strategies were brief interventions provided to a performer before competing in a pressurized, single-trial, motor task. Finally, simulation tasks involved practice of the performance task/skill in an environment replicating the pressure-conditioned stimuli an individual would experience (Jones and Hardy, 1990).

Data quality

The possible range of scores on quality assessment was 0–2, with a higher score indicating better quality (Kmet et al., 2004). The mean scores and standard deviation (SD) for the 20 criterion of study quality are presented in Table 2. Across included studies, the mean score for quality was 1.41 (SD = 0.23), with scores ranging from 0.94 (SD = 0.82; Meyers and Schleser, 1980) to 1.83 (SD = 0.39; Hunziker et al., 2013). Nine studies scored more than one standard deviation below the sample mean (Abbott et. al., 2009; Beauchamp et al., 2012; Crocker et. al., 1988; Griffiths et. al., 1985; Mesagno et al., 2008; 2009; Meyers and Schleser, 1980; Moore et. al., 2015; Wetzel et al., 2011). These studies were included within the review as they contribute towards a useful critique of existing pressure intervention literature, however their findings should be interpreted with caution.

Overall, studies performed well on reporting the objective of the research process, with the research design being easily identifiable and appropriate to address the study question. Studies also used a variety of statistical procedures to help establish credibility/trustworthiness of the data. However, studies underperformed on attempting to control, or consider the control of potentially confounding variables, and also on use of inadequate sample sizes.

Discussion

Pressure manipulation

Pressure was manipulated via laboratory experiments (*n* = 9), natural experiments (*n* = 9), and field experiments (*n* = 5). Laboratory experiments created an artificial environment enabling high levels of control and manipulation of pressure variables, thus establishing scenarios that would otherwise be difficult to replicate, such as critical surgical operations (Wetzel et al., 2011) or cardiopulmonary resuscitation (Hunziker et al., 2013).

Natural experiments measured the effectiveness of interventions on an individual's ability to cope using naturally occurring pressure variables found within the environment. There was no attempt to manipulate pressure, or include additional pressure variables. For example, Keogh et. al. (2006, p. 340) used GCSE (General Certificate of Secondary Education) examinations due to 'the high importance of these results for employment known to cause mental strain and worry.'

Field experiments attempted to simulate a common performance climate, but also incorporate artificial pressure variables. Artificial pressure variables were additional factors included within the 'B' condition of laboratory experiments and field experiments. These included; financial reward for successful performance (*n* = 5), the publishing of results (*n* = 4), filming the performance task (*n* = 4), performing in the presence of an audience or crowd noise (*n* = 5), random task order whereby participants did not know when they were performing a task (*n* = 1), non-contingent feedback (*n* = 1), punishment-conditioned stimuli (*n* = 1) and only one opportunity to perform the task (*n* = 1).

With regards to pressure manipulation, it is important to ensure that a performance task recreates the characteristics of pressure, such as a meaningful task, incentives for good performance, under constraints such as time, or a single performance opportunity. For example, the use of GCSE examinations as a pressure task (Keogh et al., 2006) could be argued to facilitate results high in ecological validity, however, pressure has a 'subjective component' and only deemed pressure if an individual is aware of the incentives for optimal performance, but also values them (Baumeister and Showers, 1986, p. 373). For example, getting a good grade in an exam may not be an incentive where someone has a job to walk into. According to drive theories (Blascovich, 2008), should a performance situation not generate appraisals of demand or importance, there will not be a pressure response. As some people sit exams with no expectation of passing, or lack desired outcomes for passing, this presents a questionable pressure task for these individuals as they may not perceive pressure. However, it is important to consider the 'successful' use of cognitive reappraisal and how the individual may re-frame the relevance of situation as a function of their 'successful' self-regulation. In this instance it would be advisable to include individuals who require a set grade, and deem this target to be challenging but attainable in order to achieve something worthwhile (e.g., a University place) and does in fact create pressure pre-intervention by piloting the task. This recommended practice was evident in Balk (2013, p. 413) who incorporated a pilot study to ensure that the pressure task (golf putting) successfully induced a 'classic choking under pressure effect' (subjective arousal, objective arousal, and decline in performance).

To establish that conditions are attained in research settings whereby an individual is performing under pressure, the pressure task should be contextualised. Key personnel from the context where the study is being conducted should inform pressure task development to ensure it attains task meaningfulness, goal valence, and task importance (Baumeister et al., 2007). We argue that the validation of a task in controlled conditions that exposes participants to meaningful pressure, should be the first stage of research seeking to examine the effects of pressure on performance. Such pressure manipulation data provides a means of establishing if the performance task was meaningful enough to evoke coping efforts.

Where all known characteristics of pressure are included within the performance setting, should participants report experiencing negligible pressure, this does not necessarily indicate an absence of pressure in the experimental condition. Drive theories contend that the demand/resource evaluation process is more unconscious and automatic than conscious and deliberate (Richter et. al., 2016). Therefore, in line with the contention of drive

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theories (e.g., social facilitation theory; Zajonc, 1965), individuals who have the resources and efficacy to effectively cope with pressure conditions would not perceive/report felt pressure (Blascovich et al., 2000; Seery, 2011). This is not a research failing, as the focus of pressure interventions is to help individuals cope with pressure, via an efficacious use of coping strategies such as reappraisal and resource accumulation (Taylor and Morgan, 2014). However, an alternative explanation for a reported absence of perceived pressure is that the measures used to ascertain perceived pressure may be inadequate to detect subtle changes as discussed below.

Pressure manipulation evaluation

When developing pressure interventions, evaluations of pressure are necessary to help determine if the chosen performance task(s) can help validate intervention effectiveness, and also evaluate the efficacy of interventions. Three studies included a pressure manipulation check to assess participants' subjective experience of pressure. Balk et al. (2013) administered the 7-item 'pressure/ tension' subscale of the Intrinsic Motivation Inventory (obtained by administering questionnaires right before putting in the low- and high-pressure phases) (IMI; Deci and Ryan, 1994). Beauchamp et al. (2012) administered (but did not report data from or reveal when self-report was administered) the Test of Attentional and Interpersonal Style (TAIS) using the 'drive and confidence over time' subscale to establish an individual's ability to perform under pressure. A single-item from the Finnish Athletic Coping Skills Inventory-28 (Liukkonen and Jaakkola, 2003) was utilised by Bjorkstrand and Jern (2013) to assess pressure: 'How nervous were you during the penalty shoot-out?'(recorded only in the pre-intervention condition).

Three studies (Mesagno et al., 2008, 2009; Olusoga et al., 2014) undertook interviews asking participants to self-report the degree of pressure experienced during the focal task. In both Mesagno et al. (2008, 2009) studies participants were screened for their susceptibility to 'choke' under pressure before A-B-A-B experimentation began. Interviews explored the participants perceptions of the intervention and captured detailed accounts of resultant perceptions. Mesagno et al. (2008) was the only paper to exclude participants from further study as they did not experience choking in the 'first pressure' phase. Using self -report methods, Mesagno et al. (2008; 2009) determined whether a psychological intervention would alleviate the likelihood of choking, thus, the researchers perceived it was necessary to purposively recruit choking-susceptible participants (Mesagno et al., 2008; 2009). However, such self-report measures only provide a measure of conscious pressure, as the demand/resource evaluation process is relatively unconscious and automatic, individuals may subconsciously activate coping strategies to manage pressure, and thus not consciously perceive or report these pressure evaluations (Seery, 2011). For such individuals, their self-reported perceptions of pressure may not truly reflect the pressure characteristics of a task. In addressing these limitations, retrospective evaluations of pressure interventions that encourage participants to reflect on pressure and coping may provide an opportunity for researchers to tap into the non-conscious and habitual methods people have for evaluating and coping with pressure. Furthermore, task valence and importance of goal achievement would be appropriate measures to help validate if a task may enhance the perception of pressure (Baumeister et al., 2007; Lane et al., 2016; Lazarus, 1999).

Seventeen studies did not specifically measure the perception of pressure, instead measuring variables argued to be indicative of pressure. Seven studies included psy-chophysiological measure including; heart rate (n = 6), respiration rate (n = 2), cardiac output (n = 1), cortisol (n = 1), gaze control (n = 1), haemoglobin and oxygen saturation (n = 1), muscle activity (n = 1), skin temperature (n = 1) and total peripheral resistance (n = 1).

Seven studies administered stress Likert scales with five studies administering a bespoke single-item stress Likert following a pressurised task asking, 'How stressed did you feel?'. This highlights interesting findings about how authors may blur the concepts between stress and pressure. Two studies used validated scales namely; Depression Anxiety and Stress Scales (DASS21; Lovibond and Lovibond, 1995), Recovery-Stress Questionnaire (RESTQ-Sport; Kellmann and Kallus, 2001). Fourteen studies measured anxiety using validated psychometric scales, typically the Competitive State Anxiety Inventory- 2 (CSAI-2) (Martens et al., 1990; n = 5), the most commonly used measure of anxiety in sport. The cognitive anxiety scale on CSAI-2 has been questioned as a measure of anxiety, with researchers suggesting phrasing anxiety around the term concern assessed task importance rather than anxiety (Lane et. al., 1999). As such, use of the revised version is recommended (Cox et al., 2003). Two of the stress scales (Hunziker et al., 2013; McClernon et al., 2011) and one of the anxiety scales (Wetzel et al., 2011) were completed post-intervention only and intended to test the effects of the pressure task. All other stress and anxiety measures were completed pre- and post-intervention in order to test the effects of an intervention.

A limitation of interpreting high anxiety scores, or psychophysiological measures of high anxiety as indicative of pressure, is that some individuals interpret high anxiety as signal of being ready to perform, and so they will make themselves feel more anxious as part of mental preparation (Hanton et al., 2004; Hanin, 2000; Lane et. al., 2016). As highlighted by the Individual Zone of pptimal Functioning (IZOF; Hanin, 2000) and Survival, Evasion, Resistance, and Extraction (SERE; Wagstaff and Leach, 2015) perspectives, the experience of anxiety and associated physiological responses, can be task facilitative or debilitative. This is dependent on the individual's perception of anxiety, or use of the resultant energy mobilization for different performance tasks. For example, a surgeon experiencing high levels of anxiety is more likely to experience deleterious performance effects due to associated outcomes such as feeling shaky and clumsy (Wetzel et al., 2006). In contrast, a rugby player experiencing high anxiety may benefit from associated increases in cardiac output, effort, masked fatigue and maintained alertness (Robazza and Bortoli, 2007). Intensity and interpretations of anxiety (somatic and cognitive) have also been related to confidence. Specifically, Hanton et al. (2004) reported that under conditions of high self-confidence, increases in anxiety symptoms were reported to lead to positive perceptions of control and of benefit to sports performance.

Ten studies included measures of confidence, including self-confidence scales taken from the Ottawa Mental Skills Assessment Test (OMSAT-3; Durand-Bush et al., 2001) (*n = 1*), Test of Attentional and Interpersonal Style (TAIS; Nideffer, 1976)(*n = 1*), Mental Skills Questionnaire (MSQ; Bull et al., 1996) (*n = 1*) and the CSAI-2 (Martens et al., 1990) (*n* = 4). Alternatively, the Academic Self-Efficacy Scale (Midgley et al., 2000) or bespoke measures of confidence (e.g., 'how many penalties do you believe you could successfully convert?' Bjorkstrand and Jern, 2013) were used. Beauchamp et al. (2012) did not report confidence results for the TAIS (Nideffer, 1976) and CSAI-2 (Martens et al., 1990). However, four studies identified a post-intervention increase in self-confidence (Breso et al., 2011; Olusoga et al., 2014; Page et al., 2015; Prapavessis et al., 1992; Wood and Wilson, 2012).

It is important to consider the use and type of a control group when planning pressure manipulation evaluations. A control group is argued to help support researchers to contrast performances under pressure of those receiving interventions and those who are not and establish causation (control condition). However, within (*n =6*) studies 'control' groups included general instructional/ educational training (*n = 5)* or intervention at physical support for the pressure task (*n* = 1). The instructional training or physical support may provide participants with enhanced confidence or control of performing a pressure task and therefore undermine the validity of the comparison between the psychological intervention proposed and the control condition. A concern regarding research for performance under pressure is that it is difficult to control for desensitization to pressure as a confounding variable when collecting baseline data (e.g., via practice or familiarization; Wood and Wilson, 2012). Therefore, the simple repeated exposure to a pressure situation might serve as a coping intervention, if the type of situation and/ or pressure is new to the participant. Counterbalancing is one method used to control for such effects. For example, Bjorkstrand and Jern (2013) recruited participants of a similar demographic to both control and experimental conditions (female football players of a similar age and skill level) allowing differences in performance to be attributed to intervention with greater confidence. However, as noted by Page et al. (2015), such comparison with the control group can be compromised if participants are not screened for confounding variables. In their study, they noted that law enforcement academy cadets may have already been exposed to techniques used in the intervention provided, and this was argued to have diminished group differences. Therefore, it is important to consider the significant differences found in the studies when assessing the validity of the control groups.

Four of the fourteen A-B studies did not incorporate a control group (Beauchamp et al., 2012; Meyers and Schleser, 1980; Olusoga et al., 2014; Prapavessis ET AL., 1992), and explained that this was due to either financial, temporal, or practical constraints (e.g., case study methodology). All seven A-B-A studies included a control group. Both A-B-A-B interventions did not present a control group because of the difficulty in recruiting participants who met the inclusion criteria for the study (Mesagno et al., 2008; 2009). The absence of a control group from study design necessitates caution in interpreting the outcomes of pressure-interventions. This becomes particularly pertinent when participants are aware of the project aims, and may respond differently to measures indicative of pressure. However, the benefits of an A-B-A-B design are that it allows researchers to observe what happens when a treatment is removed, and also what happens when the treatment is introduced a second time.

Effects of coping interventions on performing under pressure

Cognitive-behavioral workshops: The most commonly used intervention, found in eight of the included studies (5 = A-B, 2 = A-B-A, 1 = A-B-A-B), comprised of Cognitive-Behavioral Workshops (CBW). CBW interventions using an A-B design included activities such as developing strategies for acceptance and gaining control (*n* = 2), understanding emotion-performance relationships (*n* = 2), developing problem-focused coping strategies (*n* = 2), confidence - reducing false or self-defeating beliefs (*n* = 2), and enhancing gaze/attentional control (*n* = 1). CBW interventions were delivered by a researcher (*n* = 3), tape (*n* = 1) or video (*n* = 1). Interventions ranged from a single 10-minute educational workshop (Hunziker et al., 2013) to an eight-week coping skills programme (Crocker et al., 1988).

Three A-B CBW studies evidenced significant performance improvements from A to B conditions following intervention, whilst two did not. Two studies measured confidence and found that individuals reporting higher levels of confidence performed better than individuals reporting lower levels of confidence (Bjorkstrand and Jern, 2013; Page et. al. 2015). Four studies measured state anxiety using the CSAI-2 (Martens et al., 1990), of these three indicated that interventions intended to reduce the intensity of anxiety symptoms did not influence performance under pressure (Abbott et al., 2009 Crocker et al., 1988; Griffiths et al., 1985). However, as previously noted, reducing anxiety may not necessarily offer performance benefits to participants (Hanton et al., 2004; Robazza and Bortoli, 2007).

Two CBW interventions used an A-B-A design that aimed to educate individuals on cognitive flexibility strategies (Kimura et al., 2015), or control visual attention and beliefs (Wood and Wilson, 2012). In the case of both studies, whilst improvements in performance were found, these were not statistically significant when comparing to those of the control groups. It would be important to identify that the procedures used for control groups expose participants to repeating the pressure task. For example, Wood and Wilson (2012) identified that the intervention and control group both identified a significant increase in perceptions of control and competence. Arguably, the first pressure testing condition may act as an intervention due to a perceived increase in confidence and expectations for perceived chances of success when repeating the pressure test. Mesagno et al. (2009) stated it is virtually impossible to control for pressure desensitization, therefore researchers should take into account significant statistical differences between intervention conditions and control conditions, or the use of qualitative feedback when assessing performance under pressure. Finally, Mesagno et al. (2008) used an A-B-A-B design to deliver a CBW workshop focussed on pre-performance routines. This intervention aimed to educate individuals on optimal arousal levels, attentional control, and cue words. The experimental design enabled the participants to use their developed performance routine (A) in a pressurized task (B), to be educated on how to refine this skill (A), to then perform again under pressure (B). This intervention was found to significantly improve performance under pressure. However, with no comparisons to a control group it is challenging to establish if the pressure context might have naturally improved participants' perception of pressure and performance or the intervention.

Four of the eight CBW studies identified a significant difference in either perceived (Kimura et al., 2015) or objective (Crocker et al., 1988; Mesagno et al., 2008; Page et al., 2015) performance post intervention. In line with distraction theories (e.g., attentional control theory - ACT; Eysenck et al., 2007) whilst feeling nervous or anxious may produce distracting thoughts and worries (Eysenck and Calvo, 1992), among performers who possess confidence in their ability to control both themselves and the environment, they are more likely to report facilitative interpretations of anxiety (Jones, 1995). Such feelings can prompt compensatory coping efforts that draw upon additional processing resources (e.g., increased effort) or strategies (e.g., seeking social support) that may maintain performance quality, motivation, and effectiveness (Eysenck et al., 2007; Eysenck and Calvo, 1992; Wilson, 2008).

Psychology consultancy sessions: Psychology consultancy sessions were offered as the intervention in six studies (3 = A-B, 3 = A-B-A). A structured cognitive mental skills programme delivered by psychologist (n = 4) or therapist (n = 2) was provided during consultancy sessions. Largely, interventions were developed to aid performance under pressure within sport contexts (n = 4), and delivered on a one-to-one basis (n = 4). Two studies delivered mental skills consultancy sessions as a group consultancy intervention package (n = 2). Intervention duration ranged from seven sessions over three-weeks (Meyers and Schlesser, 1980) to 12 sessions over six-weeks (Prapavessis et al., 1992).

A-B interventions focused on teaching relaxation techniques (n = 3), imagery (n = 3), confidence (n = 3), thought-stopping (n = 2), challenging irrational thoughts (n = 2) and developing performance routines (n = 2). The two A-B consultancy sessions delivered to participants on an individual basis both produced significant performance improvements following pressure intervention (Meyers and Schleser, 1980; Prapavessis et. al., 1992). The group A-B consultancy intervention found soccer coaches to perceive an increased ability to coach effectively under pressure post intervention (Olusoga et al., 2014). However, without a control group, it is difficult to say that results were solely due to the efficacy of the mental skills programme or coaches may have developed their psychological skills naturally through the process of engaging with their teams, athletes, and colleagues over the time of the intervention.

A-B-A consultancy interventions were structured around a variety of cognitive- behavioral strategies namely; anxiety reappraisal (n = 3), problem-focused coping (n = 2), self-talk (n = 2), re-framing techniques (n = 2), attentional focus (n = 1) and confidence (n = 1). Intervention delivery ranged from once-a-week for ten-weeks (Keogh et al., 2006) to 16 sessions for eight-months (Kerr and Leith, 1993). All three A-B-A interventions identified a significantly improved ability to perform under pressure following intervention.

Of the six consultancy based interventions, three (Breso et al., 2011; Olosuga et al.,2014; Prapavessis et al., 1992) demonstrated post intervention increases in confidence that participants perceived as important in supporting their performance under pressure. Olusoga et al. (2014) and Prapavessis et al. (1992) also reported a significant reduction in symptoms of anxiety and stress. Confidence is a central to the appraisal of pressure, and contributes to the cognitive and somatic response patterns that are either facilitative or debilitative to performance (Blascovich et al., 2003). These findings suggest that the development and implementation of interventions that manage factors argued to disrupt performance (e.g., debilitative anxiety, low confidence) enable individuals to perform at their best (Lazarus, 2000).

Simulation interventions: Five studies (A-B = 3, A-B-A = 2) provided simulation interventions to replicate as closely as possible the experiences of a pressurized task. Three A-B simulation interventions (Beauchamp et al., 2012; Bell et al., 2013; McClernon et al., 2011) incorporated consultancy sessions alongside pressure training delivered by a psychologist. A-B interventions (n = 3) ranged from a ten-minute flight simulation session (McClearnon et al., 2011) to a seven-phase multifaceted intervention conducted over three-years (Beauchamp et al., 2012). The interventions provided participants with educational support on relaxation skills (n = 2), attention strategies (n = 1), and individual coping strategies (n = 1). Participants were asked to apply these skills during simulation. McClernon et al. (2011) delivered interventions on a one-to-one basis, whilst Beauchamp et al. (2012) and Bell et al. (2013) delivered interventions to teams working alongside key individuals that may influence the training environment and effectiveness of the intervention. Both McClernon et al. (2011) and Bell et al. (2013) identified a significant improvement in performance following intervention. Beauchamp et al. (2012) did not present specific performance results, but concluded that the intervention was successful as athletes achieved their performance goals as set by their national governing body.

A-B-A simulation studies (n = 2) included a one-day simulated surgical crisis intervention (Wetzel et al.,

2011) and a six-week computerized decision making-accuracy programme (Lorains et al., 2013). Both interventions concluded that simulation had significant beneficial effects for improving the speed and effectiveness of decision making under pressure in comparison to the control group. Surgeons within the Wetzel et al. (2011) study also noted that the stress management strategies provided helped them control physiological responses perceived as influencing performance under pressure.

All five simulation interventions enhanced performance under pressure, with three simulation studies including control groups. Whilst simulation interventions incorporated educational support (e.g., Bell et al., 2013; workshops focused on mental preparation principles) the emphasis was on individuals developing, refining, and building a repertoire of coping strategies via application under conditions which simulated the pressurized task (Bouchard et al., 2010). In reviewing the interventions provided, simulation training consistently provided a means of effectively transferring mental skills to the pressure task. However, only Wetzel et al. (2011) included a (bespoke) perceived 'realism' scale to assess the ecological validity of the simulation, and none of the simulation studies evaluated the impact of the intervention on real pressure performance data. Simulation intervention research would benefit from investigating individuals' perceptions of the transferability of coping strategies developed during simulation, to the real pressurized scenarios.

Emotion regulation interventions: Emotion regulation interventions (A-B = 2, A-B-A-B = 1) instructed participants to engage in a distraction (n = 2) and/or a reappraisal (n = 2) strategy. Interventions were brief 'one-off' interventions intended to aid the performance of a golf putting task (Balk et al., 2013; Moore et al., 2015) or a basketball shooting task (Mesagno et al., 2009). Using an A-B design, Balk et al. (2013) intervention comprised of two self-administered (reading and following the implementation) reappraisal strategies, and one distraction strategy. The reappraisal strategy focused on reinterpreting 'pressure' in a way that is facilitative. This type of strategy was explicitly underpinned by distraction theories that suggest debilitative thoughts and worries impair performance (e.g., process efficiency theory; PET; Eysenck and Calvo, 1992). Consequently, the intervention instructed participants to think about the positive aspects of what they were experiencing to alter its potential impact upon performance. The distraction strategy required the participant to engage in another neutral thought or taking thoughts or memories in mind that were unrelated to the pressurized task. Moore et al. (2015) provided an A-B intervention arousal reappraisal intended to help participants view pressure-induced emotions as a resource that could aid performance. Reappraisal instructions took '60 seconds to deliver', which would suggest this was researcher-led. The A-B-A-B intervention delivered by a researcher in Mesagno et al. (2009) study was also intended to distract participants from symptoms of somatic anxiety through engaging in a distraction strategy during the pressurised task. There were no significant differences in performance post intervention for Mesagno et al. (2009). Both reappraisal interventions (Balk et al., 2013; Moore et al., 2015) and along with the distraction intervention (Balk et al., 2013) produced significant improvements to performance under pressure. Whilst there is insufficient evidence to conclude that one strategy is more efficacious than the other, it was suggested that reappraisal allows performers to re-evaluate symptoms of anxiety to be facilitative of performance (Moore et al., 2015).

Conclusions

Pressure interventions offered in the included studies most often (n = 9) adopted cognitive-behavioral approaches in order to address the appraisal of pressure (e.g., Crocker et al., 1988). Relaxation and re-appraisal techniques (e.g., positive self-talk) were the most commonly used intervention strategies. These were suggested to reduce "unhelpful" aspects of embodied stress responses such as excessive tension and nausea (e.g., Keogh et al., 2006), enable emotion regulation (Olusoga et al., 2014), and divert attention from negative physiological symptoms of anxiety (Page et al., 2015). Distraction theories propose that high-pressure situations cause performance to decrease due to working memory becoming over-loaded with task-irrelevant stimuli. Task irrelevant stimuli, such as worries about consequences, disrupt what was once an automatic skill/performance (Anderson and Gustafsberg, 2016). Evidence suggests that pressure interventions delivered via cognitive-behavioral workshops, individual consultation sessions, emotional regulation strategies, and simulation training may all offer, at least to a small degree performance enhancement by improving an individual's ability to execute self-regulatory processes that support performance under pressure. However, improvements in performance related variables within control groups may suggest that performance related variables improved, but not because of the interventions but the repetitive exposure to the pressure tasks. Some control groups also provided educational or physical interventions that may enhance the perceived confidence or control over performance which may have contributed to an increase in performance within the control conditions.

Simulation studies that exposed individuals to 'pressure' settings produced the most consistent improvements to performance, in comparison to a control group. Researchers concluded that simulation of performance under pressure provides greater opportunity for an individual to demonstrate competence, therefore enhancing an individual's context specific confidence that they can perform the pressure task (e.g., Wetzel et al., 2011). Simulation interventions also provide the opportunity to develop coping skills in a controlled environment, incremented at a pace that encouraged the individual to utilize their coping techniques, develop resilience, and enhance both physical and cognitive functioning (e.g., Bell et al., 2013).

A common theme in reviewing the outcomes of pressure interventions was the influence of appraisals, particularly with regards anxiety and arousal in pressurized performance settings. Researchers commonly reported that individuals who perceived themselves as having the resources and efficacy to cope with pressure conditions were more likely to perceive anxiety as facilitative of performance (Blascovich et al., 2000; Seery, 2011).

This systematic review highlights limitations with the design, execution, and evaluation of pressure interventions. Notably, there is a clear need to better consider the approach used to generate meaningful performance pressures. By identifying pertinent incentives, pressure training can be more effectively contextualized and bespoke to the performance and contextual needs for individuals. As such, it is suggested that future research should better attend to the reliability and ecological validity of the methods used for generating pressure. Specialized samples that require coping skills to facilitate performance under pressure may be particularly pertinent to generate an understanding of the types of meaningful incentives to be incorporated into pressure tasks. However, the opportunity to conduct research with 'hard to reach' groups (e.g., elite athletes) means that researchers are likely to have a small sample size and a control group that maybe affected by confounding variables (e.g., 'lower-skilled' cricket players that may not receive as many hours of training; Bell et al., 2013). Although this may mean that the results should be interpreted with a degree of caution this should not stop researchers from investigating such a unique sample, especially when the investigation focuses on enhancing performance under pressure. Researchers may adopt a phenomenological approach to the study of developing an intervention to aid coping under pressure, especially in light of the fact that pressure is a subjective experience and can be influenced by context. In view of the limitations noted by this systematic review, we suggest that future pressure research should; 1) establish a contextualised task which will generate pressure for participant. Having established a suitable pressure task, research should 2) assess the consequences of pressure by evaluating conscious and non-conscious effects and coping mechanisms, and 3) assess mechanisms through which coping with pressure might be improved. Future research should seek to address these limitations with greater theoretical emphasis to allow advances in both theory in practice.

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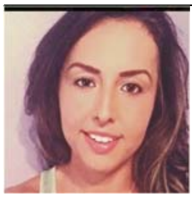

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Key points

- Simulation studies that exposed individuals to ‘pressure’ settings produced the most consistent improvements to performance, in comparison to a control group.
- This systematic review highlights limitations with the design, execution, and evaluation of pressure interventions.
- Future research should attempt to better consider the approach used to generate meaningful performance pressures and assess the consequences of pressure by evaluating conscious and non-conscious effects and coping mechanisms through which coping with pressure might be improved.

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