Effective Delivery of Pressure Training: Perspectives of Athletes and Sport Psychologists

William R. Low[1], Joanne Butt[2], Paul Freeman[1], Mike Stoker[3], and Ian Maynard[1]

[1] University of Essex

[2]Liverpool John Moores University

[3]English Institute of Sport

Author note:

All correspondence should be addressed to William R. Low, School of Sport, Rehabilitation and Exercise Sciences, University of Essex, Wivenhoe Park, Colchester CO4 3SQ, United Kingdom.

E-mail: wl18596@essex.ac.uk

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Abstract

Pressure training (PT) strategically increases pressure in training to prepare athletes to perform under pressure. Although research has studied how to create pressure during training, PT's effectiveness may depend on more than creating pressure. A practitioner's delivery of sport psychology interventions can moderate their effectiveness, so the current study explored perspectives of sport psychologists and athletes on the characteristics of effective PT delivery in applied settings. Eight international-level athletes and eight sport psychologists participated in semi-structured qualitative interviews in which they described their experience participating in or conducting PT, respectively. Thematic analysis produced four themes relating to effective delivery: a) Collaboration with athletes and coaches: "with," not "to", b) Integration into training, c) Upfront transparency, and d) Promoting learning before and after PT. The themes provide guidance for planning, conducting, and following up on PT sessions in applied settings. The best practices discussed could increase athletes' receptiveness to PT.

Effective Delivery of Pressure Training: Perspectives of Athletes and Sport Psychologists

Pressure training (PT) is an intervention that applies pressure on athletes while they practice their sport to help them learn to perform under pressure. Pressure refers to athletes' increased perceived importance to perform well (Baumeister, 1984), and practitioners or coaches can create this pressure strategically. Pressure manipulations used in PT studies have included having to clean the changing rooms (Bell et al., 2013), judgment from an authority figure (Alder et al., 2016), and the chance to win a starting spot in the next competition (Kent et al., 2021). Coaches may already make athletes run sprints or do similar consequences for losing a drill in training, but PT attempts to increase pressure above the level that athletes feel in a typical training session.

In addition to the strategic creation of pressure, PT is also strategic in its application of that pressure. PT's purpose distinguishes it from running, push-ups or other physical punishments that are used to motivate or discipline athletes. Athletes could be motivated but still need to improve their abilities to cope with pressure, and training such abilities likely requires PT to take place regularly enough to have lasting effects. Furthermore, PT can also accompany other mental training that teaches coping skills that athletes can then practice during PT.

Research has suggested that PT can in fact improve performance under pressure. In Low et al.'s (2021) meta-analysis, 13 out of 14 studies found that PT-trained participants outperformed control groups when under pressure. After PT, athletes may perform under pressure as well as they do in situations without pressure (Alder et al., 2016). PT does not necessarily prevent athletes from feeling pressure, but it does help them acclimate to that pressure so they can maintain performance (Oudejans & Pijpers, 2009). Although replicating

competition can be difficult, training under mild levels of pressure can still benefit future performance under higher levels of pressure (Oudejans & Pijpers, 2010).

While early studies focused on the effect of training under pressure, few showed practitioners how to create that pressure (Stoker et al., 2016). Some studies in experimental settings used pressure manipulations that may not be practical or sustainable over time in applied settings. For example, many teams may not be able to afford the monetary rewards used in some research (e.g., Lawrence et al., 2014). Recognizing that creation of pressure had not been studied, Stoker et al. (2016) examined stressors that elite-level coaches used to intentionally create pressure during training sessions. The ensuing framework categorized stressors into demands and consequences. Demands increased the difficulty to perform. Examples included adding distractions to the environment or changing the rules of a drill. Consequences included rewards (e.g., selection), forfeits (e.g., having to miss a training session), or judgment (e.g., being watched by the national team's performance director). Subsequent research found that consequences increase pressure more than demands do (Stoker et al., 2017, 2019). Kegelaers et al. (2020) also identified additional "planned disruptions," such as unfairness and physical taxation, that coaches use to familiarize athletes with pressure and other challenges common in competition.

Pressure manipulations may be necessary but not sufficient for PT to improve performance because effectiveness may also depend on a practitioner or coach's delivery of the intervention. Previous studies have illustrated the importance of delivery and relationships in sport psychology (e.g., Sharp et al., 2015). In Poczwardowski and Sherman's (2016) heuristic for sport psychology service delivery, delivery consists of many elements of science and "art" beyond the psychological tools or skills that a practitioner teaches. Practitioners have attributed

success of interventions to elements such as strong working alliances and active engagement from athletes (Sharp et al., 2015; Tod et al., 2019). Other factors, including involvement of coaches, can create an environment conducive to athletes' engagement and relationship with practitioners (Henriksen et al., 2019).

The link between effectiveness and delivery is well-established, but sport psychology intervention studies have often neglected to assess or account for delivery (Ivarsson & Andersen, 2016). One reason for this "practitioner-evacuated" research is a preference to control for variables so that only the intervention's content explains results, as in randomized control trials (Ivarsson & Andersen, 2016, p.13). PT research has reflected this bias. Some studies took place in experimental settings with university students instead of athletes (e.g., Lewis & Linder, 1997), and other studies trained athletes but did not describe the researcher/practitioner's delivery or relationship with the athletes (e.g., Oudejans & Pijpers, 2009). One exception is Bell et al. (2013), who delivered PT with a transformational leadership style in which coaches expressed belief in players and connected PT to an inspirational vision for the team's future performance. However, no subsequent studies have further examined this or any other style of delivery.

Some elements of delivery (e.g., working alliance) may apply universally across sport psychology, but PT has unique challenges that warrant extra attention to its delivery. Because PT generally takes place during training sessions, practitioners must be comfortable working in an environment that may traditionally emphasize physical or tactical skills before psychology. Opportunities to deliver PT may depend on the receptiveness of coaches, who could view PT as infringing on their domain. Added pressure may also make training sessions less enjoyable and more threatening to athletes, so practitioners cannot assume that athletes will automatically recognize PT's value and want to participate. Although PT often creates threatening

environments so that athletes learn to view them as a challenge (van Rens et al., 2021), athletes might instead mistake PT for bullying. Some coaches have described how planned disruptions damaged relationships with athletes and fellow staff members, including loss of trust (Kegelaers et al., 2020). A coach or practitioner's attention to delivery therefore may need to be commensurate with an intervention's level of risk. This delivery could include conveying PT's intent to help, not hurt, athletes (Kegelaers et al., 2020).

Exploring delivery is especially pertinent now because of the recent increase in applied PT intervention studies. With the involvement of coaches, researchers have conducted PT in teams' training sessions for basketball (Kegelaers et al., 2021), cricket (van Rens et al., 2021), and soccer (Kent et al., 2021). Effective delivery is necessary for accurate evaluation of interventions. If an intervention's effectiveness depends on delivery, then poor delivery could confound results and limit conclusions about the intervention itself. On the other hand, delivery that helps athletes accept and understand PT could increase chances that an intervention does improve performance.

To some extent, authors of interventions have already described aspects of their delivery. Van Rens et al. (2021) let players choose pressure manipulations because autonomy could increase motivation for the intervention. Leading up to PT, multiple researchers have conducted workshops to teach athletes skills for coping with pressure, such as cognitive restructuring (e.g., Kent et al., 2021). Although a workshop itself could be considered part of the intervention's content, the act of providing this support may also contribute to the facilitative environment that Fletcher and Sarkar (2016) argue is essential when training qualities related to performance under pressure, such as resilience. By describing these aspects of delivery along with content of

their intervention, researchers remind readers that translating PT to applied settings entails more than creating pressure.

More research can build on this increased transparency about delivery. There may be no single formula for PT, but there may be aspects of delivery that are especially important for PT. Fletcher and Sarkar (2016) did discuss the hands-on role that practitioners have before, during, and after PT to help ensure it improves performance. For example, practitioners need to adjust levels of pressure and support according to athletes' responses to pressure, and language used to describe pressure can influence whether athletes view pressure as a challenge or threat (Fletcher & Sarkar, 2016). Nevertheless, Fletcher and Sarkar (2016) acknowledged that writing about these ideas is easier than applying them and achieving positive results in applied practice. An intervention can be well-planned, but its implementation depends on an organization's culture and politics, interpersonal dynamics, and key decision-makers' views on psychology. Examining PT in applied settings could suggest how practitioners navigate these environments and challenges.

In their study of how coaches create pressure in training, Stoker et al., (2016) showed that applied practice can guide theory and future applied practice. Similarly, practitioners could highlight specific challenges and best practices for delivering PT. Whereas intervention studies each describe a single intervention, practitioners may be able to reflect on extensive experience with PT. Their approaches to delivery may reflect lessons learned and strategies developed over time from delivering various PT interventions with different athletes. Their PT may also differ from interventions that are conducted as research. Practitioners may have more flexibility when not restricted by research designs, and they may also face more challenges of applied settings when integrating PT into athletes' training over the course of a season rather than three or four

weeks. Their insight could bridge the gap that Fletcher and Sarkar (2016) acknowledged exists between ideas and implementation.

Although practitioners are often the ones who deliver PT, athletes are the ones who can confirm best practices and identify obstacles that practitioners still need to address. Elite athletes in particular could have valuable insight on the aspects of delivery that improve outcomes and receptiveness to the intervention. PT may simultaneously be especially relevant to elite sport environments yet garner skepticism there. Elite sport emphasizes a "ruthless pursuit of performance" (McDougall et al., 2015, p. 270), and PT's purpose of enhancing performance under pressure supports that pursuit. However, practitioners may also encounter elite sport's resistance to change (Eubank et al., 2014). A first step toward reducing this resistance could be to understand potential misconceptions about PT and how to address them. Effective consulting involves listening to and partnering with athletes (Sharp et al., 2015; Tod et al., 2019), so recommendations from research should also consider athletes' point of view.

Navigating barriers to receptiveness adds complexity to delivering an intervention, and qualitative methods can help to reveal and make sense of such complexities (Smith & Caddick, 2012). In their studies on consulting effectiveness in sport psychology, Henriksen et al. (2019) and Sharp et al. (2015) have also used qualitative methods. "Thick" descriptions allow a reader to reflect on participants' experiences and relate them to the reader's own experience. This "naturalistic generalizability" occurs when a study resonates with, provokes action in or stimulates curiosity among readers" (Smith & Caddick, 2012, p.69). Accordingly, the present study attempted to prompt practitioners to consider delivery and make informed decisions about how they deliver PT. The study's purpose was to explore perspectives of sport psychologists and athletes on the characteristics of effective PT delivery in applied settings.

Method

Philosophical Approach

This study adopted a pragmatic approach to research. Pragmatism prioritizes generating useful knowledge (Giacobbi et al., 2005), and this study aligned with that aim because it attempted to learn about experiences and best practices that can inform practitioners' delivery of PT. Pragmatism does not seek absolute truth, and the goal was not to identify a single best way to deliver PT. Instead, it attempted to bring to light some important ideas to consider when delivering PT. Dialogue between stakeholders and researchers can help to approach a "practical level of truth" about an issue (Giacobbi et al., 2005, p. 22), and methods were selected to increase this dialogue.

Participants

Participants were eight international-level athletes (3 male, 5 female) and eight sport psychologists (4 male, 4 female). Purposeful sampling identified "information rich" participants who had extensive knowledge of PT delivery (Smith & Caddick, 2012). For the athletes, inclusion criteria were: a) experience training under pressure that sport psychologists and/or coaches had intentionally created, and b) experience competing at the international-level. Each athlete had competed in at least one Olympics, World Championships, or Paralympics. Sports included para and able-bodied sports, including boxing, table tennis, shooting, basketball, archery, trampoline, gymnastics, and taekwondo. Recruitment prioritized athletes who met inclusion criteria, so no specific sport or type of sport was targeted. However, most athletes who were identified as meeting both inclusion criteria came from individual sports. The athletes' mean age was 28.5 years (SD = 8.7), ranging from 19 to 47 years. Mean years of experience in

their sport was 11.5 years (*SD* = 4.1), ranging from seven to 20 years. One athlete had retired from sport two years before data collection, and the rest were still active.

For sport psychologists, inclusion criteria were: a) experience conducting PT, and b) chartered status from the British Psychological Society and registration with the Health & Care Professions Council, the regulatory professional body for practitioners in the UK. The psychologists had conducted their PT with international-level athletes and/or podium athletes preparing for future international competitions in various team and individual sports. Mean age was 34.8 years (*SD* = 3.8), ranging from 31 to 40 years. Mean experience as a sport psychologist was 9.3 years (*SD* = 3.8), ranging from six to 17 years.

Procedure

The study was approved by a university ethics committee. Sport psychologists were recruited from core organizations for supporting elite performance in the UK. As the research team identified psychologists known to conduct PT, each was invited via text message or email to participate in the study. Eight psychologists were contacted, and all eight agreed to participate. Although not all used the term "pressure training," all had intentionally increased pressure on athletes during training to improve the athletes' performance in competition. Athletes were identified through contacts on national teams or by asking the participating psychologists to recommend athletes who had participated in PT. Eight athletes were contacted, and all eight agreed to participate. Informed consent was obtained, and each individual participated in a one-on-one semi-structured interview with the first author via Skype or Zoom.

Separate interview guides were developed for sport psychologists and athletes. The interview guide for psychologists asked them about the process of developing and delivering PT (e.g., "Can you describe your experience conducting pressure training?"). Some questions

focused on delivery, such as monitoring levels of pressure (e.g., "How do you know when you have put athletes under enough pressure"). Other questions about creating pressure and impacts of PT elicited responses about delivery because it is intertwined with creating pressure and impacts. The athlete interview guide included some questions that directly asked about delivery (e.g., "Besides increasing pressure, what else do sport psychologists do that makes pressure training effective?"). As with the psychologists, athletes also discussed aspects of delivery when answering more general questions about their experience participating in PT. Both interview guides used open-ended questions to provide participants with flexibility to discuss the ideas that they felt were most relevant and to encourage participants to provide in-depth answers (Smith & Caddick, 2012). The semi-structured nature of interviews allowed the researcher to ask follow-up questions for the participants to elaborate on answers. For example, after an athlete described rewards and punishments used to create pressure, a follow-up question was, "How did [sport psychologist] get you to buy into those rewards and punishments?". Interviews were recorded and lasted 35-55 minutes. The first author then transcribed each interview verbatim. Names of the athletes and sport psychologists were replaced with ID numbers (e.g., A1 or SP1).

Analysis

Analysis followed Braun and Clarke's (2012) guidelines for reflective thematic analysis. The first author first read and re-read each transcript to gain familiarity with the data. The next step was to code the transcripts. Codes were descriptive labels assigned to segments of text that related to the study's purpose. Coded segments were then reviewed, and related ones were grouped into themes. Themes were then reviewed to assess how well they represented the data and adjust them when necessary. Related themes were collapsed into one. The names and definitions for the final themes were then determined by the all of the co-authors.

Throughout the analysis, the second and third authors also reviewed the initial analysis as "critical friends" to enhance trustworthiness of the results (Smith & McGannon, 2018). After reading and analyzing one of the transcripts, they shared their approach to coding and theming with the first author. They also provided feedback on the themes presented by the first author. Researchers play an active role in constructing themes (Braun & Clarke, 2019), and the different perspectives from critical friends helped the first author see patterns and alternative interpretations of data. We met several times and produced multiple iterations of analysis. Instead of reaching total agreement, we attempted to enhance the defensibility of findings and their ability to achieve the study's purpose as best as possible (Smith & McGannon, 2018). Throughout data collection and analysis, the first author also wrote memos in a reflexive research journal to note trends in the data, record rationale for analytical decisions, and think about feedback from critical friends (Culver et al., 2012).

Results

Participants discussed processes and approaches to PT that helped athletes develop performance under pressure and be open-minded about the intervention. Four themes encapsulated these aspects of delivery: a) Collaboration with athletes and coaches: "with," not "to", b) Promoting learning before and after PT, c) Upfront transparency, and d) Integration into training. Each theme is summarized in Table 1 and described in more detail below. Raw data quotes are presented to allow readers to interpret data independently.

Collaboration with athletes and coaches: "with," not "to"

All psychologists and some athletes discussed the importance of collaboration when conducting and designing PT, including development of pressure manipulations. According to SP6, psychologists should do PT "with" athletes rather than "to" them. To choose demands or

consequences that would in fact increase pressure, psychologists needed to know and listen to their specific athletes or team. Differences in sport and team cultures could mean that a certain forfeit or form of judgment might increase pressure for some populations but not for others. Therefore, psychologists and athletes needed to work together to identify pressure manipulations that were meaningful to the athletes. SP1 provided an example that fit the personality for one boxer:

> So when we've done a consequence with her, it was that she had to sing in front of the group afterwards, like to serenade them. So that was the consequence, and she was like "I am *not* doing that. That's horrendous." But she came up with it, and she's like, "I'm going to do everything in my power not to do that."

Collaboration did not mean simply letting athletes think of and choose how to create pressure. Sport psychologists facilitated athletes' involvement in the process. SP2 developed a questionnaire that asked divers to rate the level of pressure they feel in different sport-specific situations, and results suggested what kinds of consequences or demands would increase pressure the most. SP3 would propose ideas for pressure manipulations in a meeting with athletes, who could then consider and alter the ideas if necessary. In team settings, creating the same amount of pressure for every athlete was not possible, so psychologists based pressures on themes from team discussions or allowed the team to agree on the source of pressure. As many athletes as possible would then feel pressure, and frequent PT with various pressure manipulations would allow each athlete to eventually feel pressure.

Knowing and listening to athletes also involved noticing pressure that athletes would already feel in training in addition to the pressure intentionally created for PT. This pressure could come from several sources. Selection commonly raised the importance of training sessions

as teammates competed with each other for spots on a team. The pressure from selection could also increase further at certain times, such as when selection dates were approaching or when performance directors and head coaches watched training. Athletes also felt more pressure as the date of competitions neared. SP1 noted that too much pressure could damage confidence or impede development of mental skills, and psychologists accounted for these existing pressures so that any added consequences or demands would not stress the athletes excessively. The same consequence that was appropriate one day could be too stressful on another occasion, as SP8 observed:

> You might actually go, "God, the level of pressure they're under already, two weeks out from a competition, means actually that we don't need to add too much in." We just need to add a little bit…and actually, at a different time of the year, that little bit might not feel like very much, but right now everyone's up to here in pressure.

Coaches were often key to tailoring PT to athletes appropriately. Coaches contributed expertise on the athletes and the sport, which helped determine the technical or tactical drills to pressurize. SP4 said:

> It's about working with [coaches] and the rest of the team on, "Okay, when do we see some of those examples happening in real life?" and "How can we use the different drills, the different exercises that we might do on the pitch to activate some of those behaviors?". You'll find head coaches, assistant coaches, goalkeeper coaches, they particularly will be highly trained in recognizing, "I've seen that response. I've seen *that* behavior response," so they are incredibly well-equipped and knowledgeable in the kinds of things we can do on the pitch.

PT was not an exercise that was led exclusively by the psychologist. It was integrated into physical or technical training, so coaches were active in the delivery. SP5 worked with coaches to agree to the content and "feeling" of a PT session: "We used to agree a number of principles for the feeling of the session. The session would have to feel competitive. It has to feel serious and have to feel…yeah, it'd have to feel quick-paced." Coaches could also lead debriefs or explain pressure manipulations to athletes. SP3 would pair each para shooter with a coach or staff member who would conduct a debrief with that shooter after PT. Such involvement could keep coaches open-minded about implementing PT, as SP6 explained:

> So I think very early in that that kind of idea-generation stage, if you collaborate from the outset, rather than trying to say, "I've got this thing that we should definitely do," people are a bit more open and bit more curious about it, rather than defensive: "Why are you trying to change my…my practice?"

Promoting learning before and after PT

All psychologists actively helped athletes learn to cope with pressure in PT, and several athletes also discussed this training that accompanied PT. Mental skills training (MST) and debriefs not only taught athletes coping skills for pressure but also signaled that PT was an opportunity to develop, not a punishment. MST involved group workshops or one-on-one sessions that psychologists provided in conjunction with PT. Psychologists often started by teaching athletes about the effects of pressure on performance. A next step was to introduce coping skills that athletes could then practice during PT. SP1 described working with one boxer:

> So we knew under pressure, he tenses and tries to load up and "kill" people, basically. And…in his head, the way he would debrief that is "I'm trying to win" and it's that pressure of "I've got to win." So he'll chase, and it makes him tense and makes him not

> breathe properly…so we did…we coupled it together: so we did a strategy to develop his ability to breathe and relax anyway.

MST was not unique to PT because the psychologists would already teach many of the same mental skills, but PT provided athletes an opportunity to refine these skills under pressure similar to the conditions when they would need the skills in competition. The progression from MST to PT fit into a team or athlete's overall goals:

> It might be, "Well, okay, in a year's time I want them to go deliver at an Olympic Games, why are they falling short when they tried to deliver at World Champs or whatever?" And then…I'll do a skills program and educate first, and then get on the [cycling] track with them and do, like, education not just in the classroom but kind of be giving them opportunities to practice it with me there, and then we'll expose them to however number of these [PT] sessions… –SP8

After PT sessions, debriefs prompted athletes to reflect on their experiences and performance in the session. The psychologist would ask athletes to consider how they responded to pressure, and this reflection increased athletes' self-awareness and clarified skills, behaviors, or thinking patterns that they needed to maintain or improve. SP2 said:

> So I think the education side that I've mentioned a few times, that has been key and that has come up multiple times with athletes in debriefs: of them understanding either why they're feeling pressure because they know their triggers or, at the very least, understand that their brain's changing and what they needed to do to put themselves in a better situation. Or even seeing their first kind of physical signs—so, loss of fine motor control and stuff—so they know if they see that, that based on past experience, they know that they're going down a path that's actually not going to be great.

The format and delivery of debriefs varied. Some debriefs were structured meetings after training sessions, and others were informal chats between the psychologist and athlete. Coaches often joined the debriefs, or a psychologist might train coaches to lead the debrief themselves.

Upfront transparency

Driven primarily by psychologists, this theme describes how upfront transparency about the purpose and content of PT was a prerequisite for psychologists to collaborate well with athletes and coaches. Psychologists explained PT to athletes before expecting them to participate in it. The intent to increase pressure was not meant to be a secret. In fact, some psychologists conducted workshops to educate athletes on pressure, its effects on performance, and reasons for PT. This transparency was especially important for PT because feeling pressure would not necessarily be comfortable for athletes. A4 described times when coaches did not explain why they enforced consequences during training, and "everyone hated it so much" because the coaches "just did it because that was who they were. And that's how they trained people, through pressure and through brutal sessions, really." In contrast, psychologists emphasized to athletes that any discomfort or unpleasantness was intended to help them learn and prepare for competition:

> And people need to understand "the why," so "why are we doing this?". And it's not to harm you. It's not to make you look silly or to force you to make mistakes. It's "actually, we have a responsibility to you to prepare you for potentially extremely stressful situations." –SP6

Psychologists did have slight variations in how they used PT. Some used PT to train a specific technical skill that coaches wanted to see from the athlete whereas others pressurized training to let athletes practice coping with pressure in general. Whatever the exact goal of the

PT session was, psychologists communicated it to athletes before starting. For SP7, clarifying the goal helped ensure athletes benefited as intended. For example, training the physical execution of a skill under pressure was distinct from training the decision making of that skill under pressure.

Although psychologists often introduced the idea of PT during workshops or conversations, SP1 had each athlete read and sign written "contracts" that explained the intervention. A contract helped ensure that the athlete understood the purpose of PT, and it also allowed coaches and the psychologist to individualize PT for each of their athletes. Each individual could have his or her own consequences, procedure for debriefs, and tactics to work on, and the contract communicated those components to him or her. Psychologists also supported "re-contracting" regularly. They understood that needs of the athlete and circumstances will change over time, so it was necessary not to assume athletes would always be receptive to PT just because they agreed once.

Integration into training

Some psychologists and some athletes suggested that for PT to be effective and sustainable over time, it needed to be integrated into athletes' training regimens. Some psychologists initially conducted PT as structured and novel events that required much planning and preparation to develop and implement pressure manipulations. Although transparency about PT's purpose was important, excessively drawing attention to the added pressure could deter some athletes. A1 eventually recognized the value of PT, but he did not initially:

> I hated it at first. I used to just be like, "This is just nonsense" because it was like this whole thing: "Whoo, this afternoon's pressure training, boys. Remember." Going into the hall, they try and make a different feel. You open the door and everybody looks at you, like, "Ooh, you know what's going on here today."

Psychologists moved away from singular events and instead included PT as a regular part of training. SP2 described her approach as "little and often" because she would incorporate PT more routinely into training in the form of smaller-scale exercises. SP5 similarly embedded PT into training by adding pressure to warm-up drills or the last exercise of a training session. Big events could, however, lead to such integration because they showed coaches how to create pressure. SP5 said, "by doing a couple of really big ones, the coaches then got a grip of it and they just included it on a more…frequent basis in a less-structured way." For A5 and A7, coaches already added pressure to their practice competitions without the assistance of a psychologist. As A7 described it, "I kind of always did it from a young age, so at this point I don't know any different." That coaches independently integrated pressure into training further demonstrates that PT can be a natural extension of preparation for competition. SP8 recognized that some coaches already pressurize training well, so he would not need to intervene: "Sometimes it's okay to go, 'I don't need to do anything there.'"

Integration was also reflected in the language used (or not used) to talk about PT. To prevent preconceived notions from interfering with PT, SP6 and SP8 both avoided labeling any exercise or drill as "pressure training." According to SP8, overusing the word "pressure" in a training environment could cause some athletes to "switch off." Although levels of pressure can vary, psychologists said that athletes often associated the term "pressure" with only the highest levels of pressure. SP8 explained, "Some of them will go, 'Aww, you can't replicate what's going to happen in an Olympic Games, in a World Champs.'" Overemphasizing pressure could prompt athletes to look for or expect pressure, so SP8 advocated directing athletes' attention to relevant mental skills instead. Psychologists could still teach the skills (e.g., in a workshop) but do so without making practicing them appear to be a novel exercise. SP8 said, "I've never sold it

as ‘pressure training.’ I’ve always tried to sell it as ‘We’re going to learn a bunch of skills first…and then we’re going to expose you to situations where you get a chance to practice that.’”

Some psychologists did still distinguish PT from other training sessions, but they did so by mirroring the flow of competition. Building up to PT throughout the day could enhance pressure by signaling to athletes that their performance in training would be scrutinized more than usual:

> so we try and make it a little bit more like a bout where you’d be prepping to go in and box someone specific rather than whenever they…might be sparring somebody, they might know 10 minutes before: “Oh, I’m sparring him today but it’s fine.” So we try and create a little bit more of, “This is your opponent, these are your tactics, this is what you need to do”…We get them to properly warm up and make sure they’re as it would be in a bout. –SP1

Despite wanting PT to “feel different” from other training, SP1 did not force the perception of pressure. The physical and tactical preparation implied the importance of the session, which contrasted the explicit reminders about pressure that A1 described experiencing in his first PT. Despite differences in their approaches, psychologists seemed to agree on normalizing PT as a part of athletes’ preparation. This psychological component of athletes’ training did not have to be framed as separate. As SP6 explained, PT was “just training.”

Discussion

This study explored perspectives of sport psychologists and athletes on the characteristics of effective PT delivery in applied settings. Thematic analysis highlighted four themes that described effective delivery: a) Collaboration with athletes and coaches: “with,” not “to”, b) Promoting learning before and after PT, c) Upfront transparency, and d) Integration into training.

The findings echoed existing guidelines for PT. For instance, the theme of collaboration supports Fletcher and Arnold's (2021) guidance that listening to input from athletes can increase their buy-in for PT. However, the current study's qualitative nature expanded on how practitioners can apply such ideas in competitive sport environments. Each theme included concrete steps that contributed to developing and conducting PT. Just as importantly, these steps also could increase coaches and athletes' engagement with PT and, therefore, increase their benefit from the intervention.

Collaboration with athletes and coaches helped psychologists to identify pressure manipulations that would successfully create pressure. PT should be tailored as much as possible to each context (Fletcher & Arnold, 2021), and discussing pressure manipulations with athletes allowed psychologists to learn which demands and consequences would be meaningful and relevant to those athletes. Coaches could also generate and vet ideas for creating pressure. Whereas input from athletes depends on their self-awareness, coaches might add another perspective from having seen how and when their athletes feel pressure.

Even if a practitioner could independently develop pressure manipulations, collaboration remained important for keeping athletes and coaches receptive to PT. For athletes, collaboration could reduce a power imbalance that inherently exists between practitioner and athlete (Sharp et al., 2015; Tod et al., 2019). PT especially might deepen this imbalance if practitioners appear to force demands and consequences on athletes (Kegelaers et al., 2020), but collaboration seems to balance the practitioner-athlete dynamic going into PT. Asking athletes for their input could provide them with autonomy to influence the training, and autonomy helps individuals see a task's relevance to their goals and, in turn, value doing that task (Ryan & Deci, 2000). The resulting commitment is illustrated in the way SP1 described her athlete's motivation to avoid a

consequence of singing in front of others: "She was like 'I am *not* doing that. That's horrendous.' But she came up with it, and she's like, 'I'm going to do everything in my power not to do that.'"

Collaboration gained coaches' support for PT too. Because PT generally took place during training sessions, it could appear to encroach on a coach's territory. Yet psychologists did not feel that they had to lead PT entirely on their own. SP3 had coaches and staff lead debriefs, and coaches have also contributed to PT in intervention studies. In van Rens et al.'s (2021) study, coaches designed sport-specific drills and performance standards that players would have to reach in PT. As SP6 noted, including coaches in the process could encourage them to be "a bit more open and bit more curious about [PT], rather than defensive." This involvement could then impact the culture or environment surrounding PT. For example, in Bell et al.'s (2013) study, the researchers worked with coaches to take a transformational approach to leadership, and coach buy-in could promote other "ingredients" of successful interventions, such as athlete engagement (Tod et al., 2019).

For the theme of promoting learning, the most direct benefit may be the development of coping skills that athletes can then apply during PT. Kent et al. (2021) have found partial support to suggest that PT accompanied by MST improves performance better than PT alone. After pressurized drills, psychologists in the current study continued the learning process by leading debriefs that prompted athletes to reflect on their responses to pressure during the training session. Reflection is a skill that practitioners may need to help athletes develop (Neil et al., 2013), so debriefs could be an important element of PT to maximize learning.

Promoting learning might also develop the facilitative environment that Fletcher and Sarkar (2016) recommend should accompany PT. While pressure manipulations create challenge for athletes, conducting workshops and debriefs may communicate to athletes that a coaching

staff is supporting them to overcome that challenge. Just as collaboration promotes autonomy, MST could increase athletes' sense of competence, which is another psychological need that increases internal motivation for a task (Ryan & Deci, 2000). If athletes feel they have been equipped with skills to cope with pressure, then they may be more willing to experience that pressure.

Like collaboration and promoting learning, the theme of upfront transparency also had multiple dimensions. In some cases, psychologists might need to explain the nuances of PT that targets specific aspects of performance under pressure, such as decision making or a technical skill that tends to decline under pressure. Communicating these targets enables athletes to match their focus and behavior to the psychologist or coach's intent for the drill. More generally, upfront transparency clarified that PT was intended to help, not harm, athletes. Although that purpose may seem obvious to a practitioner or coach delivering PT, it may not be so obvious to athletes (Kegelaers et al., 2020). Some participants in the current study suggested that athletes might conflate PT with previous experiences of disciplinary punishments or be accustomed to sport psychology support taking place in "classroom" settings. Transparency could be verbal explanations or take the form of a written "contract" that outlined what PT would involve. Such measures were another way to proactively address any misperceptions of PT.

After psychologists' explained PT to athletes, the intervention's integration into physical training further demonstrated that PT was an extension of, rather than a departure from, existing preparation for competition. PT did not have to be large-scale events that were separate from physical training, and integration into training meant less novelty for athletes to grow accustomed to. Compared to conducting PT as a separate event, pressurizing a drill did not disrupt an athletes' typical routine if the athletes already would do that drill in training. During

that training, psychologists did not need to overemphasize the presence of added pressure. Terms such as "pressure training" are useful in research for providing a common and concise language to refer to the intervention, but psychologists do not necessarily need to label PT in applied practice. As SP6 said, PT was "just training."

Taken together, this study's findings can advance the trend in the literature toward more holistic PT interventions. Early studies focused on the effect of pressure in controlled experimental conditions (e.g., Oudejans & Pijpers, 2010), but recent studies have incorporated elements such as workshops and debriefs that supplement pressurized drills and better represent how practitioners may conduct PT in applied practice (e.g., Kegelaers et al., 2021; van Rens et al., 2021). Still, research has largely remained "practitioner-evacuated" (Ivarsson & Andersen, 2016). The current study highlighted processes and principles that practitioners can implement and that future studies can evaluate to assess the practitioner's influence on PT's effectiveness.

Applied Implications

Practitioners can increase athletes' engagement with and learning from PT by ensuring that their delivery incorporates the themes found in this study. There are several steps that practitioners can take to do so. One is to help coaches develop skills for leading PT sessions. Skills could include explaining rationale for PT, implementing pressure manipulations, and conducting debriefs. For instance, practitioners can teach debriefing skills by identifying behaviors to observe during PT and demonstrating questions that prompt athletes to reflect during debriefs. A hands-on role in PT may help coaches buy into PT and fully understand the nuances of delivery. Kegelaers et al. (2020) have similarly argued that debriefs led by a coach are important to help athletes understand and reflect on their responses to pressure. In addition, coaches with these skills can continue PT if practitioners are not always present at each training

session. The ability to continue PT is valuable because a second implication is that practitioners should encourage consistent and systematic use of PT. The theme of integration does not mean doing PT once during training or only when practitioners suggest it. Coaches should strive to integrate PT into their training cycle rather than use it on isolated occasions.

Practitioners can normalize sport psychology within training sessions. Because PT requires athletes to simultaneously practice physical and mental skills, it shows that sport psychology does not need to be confined to classrooms or individual consulting sessions. Practitioners can prime athletes to be receptive to PT by regularly providing guidance and support to athletes during training sessions. If practitioners are already present at training to advise coaches and follow up on mental skills taught previously, athletes may more readily accept the practitioner making one more addition to training (i.e., pressure).

Future Directions and Limitations

This study was the first to present perspectives of sport psychologists and athletes on delivery of PT at the international level of sport, but it did have limitations that future research can address. One limitation is that this study did not reflect the impact of each aspect of delivery (e.g., collaboration, upfront transparency) relative to other potential aspects. Empirically testing each aspect of delivery could be unethical if it requires withholding them from a control group, but future qualitative research can add more perspectives to the ones discussed in the current study. Triangulating findings from different studies may uncover patterns that strengthen evidence for including a certain finding into PT delivery. Furthermore, although several of the current findings center around avoiding negative misperceptions of PT, additional considerations could serve to enhance the training benefits of planned disruptions even when athletes already understand PT's intent (Kegelaers et al., 2020). Examples included periodization and surprise

timing of disruptions (Kegelaers et al., 2020). The strategic use of timing and other aspects of delivery could be important when the nature of a pressure manipulation itself may be restricted by material resources or ethical concerns.

The absence of coaches from the sample is one reason that the study's findings were not the only keys to effective delivery. The theme of integration into training suggested that coaches can and should participate in the delivery of PT. In fact, two athletes in the current study referred to PT that was led by coaches without the help of a sport psychologist, so the absence of coaches' perspectives is a reminder that the findings are only some of the characteristics of effective delivery. Therefore, future research should interview coaches who intentionally pressurize training to prepare athletes for pressure. Coaches may have different approaches to leading pressurizing training compared to sport psychologists. They may also contribute a valuable third-party perspective on how sport psychologists can work best with athletes to deliver PT.

Another limitation was the purposeful sampling of participants who had extensive experience with PT. These individuals were more likely to view PT favorably, and the risk of this bias increased because several athletes were recruited via recommendations of participating psychologists. Although many participants did discuss lessons from mistakes that they or their psychologists had made previously, researchers still have more to learn from individuals with less favorable views of PT. It may be equally valuable to understand what steps limit the effectiveness of PT or athletes' receptiveness to the intervention, but participants with positive experiences of PT may not be aware of such pitfalls or feel comfortable discussing them. Studies can instead interview sport psychologists and athletes who acknowledge that they feel PT has been ineffective. Wide cross-sections of a team can also be interviewed after a PT intervention.

In recent research with post-intervention focus groups, not all participants found PT helpful (e.g., Kent et al., 2021). Future intervention studies can continue such focus groups and specifically examine aspects of delivery that may have influenced negative or indifferent reactions to PT.

Finally, this study's sample consisted of elite athletes and sport psychologists who worked with elite athletes, so findings may not generalize to athletes at lower levels of sport. Research has found that youth and adolescent athletes may feel pressure to perform (Dunn et al., 2022; Harwood & Knight, 2009), and Kent et al.'s (2021) study at a soccer academy found preliminary evidence that PT can benefit youth and adolescent athletes across several age groups. More research is therefore needed to support practitioners and coaches in delivering PT at these levels of competition. Because the current study's sample of athletes also came primarily from individual sports, future studies can explore any differences when delivering PT with team sports.

Conclusion

Practitioners have already espoused the importance of delivery in applied practice (Tod et al., 2019), so it makes sense for research on a specific intervention to examine delivery in addition to content. The current study provided such balance to the literature on PT by giving attention to delivery. According to both psychologists and athletes, psychologists increased the effectiveness of PT through: a) Collaboration with athletes and coaches, b) Promoting learning before and after PT, c) Upfront transparency, and d) Integration into training. Each theme included direct benefits to the design of PT and athletes' experience of PT. For example, collaboration led to selecting pressure manipulations, and integration fit PT into training schedules. In addition, each theme may contribute equally as much to the environment surrounding the intervention. PT that embodied these themes generated buy-in from athletes and

585 coaches, and it distinguished PT as a form of training rather than punishment. To include these
586 themes in applied practice, a practitioner can work closely with coaches to ensure they
587 understand their roles in PT and the role that delivery plays in the intervention's outcome.

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