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Penalty Success in Professional Soccer: A Randomised Comparison between Imagery Methodologies

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Abstract

One of the most cited forms of imagery training to enhance sporting performance is Holmes and Collins (2001) PETTLEP model, although there is limited evidence for its long-term effectiveness. PETTLEP is often compared to non-imagery controls rather than other imagery techniques. Functional Imagery Training (FIT) is an imagery-based behavioural change intervention, primarily focusing on goal centred motivation. Thirty male professional soccer players conducted a group goal setting task and were introduced to imagery and subjectively measured for vividness, then randomly assigned to three conditions; PETTLEP, group-based FIT, or a control. Baseline penalty kick success was measured, then interventions commenced lasting for a week after which, penalties were conducted again. Penalties were conducted for a third time between 15 and 17 weeks after baseline measurements. There were no differences in baseline scores between conditions on vividness of imagery and penalty kicking. Whilst the control condition did not improve, both imagery conditions improved penalty performance after one week, as did their vividness of imagery scores. However, after 15 weeks, only the FIT for groups condition maintained improvements on penalty scores and PETTLEP returned to baseline. Limitations of this applied research are examined and future directions for imagery use discussed.

Keywords: Functional Imagery Training, PETTLEP, Group Imagery, Motivation, Soccer.

There is considerable evidence that supports the use of imagery as a method to enhance short-term sports performance. However, research considering performance maintenance lasting longer than the intervention period is minimal (Wakefield, Smith, Moran, & Holmes, 2013) and there is debate surrounding the best methods for delivery (cf. Richardson, 2020). What is agreed upon (Hall, Mack, Paivio, & Hausenblas, 1998; Nordin & Cumming, 2008) is the combination of motivational (i.e., goals) and cognitively (i.e., rehearsing skills) based imagery functions which combine to enhance performance.

Paivio (1985) considered functions of imagery by suggesting that behavioural change is a factor of cognitive and motivational functions that operate on a general or specific level. The cognitive specific (e.g., to improve accuracy of penalties) function is concerned with skill development whilst the cognitive general (e.g., learning a set play) function is centred on tactics and strategies. Motivation specific (e.g., to win a match) relates to the goal and processes required to achieve success. Motivation general is further reduced (see Hall et al., 1998) to general-mastery based on overcoming setbacks due to adversity, and motivation general-arousal centred on controlling emotions. To put the factors of this approach into practice authors have since developed models that aim to utilise cognitive and motivational functions.

PETTLEP Imagery

Holmes and Collins (2001) sought to develop a systematic and structured imagery-based model rooted in neuroscience, building on the functional equivalence hypothesis, which links neural activity of motor imagery to motor execution (Jeannerod, 1994; Decety & Grezes, 1999). In order to maximise the similarity between the imagined and actual environment, the acronym PETTLEP (physical, environmental, task, timing, learning, emotion, perspective) was designed to provide a

clear framework for practitioners to work, becoming the model of choice for many psychologists in sport (Wakefield & Smith, 2009; Smith, Wright, Allsopp, & Westhead, 2007; Anuar, Cumming, & Williams, 2016; Pocock, Dicks, Thelwell, Chapman, & Barker, 2019). PETTLEP is a structured way for psychologists to work alongside athletes, periodically focusing on each of the seven components, adding depth to the imagined experience. By blending the components of PETTLEP when discussing the performance task, the individual is further required to work on techniques outside the initial sessions, connecting Paivio's cognitive and motivational functions through functional application.

Performance tasks using PETTLEP are often conducted on closed skills, such as a tennis serves (Blankert & Hamstra, 2017), goal shooting success (Smith, Holmes, Whitemore, & Devonport, 2001; Ramsey, Cumming, Edwards, Williams, & Brunning, 2010), or soccer pass accuracy (Hossini, Afroozeh, Vaezmosavi, Gerber, Puehse et al., 2019). For example, Smith, Wright, and Cantwell (2008) compared golfers bunker shots across four groups; PETTLEP; physical practice alone; PETTLEP plus physical practice; or a control. Although all groups improved, the PETTLEP with physical practice condition improved significantly in comparison to the other groups. This suggests that a combination of imagery training and practice could benefit most closed skills in sport.

Considering open skilled performance such as visual exploratory activity (VEA), Pocock et al. (2019) initially used PETTLEP scripts along with encouraging participants to watch a televised match and take notes on players of similar positions, to support elite academy football players imagery use. The six-week PETTLEP intervention developed performance with the ball and VEA, specifically with centre midfield participants whereby scanning is essential. It could be argued that if

PETTLEP enhances closed and open skilled performance, there is no requirement for an additional model of imagery. However, there is ongoing uncertainty if PETTLEP performance is maintained over time and if motivational imagery is explored in enough depth to evoke sustained imagery practise after intervention delivery. Thus, does PETTLEP promote long-term behavioural change required for sustained performance increments?

FIT Imagery

Functional Imagery Training (FIT) is a motivational and cognitive imagery intervention (Paivio, 1985), novel in sport (Rhodes, May, Andrade, & Kavanagh, 2018). FIT has theoretical roots in the Elaboration Intrusion (EI) theory (Andrade, May, van Dillen, & Kavanagh, 2015) focused on long-term behaviour change (Andrade, May, & Kavanagh, 2012; Andrade, Khalil, Dickson, May, & Kavanagh, 2016). Solbrig, Whalley, Kavanagh, May, Parkin et al. (2018) used a randomised control trial to group participants seeking to lose weight into a FIT or motivational interviewing (MI; Miller & Rollnick, 2012) condition. The FIT group lost on average 4 kg weight and 7 cm across their waistline over six months, compared to .74 kg and 2.7 cm in the MI group. Furthermore, after twelve months the FIT group retained improvements (6.4kg and 9 cm) compared to the MI group (.7 kg and 2.5cm), showing sustained behavioural change.

EI theory holds that apparently spontaneous thoughts enter consciousness and are then elaborated upon, which evokes an emotional response to behave in a specific way (Andrade et al., 2015). By using FIT, participants are trained to learn how to elaborate on thoughts using vivid and controllable imagery through a series of techniques similar in part to PETTLEP, which redirects the negative thoughts/imagery

that often occur in sport (MacIntyre & Moran, 2007), to a strong positive personal value, changing the foci of rehearsal (Solbrig et al., 2018).

FIT is not the same as MI but is conducted in its spirit following the same four processes; engage in conversation, focus on goals, evoke change and develop implementation plans. In practice, the individual discusses their values and goals before deciding on one specific aim which is examined using a series of scenarios that evoke motivation. Unique to FIT, each scenario is discussed, and imagery deployed using augmented techniques like layered response stimulus training (LRST; Williams, Cooley, & Cumming, 2013) which focus on enhancing each sensory modality, and which adds depth to the experience (Solbrig et al., 2018). After support, the individual learns to structure goals in three stages through imagining: long-term goal achievement; the sequence of process goals including the hard work, such as learning a specific skill; and immediate implementation (Rhodes, et al., 2018). To activate these three stages of imagery, cues are used in everyday activities which increases the frequency of imagery use. Crucially, these skills allow the individual to become their own trainer, using FIT on their own following the intervention or training.

The group-based FIT for sport intervention reported in this paper was designed to enhance player motivation through the Self-determination theory (SDT; Deci & Ryan, 1985) using relatedness, autonomy and mastery by sharing goals, struggles, personal values and reflections. Group FIT stems from grit research (Rhodes et al., 2018) which focuses on developing perseverance for hard work and encouraging harmonious passion (see Vallerand, Blanchard, Mageau, Koestner, Ratelle et al., 2003) by discussing goals (Zimmerman & Kitsantas, 1997). In Rhodes et al.'s (2018) work, individually administered FIT was compared to a de facto control group after six weeks of imagery support, leading to an increase in grit; a

combination of passion and perseverance for long-term goals (Duckworth, Peterson, Matthews, & Kelly, 2007; Duckworth & Quinn, 2009). This initial work was extended by adding cues to spontaneously activate motivational imagery and mental contrasting (Oettingen, 2012) of current ability with an actualised future self; imaging the emotions of success and the process of hard work. Additional feedback (Rhodes et al., 2018) from coaches stated that they would prefer group-based interventions due to time constraints. To our knowledge, there has been no empirical research into group-based imagery, but suggestions by Vealey and Greenleaf (2006) are an applied starting point that involve a series of imagery-based tasks.

Imagery is reflective (Lang, 1979) and is built on values and beliefs, emotions, experiences, trials and evaluations. This makes it a compound mental skill that may involve self-talk, individual goal setting, mindfulness, and a series of mentally contrasted images between current and future ability. The conversations between the psychologist and participant, and between teammates and peers, develop an idiosyncratic cognitive interpretation that produces a meaningful image (Kosslyn, 2005). It may also include spontaneous negative thoughts of failure and/or imagery of poor technique (MacIntyre & Moran, 2007), which FIT, through the EI theory refocuses by giving athletes the autonomy to learn techniques that diverts rehearsal towards positive outcomes.

In summary, whilst PETTLEP offers a cognitive and motivational function to improve performance, FIT goes further by using a person-centred approach through examining levels of intrinsic motivation, realigning negative thoughts, and linking cues to actions. PETTLEP is the most widely used mode of imagery for sports performance, but there is a lack of research exploring durations that last longer than

the intervention period. FIT is intended to be has been applied to a range of behaviours including sport but has not previously been delivered to groups.

The aim of this study was to compare penalty kick performance occurring three times; at baseline, after 1 week using the intervention, and after a subsequent 15 weeks autonomously self-administering the intervention. Knowing that PETTLEP plus practice should outperform traditional imagery (Blankert & Hamstra, 2017; Wright & Smith, 2007), specifically for penalty success (Ramsey et al., 2010), it was decided to deliver PETTLEP plus task practice over a week's condensed delivery. We tested two hypothesises: both imagery interventions would significantly increase penalty kick success after a week's use but, because FIT is designed to be self-perpetuating, that FIT would outperform PETTLEP in the 15-week follow-up.

Method

Participants

A sample of thirty males aged 19-34 (M = 24.3, SD = 4.2) were recruited by opportunity from a professional football team playing in the English Football League (EFL) One. Participants were all outfield players and were from the first team squad. Once players agreed to participate, they were randomly evenly assigned to one of three conditions; individual PETTLEP imagery, FIT for groups, or the control. Although five players did report that they had received imagery training from a sport and exercise psychologist, they all stated that they were not formally using imagery. These players were included in the study.

An additional three participants (goalkeepers) volunteered who were randomly assigned to participants rather than groups to avoid goalkeeper ability being a confounding factor for overall group score. The goalkeepers were not present for any part of the intervention delivery. Two coaches with Union of European Football

Associations (UEFA) Pro Licenses agreed to score and conduct the penalties. The coaches were blind to the conditions and were not present during the intervention delivery, and all scores at each timepoint were kept by the coaches, keeping the researchers blind from scoring.

Materials

All participants attended an initial group workshop where the performance task was discussed and general research overview. During this workshop a single item was used to assess vividness of visual imagery (Marks, 1979) at baseline and at week one, with participants rating their imagery from *0 (No image at all, you only "know" that you are thinking of the object) to 10 (Perfectly clear and as vivid as normal vision).* This single item acted as a way to locate low scorers who were later offered additional support and enabled groups to be compared. Due to time allocations with the participants, we were not permitted by the club to conduct scales such as the Sport Imagery Ability Questionnaire (SIAQ; Williams & Cumming, 2011), which resulted in a single item being used.

The control and PETTLEP sessions were developed from Pocock et al.'s (2019) instructions to footballers, and Smith et al.'s (2007) guidance for golfer's imagery. Although the PETTLEP acronym was used, the order and process of imagery delivery was flexible for responsive participant feedback aligned to Lang's (1979) suggestions. FIT was based on Solbrig et al. (2018) and Rhodes et al. (2018), using the four processes of MI to guide motivational imagery. A series of sessions were recorded for fidelity purposes and the workshop transcribed which is available upon request.

The scoring system was adapted from Smith et al.'s (2001) study examining hockey penalties and has since been used in a series of other studies such as Blankert

and Hamstra's (2017) methodology in tennis. Two points were allocated for a goal, and one point for an on target shot saved by the goalkeeper. A miss (wide or high of the goal) scored zero.

Procedure

Institutional ethical approval was gained after the club gave written consent for their players to be used as potential participants. Each participant from the first team squad gave signed consent to partake after reading a project information sheet.

In a preliminary group workshop, all participants were asked to review long-term goals and focus on personal obstacles and struggles. A discussion of mental imagery was introduced using multisensory layers of imagery from imagining the sight, sounds and feel of a sunrise and thunderstorm, and participants were asked to rate the vividness of their visual imagery (see Marks, 1979), noting the score for future reference. Low imagery scorers were subsequently offered individual support and groups later compared for differences. Players were then verbally introduced to the study, and informed that the aim is to research the 'best ways to prepare individuals for taking a penalty'. The group was then split into three pre randomised conditions from their squad number and placed into conditions called performance (control), imagery (PETTLEP), and FIT.

In their groups, players went to the pitch, and firstly completed a warm-up. Penalties were taken on a pitch that meets EFL requirements including goal size, with a size 5 EFL Mitre ball. Players all wore their training kit with preferred footwear and were encouraged to stay and watch their teammates take all penalties to increase stress and situational demands. The coaches explained the scoring to the groups, were responsible for designating and confirming points (see materials) and were asked to keep the process consistent and scores confidential. The coaches did not know the

hypothesis of the study until the end of the research to avoid any form of biased scoring and were blind to the groupings. Each player completed 10 penalties at their own pace with their randomly assigned goalkeeper with the potential to score a maximum of 20 points.

When participants finished their ten penalties, the control and PETTLEP conditions were met individually by a researcher. Participants in the control group discussed their penalty performance routine, and had any questions related to the project answered. Individual administration of PETTLEP was vital as the approach is specific to the participant developing each of the seven imagery components related to the task. Based on Blankert and Hamstra's (2017) PETTLEP guidance, focusing on emotion-based suggestions (Ramsey et al., 2010), imagery was trained and subsequently participants were asked to imagine ten penalties in 'real time'. Participant feedback on imagery experience was then discussed in detail and the researcher helped with vividness and controllability if required through additional multisensory support. Participants were additionally required to complete independent imagery a minimum of three times the following week including physical practice, each time imagining ten penalties following PETTLEP recommendations.

Participants in the FIT condition had their group imagery session the following morning due to time constraints on the testing day. The FIT condition had a series of imagery tasks to complete in pairs with feedback to peers and researchers with the aim to promote intrinsic motivation through relatedness and mastery (Ryan & Deci, 2003). These tasks are available upon request. The imagery tasks focused on three processes: exploring achieving individual long-term goals; short-term learning processes including obstacles and success; and implementation plans for immediate application. These three phases of imagery resulted in players, as a group, deciding on

a behavioural cue (filling up their water bottle), which would be a trigger to activate imagery. To remind players of the sequence, they named this process a LAP; Locate cue (water bottle), Activate imagery by imagining long-term success and process goals, then Plan for the current penalty task. FIT participants reported using LAP multiple times each day.

All individuals regardless of condition were given open opportunities to ask questions related to the project. The supportive and inquisitive nature of imagery for both PETTLEP and FIT conditions within the first week, plus additional non imagery support for the control group having the option to ask questions related to performance routines, resulted in seven individual sessions being requested. The individuals in the control group (n=2) discussed their pre-performance routines, whilst individuals in the PETTLEP (n=3) and FIT (n=2) groups had help to increase vividness and controllability.

A week later, every player was required to take 10 penalties over the course of two days with their assigned goalkeeper and the same UEFA coaches scoring. After each group had completed the task, participants attended a brief workshop, again completing the imagery vividness item and were given the opportunity to give feedback on their performance and experiences over the last week. At this point participants were given a booster session, whereby the control and FIT condition were met in separate groups, and PETTLEP participants met individually to remind them of the previous week's imagery application and implored to continue with their practice as much as they felt appropriate.

Participants completed final testing in their own time between 15-17 weeks after baseline. The same two coaches scored the penalties, but two of the three assigned goalkeepers were different from the previous sessions, so goalkeepers were

randomly allocated to players. A debrief was given at the end of the season and participants given the opportunity to experience either imagery intervention upon request.

Data Analysis

All analysis was conducted using R version 3.6.1 (R Core Team, 2019) and the relevant code, results and visualisations are available here: https://osf.io/tm58h/?view_only=20423489f687496697c5bcf63dd8d965

Results

A mixed measures ANOVA for the imagery vividness scores between the three conditions and two timepoints (baseline and week 1), displayed no differences between conditions $F(2, 27) = 1.21$, $p = .314$, $\eta_p^2 = .07$, but significant differences due to time $F(1,27) = 14.70$, $p < .001$, $\eta_p^2 = .09$), with no significant interaction of time and condition ($F(2, 27) = 1.75$, $p = .193$, $\eta_p^2 = .02$). Scores significantly increased from baseline (M=7.3, SD=1.16) to week 1 (M=8.2, SD=0.79) for PETTLEP $t(9) = 3.25$, $p < .01$, $d = .91$ and FIT from baseline (M=7.1, SD=1.1) to week 1 (M=7.9, SD=1.29) $t(9) = 2.8$, $p = .022$, $d = .67$, but not from baseline (M=7, SD=0.94) to week 1 (M=7.2, SD=0.92) for the control $t(9) = .69$, $p = .501$, $d = .22$ (see Figure 1).

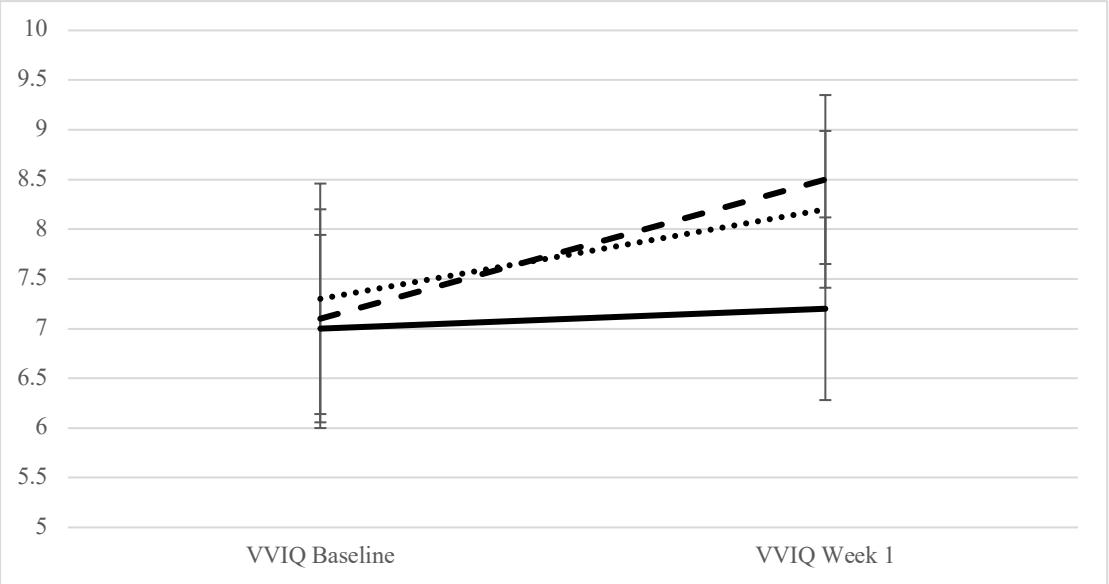

Figure 1. VVIQ scores increased for each condition over a week, but the control (solid line) did not significantly change, whereas the PETTLEP (dotted line) and FIT (dashed line) did significantly change. Error bars show standard deviation.

Overall, the control group scored 67.5% of penalties at baseline, 69.5% at week 1 and 69% after +15 weeks. The PETTLEP group scored 67% of penalties at baseline, 77.5% at week 1 and 71% after +15 weeks. For FIT baseline penalty success was 68.5%, 80.5% for week 1 and 81% at +15 weeks. Although the sample size is considered small, we conducted a series of inferential tests to determine significance.

Penalty scores (Figure 2) significantly differed over time $F(2,45) = 15.27$, $p < .001$ $\eta_p^2 = .16$, conditions $F(2, 27) = 3.60$, $p = .041$, $\eta_p^2 = .15$, and with a significant interaction $F(3, 45) = 3.63$, $p = .017$, $\eta_p^2 = .08$. A Oneway ANOVA at baseline, reported no differences between conditions $F(2,27) = .05$, $p = .95$, $\eta_p^2 = .004$, with PETTLEP scoring the lowest (M=13.4, SD=1.9), followed by the control (M=13.5, SD= 1.96) and the FIT condition scoring the highest (M=13.7, SD=2.45). However, conditions significantly differed at week 1 ($F(2, 27) = 5.99$, $p = .007$, $\eta_p^2 = .13$) and after +15 weeks $F(2, 27) = 10.43$, $p < .001$, $\eta_p^2 = .44$.

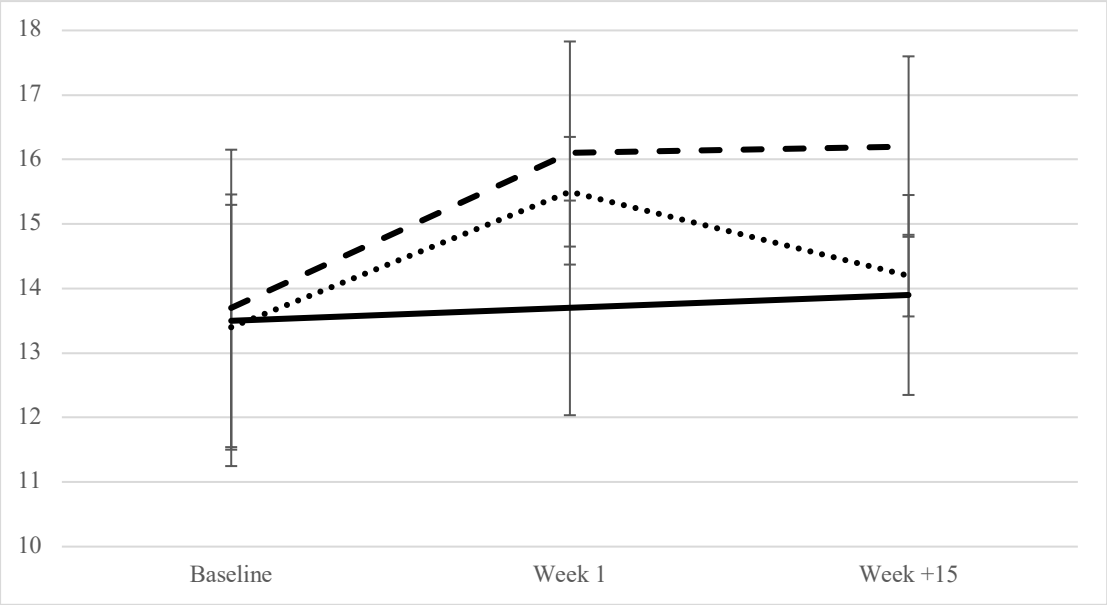

Figure 2. The control group (solid line) did not vary in penalty performance between timepoints. Both imagery groups significantly improved following the training at week 1, but after 15 weeks the PETTLEP condition (dotted line) returned to baseline, whilst FIT (dashed line) maintained significant improvements.

At week 1, the PETTLEP (M=15.5, SD=0.85) $t(18) = 2.71$, $p = .018$, $d = 1.21$ and FIT (M=16.1, SD=1.73) $t(18) = 2.9$, $p = .01$, $d = 1.3$ conditions scored significantly more than the control (M=13.9, SD=1.66), with no differences between both imagery groups $t(13) = .98$, $p = .343$, $d = .44$. At +15 weeks after baseline, the PETTLEP condition scores decreased (M=14.2, SD=0.63) displaying no significant differences with the control group (M=13.8, SD=1.55) $t(12) = .76$, $p = .464$, $d = .34$, now scoring significantly less penalties than those in the FIT condition (M=16.2, SD=1.4) $t(13) = 4.12$, $p = <.002$, $d = 1.84$. Significant differences were maintained between the FIT and control at +15 weeks $t(18) = 3.64$, $p <.002$, $d = 1.63$.

Discussion

The results support the effectiveness of imagery as a method to enhance the performance of penalty kicks. After one week in comparison to baseline scores and

the control group that practiced as usual, imagery groups made significant improvements. Changes were observed in a relatively short timeframe, similar to that of Blankert and Hamstra's (2017) findings when using PETTLEP, but PETTLEP does not show a lasting change, unlike FIT. There are three primary points to make: the effectiveness of FIT and PETTLEP after a week's use; the differences between imagery conditions after 15 weeks; and the effectiveness of group-based imagery training.

PETTLEP and FIT work to enhance performance over short timescales. The one-week imagery interventions were penalty kick specific and provided continued support to improve mental skill use. Although FIT does not require the individual to explicitly practice by standing on the pitch wearing their kit (i.e., environment component), it is an explicit process of focusing on a sequence of goals that link emotion to action. Firstly, based on wider research (Blankert & Hamstra, 2017; Ramsey et al., 2010) and acknowledging that FIT and PETTLEP are task specific methods of enhancing performance, we hypothesised that both imagery interventions would significantly increase penalty kick success after a week's use, which they did, with the PETTLEP group increasing success rate by 10.5% and FIT by 12%. This increased occurred because both imagery models are intended for specific task increments based on immediate goals.

Secondly, we hypothesised that after a 15-week follow-up the FIT group would outperform PETTLEP. Although the PETTLEP group increased from baseline to week one, this performance increment decreased by 6.5% by the 15-week follow-up, resulting in an overall increase from baseline at 4%. The original proposed PETTLEP methodology by Holmes and Collins (2001) is "a minimum, seven-point functional equivalence checklist" (p. 69) that should be used as a guide for sport

psychologists, and tasks outside initial meetings should promote learning. PETTLEP, as delivered in this study, is effective at enhancing performance but arguably not intended for long-term motivational change. The FIT intervention on the other hand was developed for sustained change (Solbrig et al., 2018) by realigning thoughts to positive outcomes through cues. Penalty success in the FIT group increased a further 0.5% by the 15 week follow-up ending with a maintained increment of 12.5% from baseline measures. Therefore, there was a significant difference between the imagery groups after 15 weeks, resulting in the second hypothesis being accepted.

FIT, utilising in the spirit of MI, uses a person-centred approach even when using group-based imagery. The person-centred approach is essential for motivational development concentrated upon an array of processes, including performance and outcome goals (Zimmerman & Kitsantas, 1997), which shift, and change based on individual priorities. The group setting stimulated discussion about goals and the application of imagery. Deci and Ryan's (1985) SDT underpinned our group-based imagery application. Sharing goals, obstacles and personal strengths developed player connection and by discussing emotions this relatedness was enhanced. Plans were process based facilitating mastery towards a long-term goal even though the penalty task was not functional for general performance. Consequently, individuals engaged in meaningful conversation, focused upon intrinsic development, evoked change discussion and planned for progress autonomously (Miller & Rollnick, 2012). The person-centred FIT for groups approach directly explores specific and general motivational goals (Paivio, 1985) discussed through mutual collaboration with the psychologist and team-mates. These discussions emphasise the importance of self-regulated deliberate practice and emotional control connected with long-term goals,

resulting in positive self-imagery which can impact performance (Quinton, Veldhuijzen van Zanten, Trotman, Cumming, & Williams, 2019).

This research started as an experimental study with specific measurement points, but due to the applied nature of working with professional athletes and coaches who are accountable for the team results, we had to be pragmatic with testing days making our research action based. For example, we initially planned for the final retest to occur after 12 weeks, but this was moved back to accommodate additional matches, then we were informed by the club that testing could not occur in groups due to time restraints and player availability. Furthermore, the head coach did not want his players to be 'extensively researched' and were not permitted to conduct questionnaires like the SIAQ which would have added additional validity to the design. We were later informed that only two players out of the squad of thirty-seven had taken penalties over the previous two seasons, although all were required to practice each week. Fortunately, for this pragmatic study we had a handful of curious coaches who enjoyed collaborative research, and who persevered for study completion agreeing to collect and appropriately store data, leaving us blinded to the results until the end. We acted informally to collect the data within our ethical clearance window, and for others wishing to conduct a similar study, there is a need to be flexible with procedures to suit the applied sample.

We acknowledge a chain of limitations with our method and findings, specifically the sample, performance task and imagery replication. To start, we do not intend to make nomothetic generalizations to females or non-professional athletes from our male sample. The experimental groups engaged in tasks and discussed personal imagery application (Lang, 1989), developing learning strategies specific for increasing vividness and controllability. The points allocation that determined

performance and the ecological validity of the task itself is a noteworthy limitation. Whilst we did base our methods on previous studies (Blankert & Hamstra, 2017; Ramsey et al., 2010; Smith et al., 2001), and attempted to add stress through peer observation during penalties, the actual experience drastically differs from practiced tasks. Finally, we do recognise the complexity of replicating imagery interventions due to the collaboration between psychologists, peers and players. Although structured guides are referred to, such as PETTLEP or the participant developed LAP component of FIT, each individual's imagined representation is exclusive to them (Kosslyn, 2005). To overcome this initial barrier, all group tasks and imagery guides are available upon request to support others with future research.

In conclusion, the results show that imagery enhances penalty taking success when used with support. After support, motivational imagery, specifically FIT, maintains performance increments through independent self-perpetuated application. To provide useful directions for coaches and researchers hoping to reproduce similar findings, we are currently developing video resources and running FIT training for MI practitioners. We recognise the importance for practitioners administering FIT to have a grounding in MI with supervised hours that promote fidelity and to ensure practitioners work within the intended spirit of the approach. We would like to see future research being conducted in female sport, in different levels of competitive performance, and using a variety of tasks. To enhance the validity, applied research could be conducted by comparing two teams; one team who are using FIT against a paired team using another motivational intervention. As FIT practitioners we are now examining the differences between individually administered and FIT for Groups interventions over longer time periods and in a variety of sports. With every additional variable that could be added for validity comes an additional layer of

complexity for the intervention. Therefore, closed skill performance is often researched more effectively by controlling extraneous variables. Research by Pocock et al. (2019) does start this functional process by assessing VEA, which will be an interesting direction to subsequently take FIT with the aim to add to the FIT psychologist's toolkit.

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