Coxswains are Performers Too: Considerations for Coxswain Mental Skills Training

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Abstract

Understanding the performance demands of a sport are an essential first step for practitioners to formulate mental performance interventions with athletes. However, limited scholarly resources exist for coxswain-specific needs within the sport of rowing. The purpose of this article is to outline mental performance considerations for coxswains and provide additional considerations on utilizing coxswains to extend mental performance interventions to the rowers within their boats. Through increased understanding of coxswain performance demands and their performance indicators of communication and steering, rowing team stakeholders can leverage the skills of goal setting, visualization, mindfulness, and arousal regulation to enhance and bring about more consistent boat speed.

Keywords: Rowing, Communication, Steering, Boat, Mindfulness

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When sport psychologists and mental performance consultants formulate interventions within a competitive sport program, it is pivotal for them to first understand the sport's performance demands and context (Hamilton et al., 2020). Working within the sport of rowing, there are several elements that should first be considered by practitioners. These include the sport having continuous competition without break, minimal coach feedback during competition, and a highly interdependent shared control of performance (see Rich et al., 2021). While Rich et al. (2021) outlines the context of the sport and provides intervention guidance, one unique element of the sport, the coxswain, requires further elaboration.

Coxswains are lighter and smaller non-rowing, peer leaders on a rowing team who steer, call commands, and provide verbal feedback and encouragement from the back of an eight-person or the front or back of a four-person boat (Rich et al., 2022). The communication from coxswains is amplified and broadcasted throughout a boat through a speaker system that runs the length of the boat. This standard speaker setup allows for opportunities to leverage the coxswain role beyond what is described above. While in many cases, coxswains serve as an extension of the coach at practice, their amplified position in the boat and existing role in feedback and encouragement potentially enables them to serve as an extension of their teams' mental performance consultant, such as delivering mid-row mindfulness scripts (Rich et al., 2023). While coxswains have the potential to serve as mental performance extenders, it is important to note that coxswains are often overlooked by coaches and practitioners in terms of feedback and assessment. As they have a distinct role from rowers, attendance at team mental performance trainings may be less effective in their transfer to coxswain performance on the water and land if the generalization of the skills discussed is overlooked due to the ratio of rowers to coxswains on

a team. Though their role is different, coxswains are still performing and would thus benefit from individualized mental performance training (Hamilton et al., 2020). Consequently, the purpose of this article is to first outline mental performance considerations for coxswain on land and water, and then provide considerations on utilizing coxswains to extend mental performance interventions to land and water training as well as races.

With respect to the positionality and expertise of the authors in relation to the sport of rowing, the first author has extensive experience as a rower, a coach of youth, collegiate, and masters rowing, a rowing-specific strength and conditioning specialist, and rowing-specific mental performance consultant. The first author's coaching role included years of teaching novice rowers and coxswains the fundamentals of the sport. The second author also has extensive experience as a rower and rowing-specific mental performance consultant. Additionally, the fourth author has substantial experience providing mental performance consulting to rowers on the international level. Lastly, all four authors hold a doctorate in sport psychology. While the following strategies have yet to be formally delivered by the authors specifically to coxswains and assessed of their efficacy, the impetus of this article stemmed from a group of collegiate coxswains approaching the first author after a team goal setting workshop and inquiring how the discussed tools could apply to their specific role on the water and land.

Coxswain Performance

To identify mental performance strategies to enhance coxswain performance, it is first essential to identify the demands of the role as well as its key performance indicators (Hamilton et al., 2020). Fundamentally, the coxswain's primary role is to steer four- and eight-person crews in practice and races to prevent crashes, avoid harm, and maintain an appropriate "point" to ensure the boat travels the fewest additional meters than what is required (Rich et al., 2021).

Secondarily, coxswains execute their coach's practice plan or boat's race plan (e.g., breaking a 2000 m race into four 500 m sections with different target stroke rates, built in power strokes, and a sprint in the last 250 m) through verbal commands, encouragement, and feedback (Rich et al., 2023). They also serve a leadership role during land training and may run the minute-to-minute elements of an indoor rowing machine (erg) practice, calling for changes in stroke rate or pressure like they would on the water (Rich et al., 2022).

Key Performance Indicators

While a rowing team that emphasizes eight- and four-person crews cannot function without a coxswain fulfilling these roles, especially on the water, rarely do coxswains receive equitable external feedback and assessment of their performance as their rowing peers (Rich & Pottratz, 2022). Beyond the purpose of improvement, this lack of feedback and objective assessment can also hamper coxswain motivation as their coach's selection process is often subjective and lacks transparency. While some coaches may seat race coxswains in the same way they do rowers (rowing a time trial and switching only the coxswains to see whose steering allows the boat to go further; see Rich & Pottratz, 2022 for further detail on seat racing and selection), many assign their coxswains based on subjective observation, years of experience, personality, size, and feedback from the coxswains' rower teammates (Dresser, 2020). When a coxswain does not know what they are being assessed on or has no control to improve upon static qualities that are being assessed their motivation to improve can wane (Rich & Pottratz, 2022). The following two sections outline key performance indicators for the coxswain roles of 1) *steering* and 2) *communication*. By identifying these performance indicators and conceptualizing them as various hierarchies of goals in the sections below, coxswains have a basis to direct and leverage mental performance strategies to achieve those goals.

Steering

Coxswains play a significant role in race outcomes and practice efficacy through their steering. In a race, a coxswain's goal is to bring their boat down the course with the smallest difference between the distance the boat travels and the course length (traditionally 2000 m for championships and the Olympics). If a coxswain's boat is weaving, even within a marked lane, and travels a total distance of 2500 m along a 2000 m course, there is potential for a slower opposing boat with a straighter point to overtake the weaving boat and earn a better finish placement. This also can lead to internal frustrations as the rowers in the boat would have to race at high intensity for longer than necessary or increase the intensity beyond a sustainable point to attempt to compensate for the extra meters. In practices, poor steering can be disruptive as plans usually call for team boats to stay a certain distance apart side to side for safety reasons, but also close enough to work off each other and safely remain in sight of a coach. Valuable practice time can be lost if there are near collisions, or a coach has to chase an out-of-sight boat down.

Though every boat make and model is slightly different, steering is conducted through coxswains holding a handled rope on each side of them that is threaded to a system of levers connected to a pin attached to the boat's rudder (see World Rowing, 2016 for a video further detailing the steering and communication roles of a coxswain). When the handles are even on each side of the coxswain, the boat is "off the rudder" and will go straight, assuming equal-sided pressure from the rowers. When the boat is off the rudder, it is more balanced (set) and even over the boat's keel, making it easier to row. When "on the rudder" the boat has the propensity to lean to the same side, which makes it hard to row and slows the boat down. Even in a straight 2000 m race, coxswains have to use the rudder to maintain their point, as uneven pressure, wind, and current can influence the boat. A straight race is actually a series of small and frequent

adjustments to the rudder to have the boat move in a low-amplitude sinusoidal manner. One approach to do this, while minimizing disturbance to the boat's set, is to be on the rudder during the drive phase of the stroke and be off the rudder during the recovery phase as that's when boat set is most crucial to rowing technique and the boat is moving its fastest (see Rich et al., 2021 for detail on the phases of rowing). This style of steering can be difficult to maintain, and is mostly only seen in larger races that utilize straight buoyed courses, with these minimal adjustments being made to account for the above described pressure, wind, and current influences.

This steering strategy would be an effective process goal (controllable behavior emphasizing quality of a process) for coxswains, leading to the performance goal of having a straight point (self-referred measures of progress), which plays a role in race outcomes (Williamson et al., 2022). When coxswains find themselves drawn to outcome-orientation (outcome goal; comparative and often competitive definitions of success) because of an in-race event like another boat passing them, they can draw themselves back to their processes through a cue phrase such as "small movements, frequently." The processes of effective steering occur synergistically with the processes for effective commands, feedback, and encouragement.

Communication

Coxswains communicate with their rowers for three different objectives, 1) to issue commands in order to execute a race strategy, practice plan, or the necessary logistics to maneuver a boat to and from its storage location, 2) to provide encouragement to bolster motivation, confidence, and arousal, and 3) to impact instructional and technical feedback to improve or restore rowing performance (Gabana et al., 2015; Rich et al., 2023). The ability for a coxswain to call a race plan allows rowers to focus more solely on force production and with good technique as they trust their coxswain to do the rest. A coxswain who also can quickly

make judgements to adjust their plan and communicate those changes in the fewest strokes minimizes unnecessary strokes at the wrong stroke rate. Executing a practice plan effectively, such as knowing when to move on to the next drill, keeping count, adjusting stroke rate and pressure, having rowers start and stop the boat at the appropriate time, and know the right style of boat spin strategy to use, allows rowers to get more out of each practice. Most importantly, effective coxing commands keep rowers safe and the boat free from damage.

Coxswains guide the narrative of a race or practice. The story they tell influences rowers' attention, confidence, and motivation (Gabana et al., 2015; Weinstein et al., 2018). This narrative can be driven through traditional motivational phrases that are meaningful to the boat identity (e.g., “We stick the knife in!”), or can be related to providing information on where a boat is in a race or drill relative to the start, finish, a landmark, or another boat (e.g., “I’m lined up with their bow, let’s get open water”). A crew is likely to maintain their high-intensity efforts if they are hearing that they are walking through an opposing boat, seat by seat. Vocal tone and inflection can also influence a coxswain's ability to encourage and inspire (Weinstein et al., 2018).

While the vantage point of a coxswain does not allow for optimal observation to draw rowing feedback from, particularly when they are coxing a bow-loaded four (where they sit in the front), in an eight and stern-loaded four (where they sit in the back) they are capable of seeing all the boat’s oars at once as well as the timing and height of those oars entering and leaving the water. Coxswains also have an advantage in their assessment of their peers in that they can feel the impulse of every stroke and accurately judge if the boat is moving efficiently (Rich & Pottratz, 2022). A coxswain does not replace a coach, but when a coach is paying attention to a different boat in practice or in a race situation where coaches only see races from the shore, the boat’s coxswain is the only source of uninterrupted observation and feedback.

These considerations are relevant to land practice, but have an increased complexity on the water because a coxswain has to communicate synergistically while steering (Rich et al., 2023). Tying into the steering example above, in a power ten (a call for ten harder strokes than race pace) coxswains would emphatically count the number of the stroke at the start of the drive phase (catch; Rich et al., 2021) and put the boat on the rudder if needed. As the rowers finish their drive, the coxswain would then need to take the boat off the rudder and provide a relevant instructional and encouraging cue that aligns with the cadence of the stroke rate and recovery phase. They could repeat this cycle for not only all ten strokes, but all 250 strokes of a 2000 m race. Each recovery phase could have a different communication tied to it based on observed needs, rower preference, and race plan (e.g., “Drive the legs down,” or “Breathe”).

Mental Skills for Coxswains

Coxing is a form of performance, and thus coxswains would benefit from mental skills training tailored to their role to improve their performance on land and water (Hamilton et al., 2020). Mental skills training has the potential to help coxswains move on from mistakes, maintain positive affect, regulate their arousal and activation, sustain their motivation, increase their self-efficacy, and perpetuate their attention on relevant cues (see Rich et al., 2021 for a discussion of mental skills use in rowers). Like their rower teammates, this training could entail goal setting, mindfulness, visualization, and arousal regulation (Rich et al., 2021; Sparks & Ring, 2022). The role and constraints of the coxswain also allow them to deliver and extend mental skills interventions externally to their rower teammates. Though coxswains should solely be delivering and extending pre-existing mental skills interventions already provided by a qualified professional, as a peer leader, they should take a collaborative approach with their rowers to determine their psychological preferences as well as what needs to prioritize. However,

coxswains should first ensure they can manage their own performance before extending mental skills support to their teammates. The remaining sections of this article outline examples of coxswain-specific and -delivered mental performance interventions.

Goals

In the same way that rowers' beliefs after "catching a crab" (when an oar gets stuck in the water due to technical issues, slowing down the boat; similar to making a technical error like tripping on a hurdle) can perpetuate future crabs and technical issues (see Rich et al., 2021 for further detail on crabs), an error in steering, communication, or an unforeseen event can perpetuate further issues. As described above, the process goal for successful steering in most situations falls to "small movements, frequently" (Williamson et al., 2022). Coxswain communication goals have a higher level of complexity as they are predicated on the race or practice plan, the individuals in the boat, environmental conditions, and the situational context of what external boats are doing in the race or practice. However, by focusing on the process goals over performance goals or outcome goals for communication, the complexity and its associated stress can be minimized (Williamson et al., 2022).

Races, practices, and drills typically have a finite number of strokes, whether they are being organized and incremented by time or distance. Coxswains can tie their communication to each stroke or sets of ten strokes. If the plan calls for a power ten, coxswains can anchor their attention in providing verbal encouragement for ten strokes. Coxswains can have contingency A, B, C, and D plans based on the circumstances (Rich et al., 2021). At a certain point in a race or practice, where a power ten should be called, a coxswain may notice choppy water approaching, so they shift to their B plan to call a technique-focused ten, such as a ten for posture or ratio in their recovery. These adaptations are not necessarily overwriting the entire plan or script, but are

minor nuanced adjustments stemming from their skill, development, and experience in reading the water, wind, or field. Just like on the water, a coxswain may be giving support to a rower on land pulling a 2000 m erg test and notice they are getting frazzled and need to be reminded to breathe. Though the discussed plan was to provide encouragement and commands at the rower, in a pre-test discussion, the rower and coxswain agreed if the rower was to get frazzled at a certain time into the test, the coxswain was to shift to commands and instruction to remind the rower to breathe and pace appropriately.

Coxswain-Delivered Goals

A coxswain's instructional communication and feedback can serve as an extension of their rowers' own goal setting interventions (Williamson et al., 2022). Whether it is team, boat-specific, or individual process goals, coxswains can incorporate those cues into their instructional communication. Rather than the rowers needing to recall their process goals to maintain their attention, their coxswain can remind them through the boat speakers, so all they have to do is focus on rowing. For example, if a boat collaborates and defines one of their race process goals to be "lifting their hands into the catch," their coxswain can design a call for ten strokes to emphasize that process goal. Similarly, each call during the recovery within a power ten can be grounded in defined process goals. These calls can be timed within a race plan with different process goals being relevant to different sections of a 2000 m race.

Mindfulness

Mindfulness is defined as an awareness that arises through paying attention, on purpose, in the present moment, non-judgmentally (Sparks & Ring, 2022). It is not another attentional or self-talk strategy, it is being able to direct an individual's attention to any stimuli in a purposeful way moment-to-moment but simultaneously having a neutral awareness of their thoughts,

feelings, bodily sensations, and wider context (Sparks & Ring, 2022). This enables individuals to filter stimuli faster and make smarter responses to the ever-changing competitive environment on the water but also permitting them to accept and let go of distractions. This is due to the influence that mindfulness has on an individual's embodied cognition. Embodied cognition is the theory that the mind is not siloed from the body or world, but that they interact with one another. The dynamic interplay between physical presence, sensory perception, and cognitive process is pivotal for coxswain success. For instance, a coxswain steering a boat will make adjustments based on physical sensations and visual cues from the boat's movement. When the coxswain feels the resistance of the oars and the shift of the boat's balance, they intuitively integrate this sensory information with visual cues to steer accurately and maintain optimal speed and direction. A coxswain with a strong embodied cognition, will be able respond more effectively to unexpected or difficult conditions (e.g. stronger opponent, fast stream, challenging weather) due to their awareness of body, mind and environment.

Mindfulness is an accessible strategy that coxswains can practice formally outside of the boat through exercises like meditation, body scans, breathing exercise, centering practices and visualizations. These practices can last anywhere between a couple of minutes to 45 minutes plus depending on their meditation experience, with different exercises cultivating distinct sport-related elements of mindfulness such as present moment awareness (external & internal), nonjudgmental thinking/acceptance, and refocusing (see Sparks & Ring, 2022).

Coxswains can also practice mindfulness informally through any action that is categorized with intentional and purposeful attention. For instance, during quieter pieces of a water session, coxswains can spend a moment to notice anything novel in their surroundings, giving time to allow their awareness to broaden and connect with whatever they may notice

before turning their awareness back to their rowers. The practice of seeking novelty, widening, and narrowing awareness, can fine-tune an individual's attention regulation capacity and their ability to notice important but unusual cues (Sparks & Ring, 2022). Noticing novelty is a skill that forces an individual into the present moment. An additional informal strategy would be to spend a moment listening to the stroke cycle and paying particular attention to the change in sound through the stroke, focusing on each element of the movement, and then listening to the stroke as one full movement. Coxswains can then alternate their attention between the fine details of the stroke and the full stroke.

Coxswain-Delivered Mindfulness

Coxswains can also deliver mindfulness practice to their rowers, such as calling a body scan during the rowers' warm up on the water to ensure they are engaged with the present moment and in-tune with themselves and those around them. Alternatively, any of the above formal practices may be a good addition to the preparation for going out on the water. This group practice can enhance rowers cohesion and efficacy, as it brings a sense of connectedness to one another (Rich & Pottratz, 2022). Another relevant formal coxswain-led exercise is a centering practice that focuses on the connections between the boat and the rowers, such as the rowers' feet and their footplates, as this is where the power is translated from the body into the boat. This practice can be used on the erg or in the boat. It works best with feet-out rowing (where rowers' feet are unstrapped from their footplates securing them to the boat or erg), especially to cultivate awareness and shift in physical sensation.

However, more integrated and informal practice may be more beneficial over formal practice, such as utilizing rowing-specific anchors to help bring the rowers back to the present. These anchors could be related to the rowing movement (e.g. tap down), a tactile/physical

sensation (e.g., engage the glutes at the drive), visual (e.g., a key landmark such as a bridge that is passed during a race), auditory (e.g., sound of the blades in the oarlocks from square to feather blade) or a mantra related to values or attitudes (e.g., "be the powerful, determined and courageous lion"). Lastly, another in-training informal practice that cultivates awareness is to use closed eyed rowing, as anything that removes one of the senses or makes the movement/skill novel will encourage present moment awareness (Rich et al., 2022).

Visualization

While visualization plays a large role in mindfulness practice, it can also be utilized outside of a mindfulness framework. Shifting through A, B, C, and D plans in response to unanticipated stimuli on race day is not something a coxswain would be able to do efficiently without practice, in the same way an athlete needs to practice long before they compete. Visualization can be used by coxswains to improve their decision making in time sensitive and stressful situations (Simonsmeier et al., 2021). While coxswains can plan for contingencies or adjust past mistakes utilizing visualization in the same way other athletes can, a unique way for coxswains to leverage visualization is to listen to their own well-executed race recordings while visualizing that race in their mind. Similarly, if a coxswain mounts a camera to their head, they can use that recorded visual perspective as a reference to assist in recreating the race more vividly in their mind with emphasis on the internal perspective. They can also utilize recordings where a change of plan did need to occur. Both strategies give the coxswain the opportunity to rehearse their communication in diverse situations without the cognitive strain of having to recreate their race script and plan in their mind (Simonsmeier et al., 2021).

Coxswain-Delivered Visualization

Due to the context of rowing as a continuous closed feedback loop sport (Rich et al., 2021), coxswains can not only deliver visualization scripts on land, but during race warm-ups and practice drills (Simonsmeier et al., 2021). After rowers have learned, acquired, and developed visualization skills within their team mental performance trainings, coxswains can lead pre-race visualizations. These can guide their rowers through the entire race, as well as any anticipated calls the coxswain would make and even various contingency race strategies. This form of strategic imagery has an added benefit because the voice of the coxswain who is running the visualization exercise is also the voice that the rowers will hear during their race (Simonsmeier et al., 2021). Additionally, within practice and warm-ups, coxswains can help to develop their rowers' visualization skills through strategic imagery (as explained above), as well as through motivational imagery in which they would guide the rowers through different scenarios of success (e.g., winning a race, achieving team goals, overcoming a setback). Using the eyes closed drill (see Rich et al., 2022), coxswains can have their rowers imagine not only what they would see if their eyes were open, but also what they would hear, feel, smell, and taste to create a vivid experience in the rowers' minds. Because the rowers are already in the most ecologically correct situation, in a boat with an oar in their hands rowing together, this drill therefore minimizes the complexity of visualization as it allows rowers to focus primarily on recreating the visual aspect of the stroke (Simonsmeier et al., 2021).

Arousal Regulation

Similar to visualization, arousal regulation can be heavily intertwined with mindfulness, but also can be utilized outside mindfulness's framework. Arousal regulation includes controlling both cognitive symptoms (e.g., worrying, fear) and somatic symptoms (e.g., increased heart rate, muscle tension). Coxing is a very cognitive-heavy role, with the

requirements of having to steer, provide communication, and perceive and react to unexpected internal and external stimuli. The ability for coxswains to process information quickly and accurately is essential to their on the water role. Therefore, their ability to monitor and adjust their arousal is important, not only in its effect on motor skill execution, but also in its effect on attention width, direction, and flexibility (Gabana et al., 2015; Rich et al., 2021). Given the communication and encouragement role of the coxswain, during a race, it is more likely that somatic relaxation strategies, such as breathing or muscle relaxation, are necessary to prevent the coxswain from psyching themselves out with their own words. It can be difficult to incorporate relaxation strategies when a coxswain has to speak in sync to a boat rowing at 38 strokes per minute, but planning ahead a few moments throughout the race to utilize progressive muscle relaxation can ensure the coxswain stays loose and relaxed. An example of a quick progressive muscle relaxation exercise is to squeeze one area of the body (feet, legs, core, arms, shoulders/neck) for five seconds and then relax and move on to another area.

Coxswains also need to be prepared to find the opportunity in a race to take their relaxation breaths. This can be an intended lull, as it is unlikely that coxswains will actually be communicating or counting every single stroke of a race, or can be built into a race plan. A common section of a race plan on the collegiate and high school level is to call a “silent ten,” where the coxswain says nothing and only the synchronous sounds of the boat’s oars are heard. This can be used as an intimidation strategy when attempting to pass a boat to demonstrate outward focus and confidence. If a silent ten is programmed, a coxswain can use those 15 seconds as needed. However, if a coxswain is taking relaxation breaths, they should cover their microphone to minimize its impact on the rowers’ attention.

Coxswain-Delivered Arousal Regulation

Coxswain's communication can also be used to influence their rowers' somatic and cognitive arousal during practice and races. In the same way, coxswains can provide instructional cues, they can build off of existing team arousal regulation interventions through their calls. This could be as simple as taking ten strokes to focus on their breathing during a race or practice drill (Rich et al., 2021). Particularly in practice, coxswains can both relax and energize rowers as needed between drills or intervals. As the rowers would be between intense intervals, they can be guided and cued in their breathing to regulate somatic arousal or even be read a script to initiate cognitive relaxation. Just prior to the next interval beginning, a coxswain can switch to cuing energization to bring their rowers back into their optimal zone (Rich et al., 2021). Coxswains can leverage energizing verbal encouragement, visualization, or even playing music through their headset to begin the next interval. In races, relaxation cues can be preplanned contingencies if an opposing team's boat passes the coxswain's boat.

When it comes to aiding in the arousal regulation of their rowers, it is not just about what a coxswain says, it's "how" they say it. Prosody refers to components of speech beyond the words themselves, such as inflection, tone, pitch, and speech rate (Weinstein et al., 2018). Motivational prosody, which can be described as slower in speed, higher in pitch, and more "breathy", is an autonomy-supportive tone which can impact rowers' arousal control and motivation (Gabana et al., 2015; Weinstein et al., 2018). When rowers perceive the coxswain's words as motivating, rather than controlling, it results in higher self-esteem, greater feelings of trust and support, and less perceived pressure (Weinstein et al., 2018). The benefits of prosody can be exemplified in the first stroke of a racing start. Because the boat is at a standstill, a slower more deliberately connected first stroke is needed to start to build the boat's momentum. This is referred as the "pry," and a coxswain can guide rowers to take the stroke in its slower and

deliberately-connected fashion in the way they say the word pry. They want to ensure the length of the word aligns with the length of the rowers' pry. This prosody can also be used for coxswains to cue ratio and lengthening in their rowers' recovery phase. Therefore, coxswains should work to regulate their tone, speed (while keeping in the rhythm of the boat as necessary), and sternness when communicating with their rowers.

An Integrated Model of Coxswain Mental Performance

The key points of this article relating to coxswains' own mental performance can be conceptualized into an integrated model. Within the model, when a coxswain is performing in a competitive context, they may experience various sources of pressure (stress and anxiety) such as their own expectations, expectations from peers and coaches, apprehension regarding the actual outcome, the water's current, the weather, or having an opponent in sight. This anxiety and stress can be alleviated through individual and coxswain-specific group mental performance training, such as goal setting, mindfulness, visualization, and relaxation with a qualified practitioner. By utilizing those mental skills, coxswains can reduce their stress, anxiety, and rumination, enhance their motivation, confidence, and recovery from setbacks, regulate their attention and emotions, and lastly find greater cohesion with their crew (Gabana et al., 2015; Simonsmeier et al., 2021; Sparks & Ring, 2022; Williamson et al., 2022). Improvements in these factors can lead to refined communication and steering and thus overall team performance outcomes.

Future research should examine best practices in delivering mental skills interventions to coxswains, coxswains' own communication delivery, as well as the effect of these deliveries on performance. However, the latter two outcomes may be more difficult to assess due to their subjective nature and the multidimensional determinants of a crews' performance (Rich & Pottratz, 2022). Since coxswains' own performance is the priority, researchers should first assess

the efficacy of delivering a coxswain-specific mental performance intervention. As coxing is a form of performance, measures that would be used with other athletes would still be appropriate, such as the *Test of Performance Strategies* (TOPS; Thomas et al., 1999) and the *Mindfulness Inventory for Sport* (MIS; Theinot et al., 2014). The TOPs would be particularly useful to assess intervention efficacy, because it is only looking at coxswains' usage of the skills rather than outcomes which can be influenced by confounding factors. This assessment of efficacy should be performed at the start, middle, and end of a season by the credentialed practitioner working with the coxswains. The more subjective assessments of steering, communication, and performance outcomes should be continued to be carried out by the coxswains' coaches and peers.

Conclusion

Coxswains have performance considerations within the sport of rowing and would thus benefit from mental performance training individualized to their role. Additionally, coxswains' leadership and amplified position in a boat, on land, and within a team allows them the ability to also extend and help deliver mental skills interventions. Though the role of the coxswain is unique in sport, the implications of this article may be applied to other inherent leadership positions within a team such as a basketball point guard, a bobsled driver, or the captain of an America's Cup sailing team. There are potential rower buy-in limitations to coxswains extending mental skills interventions if they have not developed the trust, credibility, and rapport with their rowers. Lack of trust may also inhibit rowers' willingness to disclose more personal goals for fear of a breach in confidentiality. However, the trust, credibility, and rapport a coxswain may need to successfully extend interventions is the same needed to be a successful coxswain in terms of steering and communication. This trust comes with time, open communication, and successful repetition, with steering and communication being the skills to prioritize, develop, and

emphasize. Implementing education on coxswain-specific performance indicators and means for enhancement, coaches, administrators, and practitioners can leverage their coxswains' roles to bring about greater and more consistent boat speed, while also sustaining the motivation and self-efficacy of those coxswains.

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