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College Athletes' Evaluation of Yips in Baseball

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Abstract

The absence of standardized methods to evaluate the occurrence and progression of yips in athletes has been noted. This study explored the criteria used by college baseball players to evaluate their own and others' yips. The data were collected using an open-ended survey, administered to 218 baseball players at three Japanese universities. The data were analyzed using qualitative content analysis, which identified higher- and lower-order themes in the self and external evaluations. The self-evaluations revealed 10 lower-order and 3 high-order themes, whereas the external evaluation produced 15 lower-order and 4 high-order themes. The self-evaluations prioritized internal sensations and emotions, whereas the external evaluations focused on observable behaviors like wild throws. The findings suggest that comprehensive assessment of the yips requires the integration of both subjective internal experiences and objective observable behaviors. Practical applications include the development of multidimensional evaluation frameworks that combine self-report measures with video analysis and kinematic assessments for coaches and practitioners working with athletes affected by the yips.

Keywords: *task-specific dystonia, psychological and physical interplay, athletic performance assessment, qualitative evaluation framework, baseball throwing mechanics*

Introduction

The yips are a temporary impairment of motor control, in which control is suddenly lost over motor skills developed for a sport, significantly reducing performance and potentially damaging an athlete's career. The yips have been reported in baseball, golf, billiards, darts, etc. (Gutierrez & Vanguri, 2023; Klämpfl, Lobinger, & Lehmann, 2020; Nijenhuis et al., 2024), with prevalence ranging from 10.2% to 47.1% in baseball (Aoyama et al., 2021; Maruo, Shimizu, & Miyamoto, 2024) and 25%–48% in golf (McDaniel, Cummings, & Shain, 1989; Smith et al., 2000). In baseball, the yips manifest as difficulty making accurate throws, particularly during routine plays. In golf, they may appear as involuntary twitches or hesitation during putting strokes. These examples illustrate their effects on well-practiced, previously automatic movements across sports. Studies have investigated the underlying mechanisms for prevention strategies and interventions.

Relevant studies have identified neurophysiological factors (e.g., focal dystonia; McDaniel et al., 1989), and psychological contributors (e.g., choking under pressure; Bawden & Maynard, 2001). These factors are thought to interact in complex ways in the development of the yips (Smith et al., 2000; Stinear, Coxon, & Fleming, 1980). Previous scholars reported its psychological mechanisms such as vivid negative motor imagery related to throwing failure (Aoyama et al., 2023). In parallel, neurophysiological investigations have elucidated motor coordination breakdown in symptomatic players, with abnormal muscle synergy patterns observed during dystonia-like throwing movements (Aoyama et al., 2024). The yips are significantly more common than other dystonias—for instance, musician's dystonia has a prevalence of approximately 1% (Altenmüller, 2003)—and differ in symptom expression (Ioannou, Klämpfl, & Lobinger, 2018). While choking typically occurs in high-pressure contexts, the yips can also emerge under low-pressure conditions such as practice (Papineau, 2015). These findings suggest that psychological and task-specific motor control impairments may contribute to the development of the yips, supporting the view that they constitute a multifactorial condition requiring further investigation.

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The lack of consensus regarding the development of the yips is partly due to the absence of standardized evaluation criteria, which has led to assessments based primarily on subjective self-evaluation and external observation (Adler, Temkit, & Crews, 2018). The absence of standardized evaluation criteria has also hindered both research progress and clinical management of the yips (Clarke, Sheffield, & Akehurst, 2015; Philippen, Legler, Land, Schuetz, & Schack, 2014). Klämpfl, Philippen, and Lobinger (2015) identified reliance on subjective evaluation as a significant limitation, suggesting that uncertainty in the evaluative criteria could contribute to variability in the reported prevalence of the yips.

To the best of our knowledge, no previous study has systematically examined the criteria underlying the subjective ratings provided by athletes for the yips. Given the career-threatening nature of the condition and the need for evidence-based assessment tools, understanding athletes' evaluation of the yips is essential. Self-evaluation criteria offer insights into the subjective experience of symptom onset and progression, while external evaluation criteria capture observable signs recognized by peers and coaches. Integrating both perspectives may contribute to the development of comprehensive assessment frameworks that bridge the gap between subjective experience and objective measurement. Therefore, elucidating evaluative criteria for validating existing assessments, identifying alternative approaches, and establishing standardized frameworks are crucial. This study focuses on the yips in baseball pitching among Japanese university players and identifies criteria used for self and external assessment. These findings enhance the reliability and validity of yips assessment methods while laying the groundwork for developing objective measurement techniques and targeted intervention strategies. This study addresses these critical gaps and contributes to a broader understanding of this persistent impairment.

Methods

A cross-sectional, survey-based study design targeting college baseball players was adopted. Data were collected online at three universities in Japan from May to June 2024. The Ethics Committee of Kumamoto Gakuen University and the ethics board of the first author's affiliation approved the study. The participants received detailed information and provided informed consent. Data privacy was ensured via anonymized Google Forms.

Participants

The participants included 224 college baseball players aged 18–22 years (mean age = 19.04 years, SD = 1.26 years). Six participants (2.7%) who responded, "I have heard the term 'yips' with reference to baseball but do not understand its meaning" or "I have never heard the term 'yips' with reference to baseball and do not know its meaning," were excluded, leaving 218 participants (mean age = 19.05 years, SD = 1.27 years).

This exclusion was essential for maintaining the validity of qualitative content analysis. This study specifically investigated the conceptualization and evaluation of the yips among athletes with knowledge of this phenomenon. The survey focused on articulating the criteria for evaluating the "yips" in themselves and others. Examples include "During which situations did you feel you developed the yips, and what were your reasons (criteria) for this judgment?" and "What reasons (criteria) led you to conclude that another athlete has developed the yips?" Meaningful responses presupposed a conceptual understanding of the elements constituting the yips. Without being able to conceptualize the phenomenon, participants would not have been able to articulate their evaluation criteria.

Previous studies highlighting the challenges of subjective yips assessment support the methodological necessity of this exclusion. For example, Klämpfl et al. (2015) identified variability in the prevalence of self-reported yips as a significant limitation, noting discrepancies between subjective identification and objective measurement. Clarke et al. (2015) emphasized that the absence of standardized evaluation criteria hinders research progress. Including participants unfamiliar with the term would introduce irrelevant variances because their responses would reflect general challenges in throwing rather than specific evaluation criteria, thereby threatening internal validity.

We acknowledge that certain athletes may experience symptoms similar to the yips without knowledge of the specific term. The relatively small proportion of excluded participants (2.7%) indicates that knowledge of the yips is widespread among Japanese college baseball players with extensive playing experience (mean = 11.44 years). However, investigating unconscious or unnamed experiences requires different methodological approaches, such as observational studies or biomechanical analyses, which are outside the scope of this study.

Mean baseball experience reached 11.44 years (SD = 2.22 years). Eighty-seven participants experienced the yips and knew others who had; 11, 92, and 28 personally experienced it, were aware of others' experience, and had neither personal nor observed experience.

Data collection instrument and procedure

This study employed a custom-designed, non-standardized questionnaire to collect large-scale data on the participants' evaluation criteria for the yips. A new survey tool was necessary given the absence of existing validated instruments. The questionnaire was formulated after conducting an extensive literature review (e.g., Bawden & Maynard, 2001; Clarke et al., 2015; Smith et al., 2000) and consulting with sport psychology experts with experience in yips research, qualitative studies, and the development of psychological scales. The questionnaire utilized open-ended questions designed to capture baseball players' subjective experiences and evaluation criteria. Prior to data collection, content validity was verified through a review conducted by two independent experts. The results confirmed the appropriateness of content and wording, and items were refined as necessary. The first author and team coaches conducted an online survey via anonymized Google Forms. The survey featured four major components: (1) demographic information, including gender, age, and years of baseball experience; (2) understanding and experience of the yips using a four-point scale; (3) self-evaluation criteria through open-ended questions (e.g., "During which situations did you feel that you developed the yips, and what were your reasons [criteria] for this judgment?"); and (4) other-evaluation criteria using open-ended questions (e.g., "What reasons [criteria] led you to conclude that another athlete has developed the yips?"). The participants provided informed consent and were assured of their privacy and confidentiality through anonymization protocols. Table 1 presents the survey components.

Data analysis

The authors independently reviewed and coded responses related to criteria for self and external evaluation using a content analysis approach (Bawden & Maynard, 2001; Smith et al., 2000). Lower-order themes were identified and grouped to form higher-order themes. For example, "loss of control" and "erratic throwing" were grouped into "performance instability." The researchers discussed any differences in coding until consensus was reached.

Table 1. List of Survey Items

Component	Details
Demographic information	Questions concerning gender, age, and years of baseball experience.
Understanding and experience of the yips	Participants were asked to choose one of the following options: (1) "I think I know well what the 'yips' are" (2) "I have a vague understanding of the 'yips,' but I am not sure of the details" (3) "I have heard the term 'yips,' but I do not know what it means" (4) "I have never heard of the 'yips' and do not know what it is" Participants who selected options (3) or (4) were excluded from the subsequent study as their limited understanding of the yips was considered insufficient for the analysis.
Self-evaluation criteria	Participants provided free-text responses to the following question: "In baseball, under what circumstances did you feel that you had the yips, and what are the reasons (criteria) for this judgment?"
External evaluation criteria	Participants provided free-text responses to the following question: "In baseball, what reasons (criteria) lead you to judge that someone else has developed the yips?"

Results

The comprehensive analysis enabled us to identify the criteria that baseball players use to evaluate the yips, with 3 higher-order and 10 lower-order themes derived from 151 responses. The evaluation criteria for the manifestation of the yips in others included 4 higher-order and 15 lower-order themes from 219 responses (Tables 2 and 3). Some participants provided a single criterion, whereas others listed several, leading to a discrepancy between the number of responses and participants. Representative descriptions are given in tables to increase clarity, with grammatical corrections made for readability.

Table 2. Free-Text Responses and Categories Regarding Criteria for Self-Evaluation of the Yips

Raw data	Lower-order themes (number of instances)	Higher-order themes (number of instances)
When I feel a fear of throwing from the mental aspect	Negative emotions and thinking related to throwing (23)	Negative emotions and cognitions related to throwing (23)
I lose sensation along my arm to my fingertips when throwing	Diminished proprioception in throwing (27)	Physical dysfunction and sensory disruptions (59)
My arm muscles stiffen at the moment of throwing	Muscle rigidity (15)	
My arm doesn't move as freely as I expect when throwing	Impaired arm swing (10)	
My body doesn't move the way I want it to	Impaired stable motor control (7)	
I can no longer throw the ball to the same distance I used to	Inability to throw as intended (28)	Performance deterioration (69)
When pitching at about 50% effort in batting practice, I find it difficult to throw to right-handed batters	Situation-specific symptom manifestations (22)	
The ball slips out of my hand or gets stuck	Ball slipping from or sticking on the fingers (15)	
When I start making more wild throws	Wild throws (3)	
My throwing form fell apart after I gave up a run on a bases-loaded walk and lost the game	Breakdown in throwing form (1)	

Note. Numbers in parentheses indicate the frequency of similar responses, listed in descending order of frequency in each category.

Criteria for self-evaluation: Negative emotions and thoughts related to throwing

This theme includes fear and anxiety associated with throwing, with 23 responses grouped under this theme. These are critical indicators of yips development. For instance, one participant stated that the yips may arise, "when I feel a fear of throwing from the mental aspect."

Criteria for self-evaluation: Physical dysfunction and sensory disruptions

This theme incorporates subthemes such as diminished proprioception in throwing (27 responses), muscle rigidity (15 responses), impaired arm swing (10 responses), and impaired motor control stability (7 responses). One participant mentioned that the yips arose when "I couldn't feel my fingers gripping the ball, which affected my performance."

Criteria for self-evaluation: Performance deterioration

This theme includes subthemes like the inability to throw as intended (28 responses) and situation-specific symptom manifestations (22 responses), ball slipping from or sticking to the fingers (15 responses), wild throws (3 responses), and breakdown in throwing form (1 response). For instance, one participant noted, "I can no longer throw the ball to the intended distance like I used to."

Table 3. Free-Text Responses and Categories Regarding Criteria for External Evaluation of the Yips in Other Athletes

Raw data	Lower-order themes (number of instances)	Higher-order themes (number of instances)
Afraid of throwing the ball	Negative emotions and thinking related to throwing (8)	Psychological instability and emotional responses (16)
Mental weakness	Mental instability (7)	
When their expression isn't positive	Unusual facial expression (1)	
The throwing motion isn't smooth, and it pauses midway	Muscle rigidity and movement freezing (28)	Physical dysfunction and sensory disruptions (40)
A player whose arm swing isn't smooth in arm throwing	Impaired arm swing (8)	
When they can no longer control what they used to be able to	Impaired motor control stability (4)	
It's clear to others that they can't throw the way they want to	Inability to throw as intended (58)	Performance deterioration (160)
They could throw normally when playing catch, but as soon as it was fielding practice, their throwing changed	Situation-specific symptoms (31)	
I realized it while watching their performance because their movements looked stiff and jerky	Abnormalities in form or throwing mechanics (28)	
Their throws don't reach the chest at all	Wild throws (25)	
Someone whose throws either get stuck or slip out	Sensation of the ball slipping or sticking on the fingers (12)	
Someone who keeps making the same mistakes	Repeated mistakes (4)	
They can't throw like they used to—whether it's control or ball speed	Changes in ball rotation and velocity (2)	
They said so themselves	Self-report (2)	Self-reported and subjective experiences (3)
A player showing the same symptoms as me	Symptoms common to self and others (1)* * Evaluation by individuals with experience of the yips	

Note. Numbers in parentheses indicate the frequency of similar responses, listed in descending order of frequency within each category.

Criteria for external evaluation: Psychological instability and emotional responses

This theme includes the subthemes of negative emotions and thoughts related to throwing (8 responses), mental instability (7 responses), and unusual facial expressions (1 response). For instance, one participant noted that, with the yips, others were "afraid of throwing the ball."

Criteria for external evaluation: Physical dysfunction and sensory disruptions

This theme includes the subthemes of muscle rigidity and freezing (28 responses), impaired arm swing (8 responses), and impaired motor control stability (4 responses). One participant observed that, in others, "the throwing motion isn't smooth and pauses midway."

Criteria for external evaluation: Performance deterioration

This theme includes the subthemes of inability to throw as intended (58 responses), situation-specific symptoms (31 responses), abnormalities in form or mechanics (28 responses), wild throws (25 responses), sensation of the ball slipping from or sticking to the fingers (12 responses), repeated mistakes (4 responses), and changes in ball rotation and velocity (2 responses). For instance, one participant noted, "I realized it while watching their performance because their movements looked stiff and jerky."

Criteria for external evaluation: Self-reported and subjective experiences

This theme includes self-reports (2 responses) and symptoms common to oneself and others (1 response). For instance, one participant noted, "They said it themselves" that they had the yips.

Discussion

This study provides the first systematic examination of the evaluation criteria used by baseball players to assess the yips in themselves and others. Both self- and external evaluations involved a multifaceted array of criteria, revealing distinct patterns in criterion selection. Self-evaluations emphasized internal sensations and emotional experiences, whereas external evaluations focused not only on psychological or contextual factors but also on observable abnormalities in motor behavior. These differences reflect the inherent limitations of relying solely on subjective or observational assessments and underscore the need for comprehensive evaluation frameworks that integrate both perspectives.

The most frequently cited criterion in both evaluation types was performance deterioration. This finding aligns with Maruo et al. (2024), who identified throwing accuracy deficits as a primary manifestation of the yips in youth baseball players. Our results further extend this understanding by highlighting that specific performance indicators differ between self- and external assessments. In self-evaluation, the most frequently reported criteria in-

cluded "Inability to throw as intended," "Situation-specific symptom manifestation," "Sensation of the ball slipping or sticking on the fingers," "Wild throws," and "Breakdown in throwing form." External evaluations also emphasized observable indicators, such as abnormalities in form or mechanics, repeated mistakes, and changes in ball rotation and velocity.

The next most frequently cited criteria for the yips in self and external evaluations were physical dysfunction and sensory disruptions. Particularly, self-evaluations are commonly referred to as "Diminished proprioception in throwing," "Muscle rigidity," "Impaired arm swing," and "Impaired motor control stability," whereas external evaluations often highlighted "Muscle rigidity and movement freezing," "Impaired arm swing," and "Impaired motor control stability." The findings are supported by analogous symptoms reported by cricketers in another study (Bawden & Maynard, 2001). Such physical and sensory abnormalities—particularly diminished proprioception—may serve as early indicators of neuroplastic changes associated with task-specific dystonia.

Regarding the key differences between self and external evaluations, the former emphasized internal sensations, such as finger proprioception and muscle control in throwing, whereas the latter relied on observable factors, including visible abnormalities of movement and apparent loss of coordination. These observations reflect differences in perspective between the individual and external observers, highlighting the interplay between internal awareness and external observations in comprehending yips-related behaviors.

Psychological criteria were frequently employed in self and external evaluations, including "Psychological instability and emotional responses" and "Negative emotions and thoughts related to throwing." Self-evaluations often highlighted "psychological instability and emotional responses," which is consistent with the association between negative motor imagery and yips symptom severity reported by Aoyama et al. (2023). In contrast, external evaluation emphasized "Negative emotions and thoughts related to throwing," "Mental instability," and "Unusual facial expressions."

Clarke et al. (2015) proposed a classification of the yips into three distinct types: Type I (predominantly physical symptoms), Type II (primarily psychological symptoms), and Type III (combination of physical and psychological symptoms). For athletes with Type I or Type III yips, psychological criteria may not be sufficient for evaluation. Moreover, some studies have indicated that neurophysiological factors, such as dystonia, may be underlying factors, whereas psychological factors, such as anxiety, intensifying the condition (McDaniel et al., 1989). These findings imply that changes in emotion and thinking toward throwing may not always serve as reliable criteria for evaluating the development of the yips.

The final criterion, "Self-reported and subjective experiences," was exclusively observed in external evaluation and includes two subcategories: The first is "Self-report," in which an athlete is diagnosed with the yips based on their account. The second is "Symptoms common to self and others," in which evaluators with personal experience of the yips identified others as having the condition based on symptoms similar to their own experiences.

This study identified common themes in performance deterioration and psychological instability in self and external evaluation. However, notable differences emerged. In the self-evaluation, internal sensations, such as diminished proprioception and muscle rigidity, were emphasized along with subjective emotional experiences, including fear and anxiety. By contrast, external evaluation focused on observable behaviors, including wild throws, repeated mistakes, and abnormalities in mechanics. While some criteria had the same category names, the specific content often differed, and individual responses varied considerably.

These findings indicate the multifaceted nature of yips evaluation and underscore the necessity for tools combining subjective experiences with objective measures. The discrepancies between self and external evaluations also indicate the need for further research.

Practical applications

The results of this study highlight the need for coaches and practitioners to revisit evaluation criteria for the yips. The diverse and divergent criteria identified in self and external evaluations suggest that relying solely on either perspective is insufficient. Establishing a standardized, multifaceted framework is therefore essential for accurate diagnosis and effective intervention. Given this variability, it is also crucial to develop integrated strategies that address both the psychological and physical dimensions of the yips. A comprehensive approach that incorporates both aspects is more likely to lead to successful outcomes. To bridge the gap between our findings and potential practical applications, coaches should adopt assessment protocols combining subjective and objective criteria, such as video analysis to investigate throwing mechanics, tailored questionnaires to examine internal sensations, and kinematic measurements to assess motor control, all of which can help identify and address the yips at early stages (Philippen et al., 2014). This multidimensional approach can improve diagnostic accuracy and guide targeted interventions, ultimately enhancing athlete performance and confidence.

Limitations and future directions

This study has its limitations. First, excluding participants unfamiliar with the term "the yips" (n = 6, 2.7%) may have overlooked athletes who experienced similar symptoms but lacked knowledge of the term. While necessary for the qualitative approach used to examine conscious evaluation criteria, this aspect represents a trade-off between conceptual clarity and comprehensive coverage. Second, the cross-sectional design and sample of Japanese college baseball players may limit generalizability to other contexts and populations.

Future research could address these limitations by (1) providing standardized yips education prior to data collection to ensure a shared conceptual understanding (Philippen et al., 2014), (2) combining qualitative assessments with objective measurements to capture conscious and unconscious manifestations; and (3) developing screening tools that identify experiences similar to the yips without requiring prior knowledge of the terminology. Despite these limitations, this study provides the first systematic examination of conscious evaluation criteria for the yips, offering valuable insights for the development of standardized assessment frameworks.

Conclusion

This study systematically examined the evaluation criteria for self and external assessments of the yips among 218 Japanese college baseball players. The self-evaluations emphasized internal sensations and emotions (3 higher- and 10 lower-order themes), whereas external evaluations focused on observable behaviors (4 higher- and 15 lower-order themes). The athletes most frequently cited performance deterioration as a criterion in both evaluations. The findings revealed fundamental differences between subjective and observational assessments, highlighting the need for comprehensive evaluation frameworks that integrate both perspectives. Thus, future research should validate these criteria across populations and develop tools for standardized assessments that combine subjective and objective measures.

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