

An Exploration of Psychological Skills and Strategies in Division-I Strength and Conditioning

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ABSTRACT

Strength and conditioning coaches (SCCs) primarily educate and train athletes in proper fitness and weight training methods to enhance qualities such as strength, power, speed, agility, flexibility, and conditioning (Magnusen & Rhea, 2009; NSCA, 2017). However, the roles of SCCs are dynamic and complex, and may include providing emotional and sport psychology support (Radcliffe et al., 2016). Considering an SCC spends a large amount of time with athletes and are not involved in game strategy or scholarship decisions, SCCs may be in an optimal position to use psychological skills and strategies (PSS) to enhance the training and performance of athletes (Feit et al., 2025; Maniar et al., 2001; Moore et al., 2019; Quartiroli et al., 2022). The purpose of this study was to gain a deeper understanding of PSS implementation within Division-I strength and conditioning settings. Semi-structured interviews were conducted with Division-I head and assistant strength and conditioning coaches (N = 16) across 13 different athletic conferences. Five themes emerged from the data: (a) Multifaceted role of a strength and conditioning coach; (b) Barriers and obstacles toward implementation of PSS; (c) Rudimentary understanding and application of sport psychology; (d) Providing social support to athletes; and (e) Elements of conventional strength and conditioning coaching. The results of this study indicate that SCCs often coach PSS superficially and/or ambiguously to improve athlete performance while having limited knowledge, experience, and confidence in doing so. Recommendations include improving the knowledge base of SCCs around sport psychology, clarifying the scope of practice

around the use of PSS with student-athletes, and enhancing the collaboration between SCCs and sport and exercise psychology practitioners.

Keywords: Mental skills, Sport psychology, Strength and conditioning

INTRODUCTION

Psychological skills and strategies (PSS) consist of techniques that can positively impact athletic performance, including the ability to maintain confidence and motivation, preserve focus, and manage the effects of anxiety during performance (Mellalieu & Shearer, 2012). Strength and conditioning coaches (SCCs) frequently use methods such as confidence building, motivational techniques, goal setting, and self-talk to improve athletes' performances, by building confidence, regulating arousal, and assisting in skill development (Feit et al., 2025; Radcliffe et al., 2013, 2015). Despite the integration of PSS into strength and conditioning settings to benefit athlete development, most SCCs do not use PSS on a regular basis for a variety of reasons (Feit et al., 2025; Radcliffe et al., 2018). SCCs have previously referenced a lack of knowledge and time, limited control and authority of training sessions, negative perceptions by athletes, and a lack of confidence as major barriers and obstacles in applying PSS throughout strength and conditioning settings (Feit et al., 2025; Radcliffe et al., 2018).

According to Radcliffe et al. (2018) and Quartiroli et al. (2022), enhancing SCCs' confidence in using

psychological techniques may be beneficial for the regular implementation of PSS in coaching settings. This confidence is closely related to the concept of self-efficacy, which refers to an individual's belief in their ability to successfully perform specific tasks or behaviors (Bandura, 1977). An individual's perceived level of self-efficacy plays a key role in shaping the specific actions individuals take in their environments (Bandura, 2001). Enhanced efficacy for coaching PSS may positively impact the types of coaching behaviors SCCs use. Moreover, increased self-efficacy might enhance the level of effort and persistence needed to successfully implement PSS to benefit the athletic performance of athletes. Since SCCs have attributed unsuccessful and limited attempts of coaching PSS to factors such as a lack of confidence, time, knowledge, and support (Feit et al., 2025), a deeper examination of the use of PSS in strength and conditioning is warranted.

Despite the recent research on the implementation of sport psychology strategies in strength and conditioning (Feit et al., 2025; Quartiroli et al., 2022; Radcliffe et al., 2013, 2015, 2016, 2018), a specific focus on the use of PSS in the Division-I college setting has not been examined. Given the differences in organizational structure, availability of resources, varying levels of support staff, and performance expectations of Division-I athletes, it cannot be assumed that results from other levels of strength and conditioning coaches can generalize directly to the specific nuances of Division-I SCCs. In this study, semi-structured interviews were conducted with certified college SCCs to help

understand the personal experiences of utilizing PSS in Division-I strength and conditioning settings. Self-Efficacy Theory (Bandura, 1977) was used as a theoretical framework to help with the development of the interview guide and the researcher's interpretation of each participants' experiences. Specifically, the researcher explored SCC's efficacy in implementing PSS, factors that may have influenced those beliefs (e.g., prior education, professional experiences, perceived success), and how these beliefs shaped the decisions to implement or avoid the implementation of PSS in their coaching practices. Guided by the Self-Efficacy Theory framework, the study addressed the following research questions: (1) Why do college strength and conditioning coaches choose to include or exclude the implementation of PSS in the strength and conditioning setting? (2) What is the content knowledge base of sport psychology amongst certified college SCCs? (3) How do certified college SCCs specifically use PSS in the strength and conditioning setting?

METHODS

This study used a basic qualitative research design in accordance with guidelines outlined by Merriam & Tisdell (2016). The researcher engaged in a deep exploration of the participants lived experiences, perceptions of PSS usage, and contextual factors surrounding the knowledge and application of PSS in Division-I collegiate strength and conditioning environments. Following approval

Table 1. Demographic information of Division-I College Strength and Conditioning Coaches (N=16)

Pseudonym	Gender	Conference	Position	Years of Experience
Ashley	Woman	Sun Belt	Assistant	0-4
Leah	Woman	Pacific 12	Head	20+
Michelle	Woman	American Athletic	Head	20+
Lisa	Woman	Big 10	Assistant	10-14
Noelle	Woman	Summit League	Assistant	0-4
Steve	Man	Big South	Head	20+
Joel	Man	Pacific 12	Assistant	10-14
Rob	Man	Colonial Athletic	Assistant	0-4
Fred	Man	Southeastern	Assistant	0-4
John	Man	Patriot League	Head	20+
Brian	Man	Metro Athletic	Head	15-19
Louis	Man	Big 10	Head	10-14
Chris	Man	Big 10	Assistant	10-14
Elliot	Man	Atlantic 10	Head	15-19
Jake	Man	American East	Assistant	15-19
Damien	Man	American Coast	Assistant	10-14

from the Institutional Review Board, participants who completed a previous survey study on the use of PSS (Feit et al., 2025) were invited to participate. Maximum variation sampling was used to establish a heterogeneity representation across key characteristics of the coaching population, including gender, coaching level, position hierarchy, and years of coaching experience (Table 1).

Eligible participants were currently employed as a Division-I collegiate SCC and had indicated a willingness to participate in a follow-up study during the initial survey. All SCCs reviewed and digitally signed an informed consent form and completed an approximately 75 to 90-minute semi-structured interview with the primary researcher. Data were collected through semi-structured interviews and questions were directed in a broad manner so that participants could construct the meaning of situations, discussions, and interactions with other people (Creswell, 2013). Interviews were conducted in a private location and audio recorded by the primary researcher through the Zoom Web Communications software (San Jose, CA). Interviews were transcribed verbatim in preparation for data analysis and data collection continued up to 16 participants, when no new information appeared from the interviews and saturation was reached (Merriam & Tisdell, 2016).

Qualitative data were analyzed using an inductive thematic analysis approach (Merriam & Tisdell, 2016). Data analysis began with open coding, in which interview transcripts were reviewed line by line by the primary researcher to identify any meaningful units of data that related to the primary research questions. While coding the data, the researcher was mindful of any data related to the primary research questions including decision-making around PSS usage, sport psychology content knowledge base, and specific methods and strategies of PSS usage. Data were manually tagged and coded through the highlighting and organization of applicable words, phrases, and sentences.

During the axial coding phase, data were analyzed in parallel across transcripts using a constant comparative method. Open codes were compared within and across participants and contexts to identify frequencies, patterns, and relevance to the research questions. Through an iterative process, related codes were clustered into higher-order of subcategories which were then organized into higher-order themes in the selective coding stage,

representing the most pertinent and recurring patterns across the data. Themes were evaluated for clarity, specificity, and alignment with the primary research questions and conducted collaboratively with peer debriefers to refine thematic elements, challenge researcher interpretations, and establish trustworthiness of the data.

Additional strategies included member checking, maintenance of an audit trail, and prolonged engagement with the data to enhance the credibility, dependability, and confirmability of the study's findings (Lincoln & Guba, 1985). Higher-order themes are conveyed in the following results below.

RESULTS

Data gathered from semi-structured interviews were used as evidence to answer the research questions. The following themes/sub-themes emerged from the semi-structured interviews and can be found in Figure 1.

Research Question #1: Why do SCCs choose to include or exclude PSS in the strength and conditioning setting?

Multifaceted Role of a Strength and Conditioning Coach

The multifaceted role of an SCC was defined as the comprehensive role that SCCs undertake to physically and mentally prepare athletes for enhanced performance. SCCs prioritized enhancing athletes' physical qualities such as speed, strength, and/or muscular size to optimize performance and prevent injuries. However, they also engaged in mental and social-emotional development including culture building, accountability enforcement, lifestyle management, mentoring, relationship development, motivation, and confidence-building.

SCCs incorporated mental preparation techniques on their own due to limited sport psychology resources. Coach Louis acknowledged their limited expertise but encouraged coaches to step outside their specialization when necessary, stating, "*We all have our lane. But just because you're in a lane doesn't mean that you can't and should not intersect into other lanes when appropriate.*" Coach Chris believed everyone involved in the development of athletes contributed to athletes' psychological and intellectual development. SCCs, with their proximity to athletes and coaching responsibilities, were

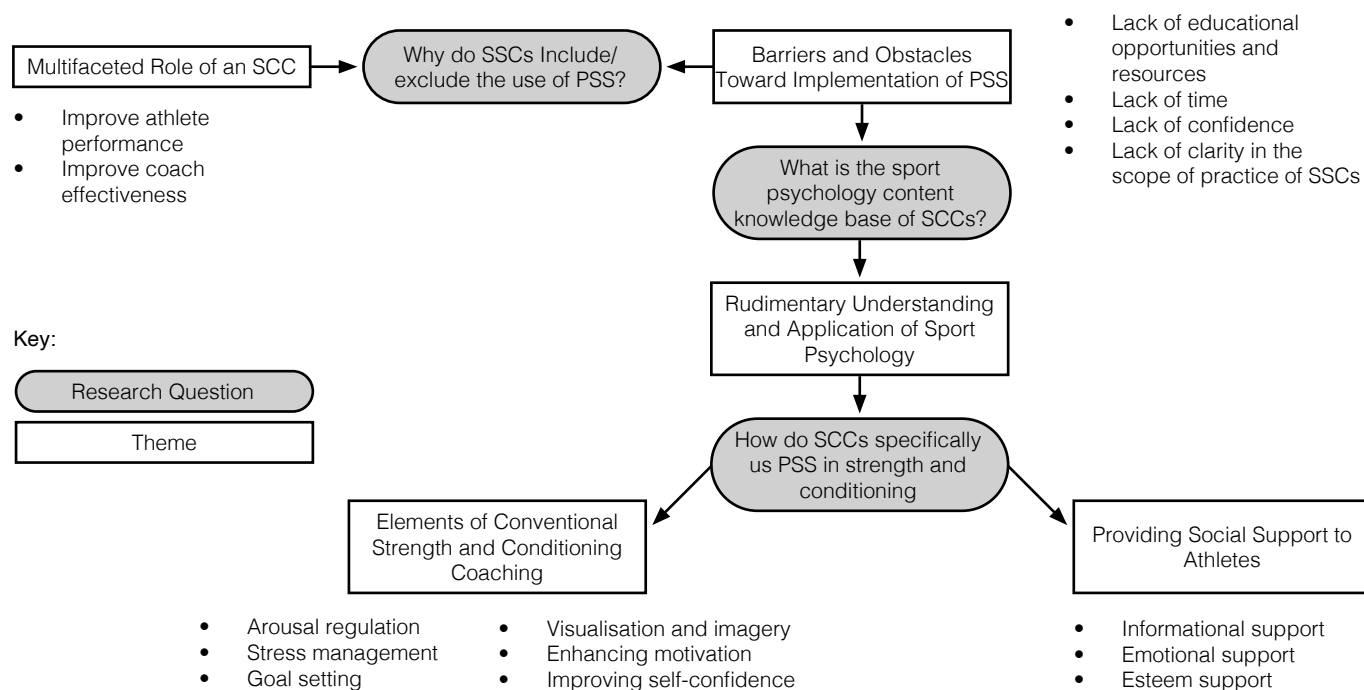


Figure 1. Model of Emerged Themes

well-positioned to provide physical and mental support. Within the multifaceted role of an SCC, two subthemes emerged from the data: improvement of athlete performance and coaching effectiveness.

Improve athlete performance. SCCs recognized that using PSS in strength and conditioning enabled athletes to enter the right mindset for training, competition, and effectively channel their thoughts and actions to enhance performance. Incorporating targeted mental training exercises and drills such as guided visualization and imagery exercises the nights before games on away trips allowed SCCs to holistically develop athletes, addressing both physical and mental aspects of performance. SCCs felt their roles were instrumental to help athletes believe that they could accomplish tasks previously believed to be not possible. For example, Coach Brian stated:

"I think understanding how to implement principles of sports psychology and mental skills is a massive part of training...the only people that get results are the ones that tap into their mind into each and every training session."

Improve coach effectiveness. SCCs thought sport psychology could enhance their coaching effectiveness by helping them teach an athlete sooner with more clarity. Coach Fred, an assistant SCC, said *"exposing coaches to sport psych opens that [opportunity] up for them, opens them [the coaches] to better understand how to speak to an athlete, relate to an athlete, which will increase our*

ability to train an athlete". SCCs appreciated having certified sport psychology professionals educate and meet with strength and conditioning staff on a regular basis prior to training sessions to help SCCs properly communicate, coach, and connect with athletes.

Barriers and Obstacles Toward Implementation of Psychological Skills and Strategies

Barriers and obstacles were defined as perceived obstructions preventing SCCs from effectively and consistently implementing PSS in the strength and conditioning setting. Subthemes that emerged were a lack of educational opportunities and resources, lack of time, lack of confidence, and a lack of clarity in the scope of practice of SCCs.

Lack of educational opportunities and resources. Many SCCs claimed they had little exposure to formal sport psychology education, only taking approximately 1-2 classes over the course of their undergraduate and graduate academic careers. Most SCCs relied upon mainstream self-help and psychology materials to learn more about sport psychology and its application in coaching such as special operator (Navy Seal) training books, organizational and business leadership guides, popular psychology books, TED talks, and motivational podcasts. When asked about where he would go to learn more about the use of sport psychology, Coach Steve, a head SCC coach, stated, *"Oh, God, I wouldn't know where to start. Well, I'd start like the rest of us on the internet*

and find out kind of what the cutting edge, most present information is out there". Less than half of SCCs could identify an expert in the field of sport psychology. Some SCCs were also frustrated by the lack of sport psychology related topics at events such as national coaching conferences or sport psychology specific workshops.

Lack of time. SCCs complained about the lack of available time to work with athletes overall, specific format and structure of training sessions, responsibilities of working with other teams, and outside priorities and constraints of athletes. Coach Rob, an assistant SSC, stated that using PSS *"is important, but also hard to implement... you need to prioritize when it comes to time. And I think things take time to develop. So, my number one job is to make sure that they are physically getting ready to play their sport. And mentally training them to do the things they need to do, again, it just takes more time."* SCCs often struggled with planning and incorporating mental training without sacrificing physical training time. Additionally, SCCs felt they were unable to schedule mental training sessions or workshops due to the various competing demands of the athletes.

Lack of confidence. Most SCCs did not feel confident utilizing PSS with athletes. Coach Noelle, said, *"I don't feel super well-versed in it. So, I don't know if I'm competent enough to implement it with a team."* SCCs expressed a need to learn about and how to properly coach PSS in the strength and conditioning setting. Coach Fred, an assistant SCC, said:

"To use it more, I would say having the knowledge base to be able to do it. And when you increase your knowledge of it, you're increasing your confidence in your ability to explain it and speak it. Because, you know, as anything, when you're not confident in a certain area, you can't explain it very well."

If SCCs were afforded the opportunity to properly learn how to effectively coach PSS with athletes, SCCs might be more confident in the regular use of sport psychology to improve the performance of athletes. Multiple SCCs believed that, based on their current understanding of sport psychology, they would have more confidence in utilizing PSS if they were more deliberate in learning and applying PSS in their coaching environments. For instance, Coach Jake, an assistant SCC, said, *"I could probably be more intentional and then that would give me some more confidence...I'm sure I'm using it in some way, but not as deliberate as I could"*.

If SCCs were afforded more opportunities to properly learn how to effectively coach PSS with athletes, SCCs might be more confident in the regular use of sport psychology to improve the performance of athletes.

Lack of clarity in the scope of practice of SCCs. Lack of formal training in sport psychology caused some SCCs to not implement PSS for fear of overstepping boundaries with other professionals. If available, SCCs often deferred psychological interventions to on-campus resources such as licensed psychologists or other certified, mental health professionals. SCCs expressed frustration that many Division-I athletic programs only employ a few sport psychology practitioners to serve hundreds of athletes, both on and off campus. SCCs welcomed the opportunity to work collaboratively alongside sport psychology practitioners to ensure a clear line of communication between SCCs and athletes, and to work together to enhance athlete performance. Unfortunately, SCCs were uncertain of what exactly was out of their scope of practice regarding athlete interactions and situations that might require a psychological intervention. SCCs felt a pressure to "stay in their lane" as physical performance coaches and not venture out of that lane if something related to mental health or performance psychology was brought to their attention.

Research Question #2: What is the sport psychology content knowledge base of SCCs?

Rudimentary Understanding and Application of Sport Psychology

Rudimentary understanding and application of sport psychology included the limited comprehension and implementation of PSS. A lack of formal education and available resources to learn about sport psychology contributed to most SCCs not being able to clearly articulate or demonstrate what sport psychology was and how it could be regularly used as an SCC. For instance, Coach John, an SCC with over 20-years of coaching experience, said, *"I don't understand sport psych; it's a foreign concept to me"*.

Very few SCCs could express an appropriate understanding of the relationship between sport psychology and athletic performance. When asked how SCCs specifically implemented sport psychology in their settings, most PSS were often superficially defined and used ambiguously. However, most SCCs recounted their uses of

imagery as helping athletes connect the dots between strength training exercises and specific sport performance. SCCs used their interpretation of imagery and visualization to help athletes become more self-aware of how muscles were activated during specific exercises throughout training sessions.

Many SCCs often had no idea they were using PSS when coaching. For example, Coach Fred stated, *“I don’t use it knowing how to use it...it’s just the way I coach, but when I look back, I’m like, yeah, that [type of coaching instruction] could be considered sport psych.”*

However, many SCCs described engaging in coaching behaviors that aligned with basic principles of sport psychology, even when they did not explicitly identify them as such. In this present study, these behaviors primarily centered on providing social support to athletes and integrating PSS principles into routine strength and conditioning coaching, as demonstrated in the following theme.

Research Question #3: How do SCCs specifically use PSS in strength and conditioning?

Providing Social Support to Athletes

Social support was defined as the personal and purposeful interactions between SCCs and athletes intended to enhance the well-being and performance of athletes. SCCs provided social support through various personal and positive interactions with athletes around strength and conditioning training sessions including informational, emotional, and esteem support.

Informational support. Informational support consisted of messages delivered from the SCCs to athletes such as advice, suggestions, and information about performance. SCCs often provided informational support around training sessions to clarify objectives, reinforce athlete performance, and positively affect athlete moods. SCCs would use this time to align training session priorities, review past performances, and give critical feedback as needed to influence future athletic performance.

Emotional support. Emotional support was defined as the actions and behaviors SCCs engaged in to develop a positive coach-athlete relationship through a genuine care and concern for athlete performance and well-being. SCCs strengthened

the depth and quality of the SCC-athlete relationship by spending meaningful, personal time with athletes outside of designated strength and conditioning training sessions such as at practices, games, and away trips when available. SCCs felt that athletes were comfortable opening up and talking to them with personal or performance issues because of their willingness and availability to talk as well as the large amount of time already spent with the athletes over the course of their relationship. Coach Elliot, a head SCC, also felt that the SCC-athlete relationship was vital to the quality of strength and conditioning coaching performance because athletes are: *“more susceptible to listen to you [SCC] and understand what you’re saying and work to apply it because they know that information comes from a place of care... if they believe in you as a person and they believe that you care about them, then I believe they’re more likely to do the things that are necessary to get the most for themselves.”*

Esteem support. Esteem support was defined as the verbal instructions and behaviors SCCs used to improve athletes’ skills, self-esteem, abilities, and personal belief during training. SCCs strived to build confidence and help athletes feel competent in their abilities by coaching them to *“perform their skills harder, faster, and longer than their opponents”* (Coach Brian). SCCs frequently engaged in positive motivational strategies such as publicly and privately celebrating progress, highlighting technical and performance achievements, and providing verbal encouragement and praise as positive reinforcement. SCCs purposely looked for the positives in strength and conditioning settings to give athletes *“the confidence to be able to do things they don’t think they can do”* (Coach Ashley).

SCCs also indirectly used PSS such as goal setting, self-talk, and cognitive reframing as part of their natural verbal coaching behaviors, especially regarding cueing proper exercise technique to improve personal belief. Most SCCs relied on situations of improper exercise technique, athlete plans for achieving goal repetitions, and negative self-talk as a platform to indirectly affect athlete’s perception and plan for success. In addition to providing social support, many SCCs applied PSS through conventional elements of strength and conditioning coaching.

Elements of Conventional Strength and Conditioning Coaching

The theme of elements of conventional strength

and conditioning coaching was defined as common strength and conditioning practices used to improve athlete performance such as team training set-up, organization, and application of coaching. In their traditional responsibilities as an SCC, most coaches incorporated mental strategies and techniques to improve athlete performance. The following specific PSS were mentioned as part of conventional strength and conditioning coaching and are included as subthemes: arousal regulation, stress management techniques, goal setting, visualization and imagery, enhancing motivation, and improving self-confidence.

Arousal regulation. SCCs commonly manipulated individual and team warm-ups, programmed exercises in a specific order, and facilitated the use of music to upregulate the arousal of athletes before and during training sessions. Athletes engaged in various warm-up protocols to stimulate the nervous system and increase overall readiness for activities. SCCs also constructed pre-game warm-ups in a manner that progressed from general, low-arousal states to more specific, high-arousal states. The use of music was the most common form of arousal regulation used during training sessions. Varying the volume, music genre, and providing opportunities for individual and team selections were the most cited factors when using music as an arousal-regulation aid. SCCs felt that the proper selection of music could “*create a positive environment*” (Coach Noelle) amongst the team during training and “*get people turned up*” (Coach Louis), which they believed could enhance athlete’s energy, engagement and readiness for training.

Additionally, SCCs prioritized relaxation routines to downregulate the sympathetic nervous system and shift the athletes into a more parasympathetic state to enhance recovery. Methods of relaxation included variations of yoga, diaphragmatic breathing, meditation, stretching, mobility and soft-tissue routines, and soothing music. SCCs that encouraged meditation as a relaxation practice asked athletes to use meditation outside of training using mobile phone applications such as Headspace (Melbourne, Australia) or Insight Timer (New South Wales, Australia). SCCs described using relaxation techniques for a variety of purposes, including the recovery from the previous session, stress management, and mental preparation for future events.

Stress management. SCCs conveyed a frequent use of wellness questionnaires and performance

technology devices (e.g., velocity-based trackers) to assist in the overall management of athlete stress. Velocity-based trackers during strength training allow SCCs to manage and optimize the proper load for athletes to use, assisting in the overall management of athlete stress (Mann et al., 2015). Wellness questionnaires were commonly distributed to athletes outside of training to track subjective metrics such as overall stress, quality of sleep, soreness, nutrition, mood, and overall motivation to train. These data were collected to adjust training loads as needed to help facilitate a more beneficial training adaptation. SCCs who had access to performance technology devices, such as velocity-based trackers, measured athlete fatigue through metrics such as bar velocity during training. Instantaneous display of bar velocity during a training set allowed SCCs to modify training routines as needed due to overall athlete fatigue and readiness.

Goal setting. SCCs used goal setting techniques during the planning and programming of training sessions. SCCs primarily relied upon performance testing and key performance indicators during seasonal training periods to help athletes set, prepare, and achieve physical performance goals. During active sessions of training, SCCs encouraged athletes to set specific performance and process goals, such as improving scores on a team fitness test or aiming for extra repetitions during an open testing set. SCCs used performance testing as a way of establishing accountability within the team and remind athletes of their agreed upon goals that were set earlier in the season. Most SCCs purposely scheduled additional and external sessions outside of training that focused on goal setting. These specific SCCs scheduled private and group goal-setting sessions at the beginning and end of training off-seasons.

Visualization and imagery. When asked about the use of imagery (i.e., using all five senses to create or recreate an experience in the mind), SCCs primarily used visualization (i.e., the use of mental pictures/videos to rehearse or prepare for performance) to help properly cue athletes to perform a specific exercise and relating it back to a similar sport action. For example, SCCs would try to have athletes visualize the triple extension patterns of exercises such as Olympic lifts and medicine ball throws as sport-specific movements such as tackling, driving a golf ball, or jumping. Additionally, SCCs described imagery as a kinesthetic strategy to help athletes understand how certain exercises feel in relation to

muscular tension and body position while training. Most SCCs had a surface-level understanding of imagery and its use of all the senses to create or recreate an experience in the mind. The SCCs that clearly identified what imagery was and how it was implemented primarily used imagery for improved future sport performance, not specifically strength and conditioning performance.

Enhancing motivation. Enhancing motivation was defined as the attempts to enhance the psychological factors that energize, direct, and regulate the behaviors of athletes, such as increasing training effort, reinforcing persistence during challenging workouts, and encouraging team engagement during sessions. Many SCCs identified motivation as an important component in coaching athletes during strength and conditioning workouts but were ambivalent about their primary role and responsibility. Coach Louis felt, *“If I don’t believe that I’m motivating, then I need to find a new job and do something else”*. Other SCCs did not want athletes and sport coaches to rely on the SCC to be the primary source of motivation. For instance, SCCs did not want the role of the coach to *“be a yeller and a screamer and a rodeo clown”* (Coach Steve). Coach Michelle explained:

“I never want to see somebody rely on me as always bringing the juice. Why does it always have to be me?... I’ll bring the juice when you want me to bring the juice. But you’ve got to find a way to step it up and take control of that at some point.”

SCCs expressed a need for “bringing energy” to help create a positive and confident environment for athletes to succeed, which might enhance athlete motivation through an increased level of arousal. SCCs used music, intra-team competitions, and performance technology to assist in the creation and maintenance of a high-energy, motivational, and positive environment. Some SCCs also incorporated educational materials such as TED talks and storytelling to facilitate intrinsic motivation amongst athletes. Despite mixed opinions, SCCs felt motivating athletes was a frequent and necessary part of their jobs.

Improving self-confidence. In addition to the social support that SCCs provided athletes, SCCs believed the overall field of strength and conditioning, and the weight room itself, were instrumental platforms in the development of self-confidence and self-efficacy for athletes. Improving self-confidence was defined as helping athletes feel they could successfully perform

desired behaviors. SCCs regularly established an environment to progressively overload training and tracked performance accomplishments to optimally prepare athletes for competition. Additionally, SCCs felt physical training helped athletes gain confidence through other areas of their performance such as improving their nutritional behaviors, breaking repetitive injury cycles, and improving overall athleticism.

DISCUSSION

While SCCs regularly engage in the use of PSS as an active coach, many SCCs do not possess an adequate knowledge base of sport psychology. According to Quartirol et al. (2022), SCCs’ level of familiarity, confidence, training, and perceived effectiveness of PSS play a crucial role in an SCC’s use of PSS with their athletes. The types of resources identified by participants also highlight a potential gap between evidence-based sport psychology and popular “mental toughness” literature. Although these materials may offer practical insights into leadership, resilience training, or “mental toughness” strategies, many of these resources are not typically grounded in empirically supported sport psychology principles. As such, the reported superficial level of sport psychology knowledge could be the result of an overreliance of popular psychology or social media buzzwords and phrases, minimal coursework, professional development, or certification requirements pertaining to this topic in the field of strength and conditioning. Part of the requirements to become a certified strength and conditioning specialist through the NSCA includes passing a 95-question (80 scored) written exam on the scientific foundations of coaching, of which 25% of the questions fall within the area of sport psychology (NSCA CSCS Exam Description, 2025). In addition to a practical examination, to become a certified collegiate SCC through the CSCCA, candidates must take a 150-question (125 scored) written exam, with only 5-10% of the total questions focused on sport psychology (N. Guman, personal communication, August 4, 2020). To reflect the multi-faceted role of the collegiate SCC and improve overall coaching effectiveness, coaching organizations such as the CSCCA may want to consider an enhanced emphasis on sport psychology with additional educational resources available to members and recommended best practices for enhanced collaboration with SCCs and SPPs within organizations and programs.

SCCs would also benefit from a more robust sport psychology coaching education program. According to Feltz and Lirgg (2001), the most effective coaching education programs should be ones that use specific approaches to help increase one's confidence in coaching such as setting challenging but reachable goals, observational learning, and simulated learning experiences. To develop coaching skills and knowledge, SCCs should participate in actual coaching experiences (Côté, 2006). A specialty program on PSS in strength and conditioning may be valuable for SCCs who have a perceived low level of self-efficacy for this skill. A targeted approach in improving content knowledge may improve the overall self-efficacy levels of SCCs and their use of PSS. In accordance to the recommendations by Quartiroli et al. (2022), sport psychology education should include SCC-specific examples to optimize a coach's likelihood of implementing PSS within training sessions. Based on the results of this study, governing bodies of strength and conditioning may wish to consider adding a consistent sport psychology track to their events to improve SCCs' knowledge and application of PSS for performance enhancement.

SCCs and other support staff members should aim to fully understand and communicate the appropriate scope of practice regarding psychological assessments, coaching, and interventions. According to the NSCA (2017), the scope of practice for SCCs has "expanded and diversified to the point where it is very challenging, and often unrealistic, for each individual to acquire proficiency in all areas" (p. 5). The CSSCA's Code of Conduct also states that SCCs are advocates for the health and performance of athletes and assumes an obligation to treat, train, and support athletes with the highest of ethical standards (CSSCA, 2025). To help SCCs further explore the potential scenarios they might incur as a certified professional, coaching organizations and certification committees could offer a more robust recommendation of areas its applicants should consider seeking additional education after passing the examination and entering the workforce.

An opportunity also exists for sport psychology practitioners to work directly with SCCs to improve the knowledge and application of sport psychology concepts and techniques. A more collaborative partnership between sport psychology practitioners, SCCs, and other support staff members may enhance departmental awareness and screening of possible psychological issues that need expert

attention. Additionally, this relationship may provide a more integrated, high-performance model of athletic services by bridging the gap between physical and mental performance.

CONCLUSION AND FUTURE RECOMMENDATIONS

To further understand the use of PSS by SCCs in strength and conditioning settings, future researchers should explore coaches' sport psychology content knowledge alongside their perceived self-efficacy for implementing specific PSS. Quartiroli et al. (2022) found that an SCC's familiarity with, knowledge of, and confidence to use PSS are primary predictors of their actual frequency of use. Given the wide range of sport psychology education across certification organizations, differences in content knowledge may influence both coaches' perceived self-efficacy and the quality with which PSS are implemented. Furthermore, the findings of the present study suggest that some SCCs may have difficulty clearly identifying or explaining evidence-based PSS within their strength and conditioning coaching practice. This lack of conceptual awareness may increase the likelihood of relying on ineffective or inconsistent psychological approaches or language, potentially limiting both performance enhancement and athlete mental well-being.

Radcliffe et al. (2013) observed that practitioners affiliated with the Australian Strength and Conditioning Association (ASCA) utilized PSS more frequently than those accredited by the UKSCA or NSCA, suggesting that different educational and accreditation models may impact implementation. As content examinations progressively update to match the everchanging landscape of coaching responsibilities and accreditation requirements, certifying organizations should collaborate to establish a joint statement on best practices of strength and conditioning coaching, which may include an enhanced integration of PSS utilization.

Radcliffe et al. (2018) identified that internal barriers, such as a lack of confidence in demonstrating PSS and difficulty quantifying their performance benefits, often prevent SCCs from utilizing these strategies. Although coaches may describe these barriers as a lack of confidence, Self-Efficacy Theory (Bandura, 1977; Bandura & Adams, 1977) may suggest it is their task-specific beliefs about successfully implementing PSS, not just a lack of

overall confidence, that are most likely to influence whether these strategies are adopted, refined, and sustained over time. If coaches can improve their PSS coaching-efficacy, it may positively affect the types of coaching behaviors chosen and the level of effort and perseverance needed to successfully impact coach and athlete performance, as coaches who have high perceived levels of self-efficacy are generally more effective than those with low levels (Boardley, 2018; McLachlan et al., 2012). Furthermore, Feit et al. (2025) found that more experienced SCCs utilize specific strategies like self-talk significantly more than novice coaches, suggesting that PSS utilization may evolve alongside years of professional experience.

Lastly, an exploration of PSS usage in Division II/III athletics programs, private sector, high school, and professional settings may be warranted to identify unique administrative or environmental constraints. Radcliffe et al. (2016) noted that 61% of SCCs adopt “psychology-oriented responsibilities,” including counseling and mentoring, often in the absence of a sport psychologist. The findings of the present study further suggest that, although SCCs frequently incorporate psychological principles into their coaching, many have difficulty clearly identifying or articulating evidence-based sport psychology strategies. Together, these findings highlight the potential value of greater integration and collaboration between SCCs and qualified sport psychologists. Regular interdisciplinary communication may enhance SCCs’ sport psychology knowledge, increase confidence in implementing evidence-based PSS, and promote appropriate referral practices when athletes require specialized psychological support. In addition, coaching organizations and athletic departments may improve the dissemination of evidence-based resources through webinars, conferences, interdisciplinary workshops, and continuing education opportunities designed to bridge the gap between theory and applied strength and conditioning practice. Consistent with this recommendation, Feit et al. (2025) advocate for auditing current professional development programs to identify educational opportunities that most effectively translate sport psychology theory into practical coaching applications.

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CONFLICTS OF INTEREST

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Ethics for this study were approved in line with University’s ethics procedure.

AUTHOR CONTRIBUTIONS

Adam Feit: Conceptualization; Methodology; Investigation; Formal analysis; Writing – original and final draft.

Elizabeth Mullin: Formal analysis; Writing- review & editing; Supervision.

Jasmin Hutchinson: Formal analysis; Writing- review & editing; Supervision.

Brian Thompson: Supervision.

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