaviors in the early stages of a season to observe the capacity of players to adapt to the pressures in the academy soccer environment. These behaviors could then be the subject of developmental practices (e.g., pressure training; planned disruptions) with embedded reflection (i.e., through analytical discussion of video footage – Toering et al., 2011) to develop the self-awareness of players to better understand how they behave under pressure. This could be re-assessed at subsequent stages of the season, capturing the temporality and developable nature of resilience (Kegelaers, 2023). To facilitate this practice, the development of an observational instrument with context-specific, observable resilience behaviors is required (Musculus & Lobinger, 2018).

Strengths and limitations

The breadth of the participant sample (i.e., sample size and range of roles recruited) and the novel methodology (i.e., incorporating video-stimulated reflective discussion) are strengths of this study. Specifically, incorporating participants from various roles in academy soccer brings a range of unique insights to the data. However, it should be noted that while the participants were able to report examples of observed resilience behaviors in their players, their understanding of what resilience represents may be skewed by common misrepresentation of the construct (Kegelaers, 2023) despite methodological attempts to mitigate this (e.g., by providing the same evidence-based definition of resilience behavior in the first phase of focus groups). It is also important to acknowledge the limitations of focus group methodology where social influence means that individual perspectives can be shaped *within* the focus group (Ennis & Chen, 2012), in comparison to individual interviews or qualitative surveys that can elicit individual perceptions free from group influences. To minimize this however, the lead researcher encouraged the participants to offer challenge rather than conform to each other and reminded them that the aim was not to gain consensus but to draw on individual perceptions. A further limitation of focus group approaches is the possibility that individual contributions can be restricted in groups that contain a high number of participants. In this case, the use of targeted questioning was employed to draw out responses from those who were less involved. It is also important to acknowledge that our conceptualization of resilience was based on *on-field responses/reactions* to stressors, aligned to previous attempts in research to identify behavioral markers of resilience in youth soccer (e.g., Robinson et al., 2024). While this does provide important insight into the resilience process in this context, recent theorization on the subject has illustrated that resilience contains both reactive and proactive elements (Bryan et al., 2019). As such, there may be relevant behaviors that illustrate off-field and/or proactive demonstrations of resilience that were not

captured in this study which could provide a broader view of resilience behavior in youth soccer.

Future research directions

Despite a strength of this study being the elucidation of a breadth of resilience behaviors, extending on the behavioral taxonomies for resilience in youth soccer that have a relatively narrow set of behavioral indicators (e.g., Robinson et al., 2024), at a practical level this might present challenges in developing a functional observational tool. Considering that in other areas (e.g., mental toughness) there has been criticism of the "rather overwhelming" number of associated characteristics (Andersen, 2011, p. 71), further refinement may be required to arrive at a set of behavioral items that have practical utility, while accounting for the complexity of resilience and reliably representing resilience processes (i.e., positive functioning in response to stressors) (Kegelaers, 2023). To achieve this, methodologies that incorporate domain expertise to achieve consensus of opinion could be utilized (i.e., Delphi surveys), with participants who have conceptual knowledge of resilience and research experience in the observation of psychological characteristics rather than purely expertise in the soccer domain. Similarly, although behavior can be an indicator of internal processes (i.e., cognitions and emotions) which could "reveal information about resilience" (Den Hartigh & Hill, 2022, p. 4), we are arguably *inferring* resilience from observable behavior without knowing the specific mechanisms that underpin it. As pointed out by Galli and Pagano (2018), research should take account of the cognitive factors that contribute to the demonstration of resilience. Future research could therefore explore the cognitions that underpin resilience behaviors, for example by players explaining their thought processes during game situations that required resilience via video-based reflection. Notwithstanding the evident methodological issues (e.g., recall or social desirability bias), one potential outcome of such research would be improved insight on how the interpretation and appraisal of stressors (which is integral to the resilience process; Fletcher & Sarkar, 2013), influences behavior in context.

The results of this study also present an opportunity to explore the behaviors of athletes who do (and do not) exhibit resilience (Fletcher & Sarkar, 2012), generating deeper insight on the resilience-performance relationship and creating an opportunity to assess resilience in authentic performance contexts (Galli & Gonzalez, 2015; Hill et al., 2018). The assessment of resilience during performance that explores temporal patterning over time (i.e., within games and across games) (Diment, 2014; Hill et al., 2018), would allow practitioners to assess the "warning signals" for resilience losses in competitive situations (Den Hartigh et al., 2022, p. 7) and better understand how stressors of different magnitudes elicit particular behavioral responses (Bryan et al., 2019). This behavioral observation would present an opportunity for researchers to advance knowledge in the field by comparing the *actual demonstration* of resilience in athletes compared to their *perceptions* of how they demonstrate resilience (Galli & Gonzalez, 2015). To facilitate this, researchers should focus on the development of a validated observational tool to capture objective behavioral data (Musculus & Lobinger, 2018), which can also serve as

an efficacy measure of interventions by allowing practitioners to track dynamic changes in resilience behaviors over time.

Conclusion

This is the first study to explore in-depth the behavioral demonstration of resilience in youth soccer. The findings illustrate a breath of resilience behaviors aligned to both existing theoretical resilience trajectories and resilience processes not described in previous behavioral descriptions of the concept. In highlighting a multifaceted range of resilience behaviors, this study provides the platform for resilience assessment and development practices in the youth soccer context, forming the basis of the observational tracking of resilience in naturalistic soccer settings. To achieve this, research should now focus on refining the behavioral items identified in this study to develop and validate observational instruments for resilience.

Disclosure statement

There are no conflicts of interest to declare.

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Data availability statement

The anonymized data that underpins the findings of this study is available on request from the corresponding author [BA]. The data is not publicly available due to containing information that could compromise the privacy of the research participants.

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