Coaching under pressure: mental skills training for sports coaches

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1   Coaching under Pressure: Mental skills training for sports coaches
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Abstract

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43   While athletes have benefitted from systematic Mental Skills Training (MST) (e.g.,

44   Thelwell & Greenlees, 2001), there is little evidence of such programmes existing for sports

45   coaches, despite coaches being considered performers too (Frey, 2007). This study involved

46   the development, implementation, and evaluation of a "Coaching under Pressure" MST

47   programme, aimed at enhancing coaches' ability to cope with stressors and coach effectively

48   in 'stressful' situations. Five coaches from one of Great Britain's most successful sporting

49   universities (British Universities and Colleges Sport rankings) participated in a six-week

50   MST intervention programme. Coaches' use of mental skills (MSQ), perceptions of

51   precompetition state anxiety (CSAI-2md), and coping abilities (MCOPE) were assessed

52   before and after the series of workshops. While statistical significance was only found for a

53   small number of the observed variables, the practical significance of the intervention for

54   coaches was highlighted via a social validation questionnaire. Specifically, coaches described

55   positive changes in their coaching performance as a result of the intervention. The findings

56   have implications for the development of coach education programmes, and for sport

57   organisations that must be aware of the stressors involved in coaching and ensure that

58   coaches have access to relevant, research informed, MST at all stages of their careers.

59

Introduction

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61   Sports coaches are increasingly regarded as performers in their own right (Thelwell

62   et al. 2008a). Although elite coaches perform in somewhat different ways to their athletes,

63   they still have to plan meticulously for training and competition, execute training plans with

64   the flexibility to adapt in competitive situations, and cope with the stressors of the intense

65   competition, the intrusion of the media, and the pressure to produce results. It is little wonder

66   that coaching in sport is now well established as an occupation with the potential to cause

67   considerable strain (Olusoga et al., 2010). Indeed, previous research has identified stressors

68   from organisational (e.g., managerial conflict, lack of financial assistance, role conflict),

69   competitive (e.g., managing athlete needs, professionalism, selection issues), and personal

70   (e.g., sacrificing personal time) sources (e.g., Frey, 2007; Olusoga et al., 2010; Thelwell et al.,

71   2008). Furthermore, the consequences of experiencing stress can also be severe with coaches

72   describing emotional exhaustion, depression, and withdrawal from sport as effects of stress

73   (Frey, 2007; Olusoga et al., 2010).

74   Competition and organisational stress has long been an issue for applied sport

75   psychologists working with sports performers, and this is reflected in the amount of research

76   literature dedicated to the development and evaluation of MST training packages and

77   interventions (cf., Brewer & Shillinglaw, 1992; Daw & Burton, 1994; Hanton & Jones, 1999;

78   Patrick & Hrycaiko, 1998; Savoy, 1993; Shoenfelt & Griffith, 2008; Thelwell & Greenlees,

79   2001, 2003). Psychological factors certainly play a role in athletic success. Indeed, Eccles et

80   al. (2012) described a theoretical framework for the self-regulation of athletes' emotional

81   states, which suggested that psychological skills (e.g., goal-setting, relaxation, imagery, and

82   self-talk) are required to enhance psychological abilities (e.g., the ability to relax). These

83   psychological abilities allow performers to achieve optimal mental states for the tasks they

84   engage in, and evidence suggests that systematic MST can enhance athletes' ability to use

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85   psychological skills in stressful competitive settings (Daw & Burton, 1994). For example,

86   Brewer and Shillinglaw (1992) found that participants in a series of four psychological skills

87   training workshops improved their knowledge of psychological skills, placed more

88   importance on these skills, and used them more frequently after the intervention. Daw and

89   Burton (1994) used case studies to assess the effectiveness of a MST intervention aimed

90   specifically at goal-setting, imagery, and arousal regulation for collegiate tennis athletes and

91   again found improvements on several cognitive and performance variables (including state

92   and trait measures of confidence and anxiety). Similarly, Hanton and Jones (1999)

93   demonstrated that swimmers' directional interpretation of anxiety symptoms became more

94   facilitative following an MST intervention focused on goal-setting, imagery, and self-talk.

95   Using a single subject design, Thelwell and Greenlees (2001) explored the

96   effectiveness of a MST package (including goal-setting, relaxation, imagery, and self-talk) on

97   gymnasium triathlon performance. Results again demonstrated the efficacy of MST, with all

98   five participants increasing their use of mental skills and improving their triathlon

99   performance. More recently, Shoenfelt and Griffith (2008) also demonstrated that MST

100   might be useful for improving specific elements of performance. Their MST programme,

101   delivered to participants in eight 1-hour sessions over a 2-week period, included relaxation,

102   goal-setting, imagery, attentional focus, behavioural modelling, and pre-performance routines.

103   Although results demonstrated that the MST intervention appeared, generally, to improve

104   service accuracy in a group of 11 intercollegiate volleyball players, the specific skills of

105   imagery ($r=0.82$) and the use of pre-performance routines ($r=0.75$) were positively correlated

106   with higher percentage of accurate serves.

107   Taken together, these findings certainly indicate that MST can have a beneficial

108   impact on performers' awareness, knowledge, and use of psychological skills, as well as their

109   performance in competitive situations. Indeed, there is a wealth of literature regarding the

110   use of mental skills to enhance athletic performance and modify athletes' perceptions.

111   However, sports coaches too, must be able to manage stressors and perform their roles when

112   under pressure, a fact reflected in the current glut of research exploring the stress experiences

113   of coaches at various levels (e.g., Frey, 2007; Olusoga et al., 2009; Thelwell et al., 2008).

114   Research that has focused on coaches' use of psychological skills (e.g., hall & rogers, 1989),

115   has tended to explore how coaches use these skills with their athletes, rather than to improve

116   their own coaching 'performance'.

117   Taylor (1992) commented on the "growing concern" over stress in sports coaching

118   (p.27) and outlined a five-step process for developing stress management interventions for

119   coaches. Specifically, after identifying the stressors that coaches encounter and the

120   symptomology displayed (i.e., the ways in which coaches respond to stress), Taylor

121   advocated the use of cognitive, behavioural, and emotional/psychological coping skills with

122   coaches, including relaxation training and cognitive restructuring. Yet dspite coaches at

123   various levels being considered as performers in their own right, and several studies that

124   attest to the array of stressors that coaches experience (e.g., Fletcher & Scott, 2010; Olusoga

125   et al., 2010; Thelwell et al., 2008b), there is a paucity of research detailing the development

126   or evaluating the effectiveness of MST for coaches.

127   Olusoga et al. (2012) interviewed coaches from one of Great Britain's most successful

128   Olympic teams about the factors perceived to be important in world-class sports coaching. In

129   discussing the importance of training and development for coaches on the pathway to elite

130   sport, one coach specifically explained that, "if we really want to lay the foundations for

131   long-term success in sport, then we have to take the education of our coaches more

132   seriously." The purpose of the present study, therefore, was to use the information garnered

133   from successful Olympic coaches (Olusoga et al., 2012) to design, develop, implement, and

134   evaluate a MST intervention package aimed at enhancing coaches' ability to coach under

135 pressure. Specifically, the intervention was designed to help coaches on the pathway to elite

136 sports coaching develop the skills, attributes and elements of preparation that had helped

137 experienced Olympic coaches achieve success in a highly pressurised environment.

138 **Method**

139 **Development of the Programme**

140   Based on an extensive research programme exploring world class coaches'

141 experiences of stress (Olusoga et al., 2009, 2010, 2012) the MST intervention programme for

142 the present study was designed to help coaches operate successfully and effectively when

143 under pressure. Specifically, six workshops were developed, aimed at encouraging coaches

144 to utilise various psychological skills, targeting areas deemed essential by highly successful

145 Olympic coaches (e.g., emotional control, communication, confidence; Olusoga et al., 2012).

146 While researchers have illustrated the efficacy and effectiveness of mental skills such as goal-

147 setting (Ward & Carnes, 2002), imagery (Shambrook & Bull, 1996), relaxation (Bull, 1989),

148 and positive self-talk (Tod, Hardy, & Oliver, 2011), Blakeslee and Goff (2007) suggested that

149 combining skills into comprehensive MST "packages" might be advantageous, particularly in

150 a group setting, not only in terms of resource and time management, but also team bonding.

151 Indeed, several researchers have demonstrated the efficacy and effectiveness of multimodal

152 intervention packages that combined several psychological skills (e.g., Brewer & Shillinglaw,

153 1992; Thelwell & Greenlees, 2001, 2003). Thus, the approach taken within this study was to

154 combine several mental skills into a six week intervention 'package' (see Appendix).

155   A combination of different approaches was taken by the Sport Psychology Consultant

156 (SPC) in the delivery of the workshops. Specifically, an educational approach was taken to

157 briefly present a rationale for the workshops and the themes that had been identifies as

158 important for them (Olusoga et al., 2012). Further, one of the aims of the programme was to

159 educate coaches about the various psychological skills that they could use (e.g., cognitive

6

160 restructuring, relaxation) and to provide examples of how these skills can result in improved

161 performance. A cognitive-behavioural framework also influenced the delivery of the

162 intervention. This approach typically involves understanding the concerns of the client (e.g., I

163 get nervous before an important competition), while exploring their thoughts (e.g., positive

164 and negative expectations) and behaviours (e.g., rapid speech). For example, in Workshop 1

165 (see Appendix) coaches were encouraged to think about how their stress related thoughts and

166 feelings might influence their subsequent behaviours in positive or negative ways. From a

167 cognitive-behavioural perspective, coaches were encouraged to explore and challenge

168 irrational stress related thinking (e.g., Workshop 3).

169   Although the themes for each session were developed based on previous literature, it

170 was essential that the SPC also adopted a client-centred approach so that the coaches could

171 take ownership of the intervention. Specifically, coaches were allowed and, indeed,

172 encouraged to discuss and explore relevant issues that were of significance to them as

173 individuals and as a group. As such, to ensure that the workshop content was relevant for

174 them, coaches were reminded and encouraged throughout each workshop to explore their

175 personal experiences of coaching in general, as well as experiences of stress and its influence

176 on their thoughts and behaviours.

177   As coaches at various levels have previously described a combination of somatic and

178 cognitive responses to their stress experiences (e.g., Frey, 2007; Olusoga et al., 2010), and

179 because relaxation strategies have been liked with an increased ability to concentrate on task-

180 relevant processes (Hanton & Jones, 1999), it was deemed important that cognitive and

181 somatic relaxation strategies should form part of the MST intervention. Athletes have

182 reported that while the primary functions of relaxation are to cope with competition anxiety

183 and to promote recovery, relaxation is also used to cope with 'everyday' anxieties

184 (Kudlackova, Eccles, & Dieffenbach, 2013). Coaches, who have described competitive,

185 organisational, and personal stressors (Olusoga et al., 2010), might also use relaxation

186 strategies and skills for multiple purposes. Indeed, Thelwell et al. (2008a) found that coaches

187 did use relaxation skills in practice and competition settings to improve communication with

188 their athletes and to help cope with poor training sessions and to reduce tension. As such

189 coaches in the present study were taken through a six-stage programme of Applied

190 Relaxation (AR; Ost, 1988) spanning the duration of the intervention period and

191 underpinning the cognitive strategies that formed the basis for each workshop. The main

192 purpose of this was to train coaches to be able to attain a state of physical relaxation in a

193 variety of situations.

194 **Evaluation of the MST Programme**

195   **Participants.**

196   With institutional ethics approval, five coaches (all men) aged between 31 and 38

197 years (34.2 ± 2.8 years) participated voluntarily in the study. Coaches had between seven and

198 18 years (10.6 ± 4.3 years) experience coaching, and represented three sports (field hockey,

199 rugby union, and triathlon). For coaches to meet the specific criteria of the study they were

200 required to hold a National Governing Body (NGB) Level 2 coaching certificate (minimum)

201 and have coached an athlete or team in at least national league level competition in their

202 chosen sport. In addition, four of the five coaches had coached athletes at either junior or

203 senior international level, or in international student competition. The delivery of the

204 workshops series coincided with the first half of the British Universities competitive season

205 for four of the coaches. The triathlon coach had come to the end of his athletes' competitive

206 season.

207   **Measures.**

208   *Demographic information.*

209   The workshop registration form for coaches requested demographic information (age,

210   coaching qualifications, total number of years of coaching experience, current level of

211   coaching, and the highest level of competition they had experience of coaching at). This

212   registration form was included in the preliminary information sent to coaches prior to the start

213   of the first workshop.

214   ***Mental Skills Questionnaire.***

215   The Mental Skills Questionnaire (MSQ; Bull, Albinson, & Shambrook, 1996) is a 28-

216   item self-report questionnaire designed to assess the mental skills that respondents currently

217   use. The MSQ is used primarily as an applied tool because its psychometric properties are

218   not as strong as a research based inventory. However, being more readily adaptable to

219   coaching populations, it was felt that to gain an understanding of coaches' current use of

220   mental skills, the MSQ was an appropriate measure to employ. Participants are asked to rate

221   their agreement with a series of statements (e.g., "I suffer from a lack of confidence about my

222   performance") by responding on a six point likert-type scale (1 = strongly disagree; 6 =

223   strongly agree). The MSQ comprises seven subscales (*imagery ability*, *mental preparation*,

224   *self-confidence*, *anxiety and worry management*, *concentration ability*, *relaxation ability*,

225   *motivation*) with four statements related to each. The MSQ was modified from its original

226   version to reflect its use here with coaches rather than athletes. Specifically, the wording of

227   item 25 was changed from "At competitions I am usually psyched enough to compete well",

228   to "At competitions, I am usually psyched enough to perform my coaching role well".

229   ***Competitive State Anxiety Inventory-2/modified.***

230   The Competitive State Anxiety Inventory-2/modified (CSAI-2md; Jones & Swain,

231   1992) is a 27-item self-report inventory designed to measure state anxiety in competitive

232   situations. The CSAI-2md comprises three subscales measuring pre-performance cognitive

233   anxiety, somatic anxiety, and self-confidence, with nine items in each subscale. Participants

234 are asked to respond by rating the intensity of each symptom (e.g., "I feel concerned about

235 losing") on a scale of 1 (not at all) to 4 (very much so), resulting in subscale scores of

236 between 9 and 36. In addition to indicating intensity, respondents are asked to indicate the

237 degree to which the experienced intensity of each symptom is perceived as facilitative or

238 debilitative towards their performance. Participants respond on a seven point likert-type

239 scale ranging from -3 (very debilitative) to +3 (very facilitative). Possible subscale scores

240 therefore range from -27 to +27 with a positive score indicating a facilitative effect on

241 performance.

242 ***Modified COPE.***

243 The modified version of the COPE inventory (MCOPE) was developed to more

244 accurately assess situational based coping in physical activity settings. MCOPE consists of

245 nine of the original COPE scales, and three additional scales relevant to sport and based on

246 previous research (Crocker, Kowalski, & Graham, 1995). Each of the subscales consists of

247 four items giving a total of 48 items.

248 Respondents are asked to think of a situation that they have encountered and to read a

249 series of statements about the various coping strategies that they may or may not have

250 employed to cope with the situation (e.g.," I tried talking to someone about how I felt").

251 Participants indicate on a five point likert-type scale the degree to which they used that

252 particular strategy (1 = used very little or not at all; 5 = used very much). Subscale scores

253 therefore range from 4 to 20. A second scale of "Coping Effectiveness" is also included.

254 Participants are asked to rate how effective they felt each coping strategy was in helping them

255 handle the situation, again on a five point scale (1 = Extremely ineffective; 5 = Extremely

256 effective), with subscale scores again ranging from 4 to 20.

257 ***Social validation questionnaire.***

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258   A social validation questionnaire (SVQ) was administered to coaches at the

259   completion of the workshop series to gain information regarding participants' feelings

260   towards the workshops they had completed. The questionnaire was designed to assess the

261   importance of the study and the perceived effectiveness of the intervention programme

262   (Thelwell & Greenlees, 2003). Participants were asked to answer four questions: After

263   completing the Coaching under Pressure MST programme: (a) How important do you feel it

264   is to be mentally prepared for the demands of coaching?; (b) Do you consider any changes in

265   your coaching performance to be significant?; (c) How satisfied were you with the workshop

266   programme?; and (d) Did the programme prove useful for you? Participants answered on

267   seven-point Likert-type rating scales with responses ranging from 1 (not at all

268   important/useful/significant/satisfied) to 7 (extremely important/useful/significant/satisfied).

269   Coaches were also asked to answer four open ended questions about their perceptions of the

270   programme as a whole: (a) If you feel that taking part in the programme has contributed to

271   enhancing or hindering your coaching performance, can you state why you feel this to be the

272   case?; (b) What do you feel were the most beneficial aspects of the programme and why?; (c)

273   Which skills did you find most difficult to learn/practice and why?; and (d) If you could

274   change anything about the programme, what would that be?

275   **Procedure.**

276   Coaches were recruited by contacting the Deputy Director of Sport (Coaching and

277   Performance) at a UK University. Information about the workshops was provided and a

278   registration form for interested coaches was also supplied. Coaches were also informed that

279   the workshop was to be evaluated as part of a research study, although it was made clear that

280   the workshops, not the coaches, were subject to evaluation. Five coaches agreed to participate

281   in the study Dates and times for the workshops (each lasting around 90 minutes) were

282   arranged via the Coaching Services Administrator, and were scheduled to take place weekly

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283   for a 6 week period. The SPC running the workshops was BASES (British Association of

284   Sport & Exercise Science) Accredited, held Chartered status with the BPS (British

285   Psychological Society), and also had two years of post-training consultancy experience.

286   Before the first workshop, coaches were asked to complete a pre-workshop

287   questionnaire pack which included the MSQ, CSAI-2md, and MCOPE questionnaires.

288   Specific instructions were attached to each questionnaire. Coaches were asked to fill in the

289   CSAI-2md and MCOPE questionnaires retrospectively (i.e., to consider the last important

290   event or competition that they had coached in, when responding to the questionnaire items).

291   At the end of the workshop series, coaches were asked to complete a social validation

292   questionnaire to give their thoughts on the workshop series. To obtain post-intervention

293   questionnaire data, coaches completed a second set of questionnaires immediately after their

294   first competition following the workshop series. All coaches returned the post-intervention

295   questionnaires within six weeks of the end of the final workshop.

296   **Data analysis.**

297   Because of the small sample size (n=5), parametric tests were considered unsuitable

298   (Coolican, 2014). As such, Wilcoxon Signed-Ranks tests were used to identify differences

299   between PRE and POST subscale scores on each of the relevant questionnaires. Effect sizes

300   were also calculated to judge the meaningfulness of any observed differences. Cohen (1988)

301   suggests that $r=10$ represents a small effect size, $r=.30$ represents a medium effect size, and

302    $r=.50$ a large effect size. These guidelines were followed in the interpretation of data in the

303   present study. For the first part of the SVQ, mean scores were calculated for coaches

304   responses to the four response scale questions. For the open-ended questions, coaches'

305   responses are presented using thick descriptive quotes which represent common themes.

306   **Results**

307   The results of this evaluation are presented in two sections. The first section reports

308   the findings from analysis of the pre- and post-intervention questionnaire data. Medians,

309   standard errors, and effect sizes were calculated and are presented in table 1. The second

310   section examines the data from the SVQs in which coaches discussed their perceptions of the

311   Coaching under Pressure MST programme.

312   **Analysis of Questionnaire Data**

313   **MSQ.**

314   Coaches' scores on the subscales of anxiety/worry management, concentration, and

315   motivation, all showed slight decreases. However, their sores for imagery, mental preparation,

316   self-confidence, and relaxation all increased from the pre- to the post-intervention evaluations,

317   indicating that coaches rated themselves as better at these skills after the intervention (see

318   Table 1). Wilcoxon Signed-Ranks revealed no significant differences were found between

319   pre- and post-evaluation scores for imagery, mental preparation, anxiety/worry management,

320   concentration, or motivation, although analysis of the data indicated that coaches self-

321   reported ability to relax was significantly higher after the intervention (Mdn=19), than before

322   the intervention (Mdn=15), z=-2.032, p=0.021(one-tailed), r=0.64. Further coaches scores on

323   the self-confidence subscale of the MSQ were also significantly higher post-intervention

324   (Mdn=18.0) than pre-intervention (Mdn=15.0), z=-1.826, p=0.034 (one-tailed), r=0.58.

325   **CSAI-2md.**

326   Coaches' median scores for the intensity of somatic anxiety decreased from pre- to

327   post-intervention measurement, and coaches' self-confidence also showed a slight decrease.

328   The median score for cognitive anxiety did not change from pre- to post-intervention. For the

329   coaches' intensity scores on the CSAI-2md, no significant differences were found between

330   pre- and post-intervention evaluation cognitive anxiety and self-confidence subscales.

331   However, the intensity of coaches' pre-competition somatic anxiety was significantly higher

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332   pre-intervention (Mdn=18.0), when compared with post-intervention (Mdn=16), z=-1.826,

333   p=0.034(one-tailed), r=0.58. For the directional interpretation scores, coaches appeared to

334   perceive their somatic anxiety and self-confidence as more facilitative towards performance

335   post-intervention, while cognitive anxiety showed a trend in the opposite direction, becoming

336   perceived as slightly less facilitative. However, while coaches perceived that their somatic

337   anxiety and self-confidence became more facilitative, no statistically significant differences

338   were found.

339   **MCOPE.**

340   Results suggested that coaches used the suppression of competing activities, venting,

341   and humour to a greater extent after the Coaching under Pressure workshops than they had

342   before the intervention. There was no change in coaches' use of effort, denial or instrumental

343   support, but seeking social support for emotional reasons, behavioural disengagement, self-

344   blame, planning, active coping, and wishful thinking were all used less after the intervention

345   period. Results indicated that coaches used self-blame as a coping strategy significantly less

346   after the Coaching under Pressure workshops (Mdn=12.0) than before (Mdn=13), z=-2.041,

347   p=0.041(two-tailed), r=0.65. No significant differences were found on any other of the

348   MCOPE subscales.

349   **MCOPE Effectiveness Scale.**

350   Wishful thinking was perceived by coaches to be a slightly less effective coping

351   strategy after the Coaching under Pressure workshops. There was no reported change in the

352   perceived effectiveness of venting, humour, and denial, but seeking social support for

353   instrumental and for emotional reasons, behavioural disengagement, self-blame, planning,

354   supression of competing activities, effort, and active coping, were all perceived as more

355   effective coping strategies. However, no statistically significant differences were found

356   between coaches' pre- and post-intervention MCOPE Effectiveness subscale scores.

357   **Analysis of Social Validation Questionnaire Data.**

358   Fundamental to applied sport psychology is the need to evaluate applied practice

359   (Andersen, Miles, Mahoney, & Robinson, 2002). While questionnaires were employed to

360   note any significant changes in coaches' self-reported use of mental skills, experience of

361   competitive anxiety, and use of coping strategies, in accordance with Kelly's (1955) Personal

362   Construct Theory, feedback should also be gathered regarding participants' satisfaction with

363   and perceptions of the intervention. For the first part of the Social Validation Questionnaire

364   Coaches were asked to respond to a series of statements about the intervention on a likert-

365   type scale (e.g., 0 = *not at all important for me* to 7 = *extremely important for me*). For the

366   second part, coaches were asked a series of open ended questions about their participation in

367   the Coaching under Pressure workshops and their perceptions of the programme as a whole.

368   Here, a deductive approach was taken and the questions asked formed a priori themes (Patton,

369   2002).

370   Coaches' post-intervention evaluations indicated that being mentally prepared for the

371   demands of coaching was important to them (M=6.4) Coaches also suggested that changes in

372   their coaching performance were significant (M=5.2), that they were satisfied with the

373   Coaching under Pressure MST programme (M=6.2), and found attending the workshops

374   useful for their coaching development (M=6.0).

375   In response to the open-ended questions, coaches felt that taking part in the

376   programme had helped their coaching performance by giving them "techniques to keep

377   focussed, stay in the moment and be positive". Three coaches also suggested that having

378   time to reflect on their performance was extremely helpful, while one coach explained how

379   the intervention had helped him to pay more attention to his own mental preparation:

380   It made me realise that I need to look after myself more and use all the

381   performance skills that I encourage in my athletes. Too often I am too

382   focused on them and not paying anywhere near enough attention to myself.

383   Coaches were also asked about what they felt were the most beneficial aspects of the

384   programme. All five coaches discussed the benefits of "sharing practices and experiences

385   with colleagues", while three coaches discussed how beneficial the relaxation training had

386   been for them. One coach also reiterated the importance of self-confidence for coaching,

387   stating "…the building of self-confidence and positive self-talk. The sheet we went through

388   for reframing negative thoughts I thought was excellent and have shared it with my athletes."

389   When asked about which aspect of the course was the most difficult to learn/practise,

390   all five coaches explained that going through the programme of Applied Relaxation was the

391   most challenging. One coach explained that "in terms of new skills, the relaxation technique

392   was difficult because it was completely new so was very time consuming to begin with."

393   Another discussed the fact that he found it difficult to "learn how to release muscular tension

394   in [his] body," because he was "so used to being tense."

395   In terms of what coaches would change about the programme, only two coaches

396   responded. One coach suggested that the course "could have been done over a longer period

397   of time to allow for more development of skills/ideas." Again, this coach highlighted the

398   benefits of coach interaction, suggesting that a longer course would have "allowed coaches to

399   feed back to each other more and challenge each other more." The other coach who

400   responded to this question explained how he would have liked "more information reported

401   from high-level/Olympic coaches to reinforce personally why we do what we do."

402   **Discussion and Conclusions**

403   Coaches have been the beneficiaries of an increased amount of research attention

404   dedicated to exploring coaching stressors, coping strategies, and psychological skills use (e.g.,

405   Frey 2007; Olusoga et al., 2010; Thelwell et al., 2008). Nevertheless, while a significant

406   amount of research has investigated the development and evaluation of MST training

407   packages and interventions for athletes, the same value does not seem to have been placed on

408   MST for coaches, despite Taylor's (1992) concern over managing stress in the coaching role.

409   The purpose of this study was to outline the design, development, delivery, and evaluation of

410   a MST programme aimed at helping sports coaches develop the psychological skills and

411   attributes identified as essential for coaching in pressurised, stressful situations (Olusoga et

412   al., 2012).

413   Results suggested that coaches experienced positive changes in their perceptions of

414   their ability to coach effectively under pressure. Perhaps the most pronounced change in

415   coaches over the intervention period was their ability to relax. While the MSQ indicated that

416   the coaches' relaxation skills improved, the CSAI-2md also suggested that coaches were

417   effectively using these skills in competition situations. Specifically, the perceived intensity

418   of somatic anxiety symptoms during competition was significantly lower for coaches after the

419   intervention period. Although coaches had suggested, via the SVQ, that the Applied

420   Relaxation component had been the most difficult to practise and learn, the findings indicate

421   that this might also have had the biggest impact on coaches. Given the importance afforded

422   to confidence by coaches in previous literature (Olusoga et al., 2012), and the role of coach

423   efficacy in coaching performance (Feltz et al., 1999), it was pleasing to see that both the

424   MSQ and the modified CSAI-2 indicated positive changes in coaches self-confidence, and

425   that large effect sizes were reported.

426   Consistent with a process-oriented approach to coping (Lazarus & Folkman, 1984),

427   analysis of the MCOPE questionnaire data revealed that coaches used a variety of coping

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428   strategies to manage the stressors they encountered in their coaching roles. However, the

429   only statistically significant changes in the coping strategies used before and after the

430   intervention was that self-blame was used less frequently post-intervention. In terms of

431   coping effectiveness, the data did suggest some positive trends were apparent. Specifically,

432   each of the coping strategies (with the exceptions of suppression of competing activities,

433   humour, and wishful thinking) was perceived by coaches as being more effective after the

434   MST programme.

435   In applied settings, typical measurement scales consisting of preselected items might

436   not be relevant for all individuals. This quantitative, nomothetic approach to research may not,

437   therefore, be appropriate for evaluating the effectiveness of a MST programme. Daw and

438   Burton (1994) , however, suggested that while statistical significance is sought to reassure

439   researchers that observed results were not simply due to chance, the importance of practical

440   significance (i.e., how beneficial the participants perceive that the intervention, or the

441   learning of a particular skill was in enhancing their performance) should not be

442   underestimated. In the present study, the practical significance of the Coaching under

443   Pressure MST programme was highlighted by coaches through the SVQ. Specifically, having

444   time to reflect, sharing experiences and best practice with other coaches, building self-

445   confidence, and developing the ability to physically relax when encountering stressors were

446   all highlighted as beneficial aspects of the programme for coaches. Furthermore, coaches

447   indicated that they had experienced positive changes in their coaching performance, that they

448   had been satisfied with the MST programme, that the programme was useful, and that they

449   understood the importance of being mentally prepared for the demands of coaching.

450   Part of the success of the workshops in the present study was undoubtedly due to the

451   coaches' willingness and, indeed eagerness, to share their own experiences and stories. Indeed,

452   frequent discussion and interaction with peers and colleagues has been highlighted as a vital

453   aspect of coach development (Gilbert, Côté, & Mallett, 2006). As such, it was considered

454   important that this MST programme was carried out in a group setting to allow a greater

455   degree of coach interaction than in a one-to-one consultancy. The findings provide support

456   for the effectiveness of group-based MST interventions (e.g., Blakeslee & Goff 2007), but

457   experienced coaches must be willing to share their experiences and be open and honest about

458   their own practices if other coaches are to benefit from this wealth of experience.

459   Another of the study's strengths was the strong evidence base and rationale for the

460   material included in the workshop programme. Existing literature on the use of mental skills

461   to enhance performance and develop adaptive cognitions was also taken into consideration in

462   the design of each workshop. As such, a comprehensive MST programme aimed at

463   developing coaches' abilities, skills, and psychological attributes, in areas that had been

464   identified as important by a group of extremely successful Olympic coaches (Olusoga et al.,

465   2012) was developed.

466   This study also faced a number of challenges inherent in conducting research in real-

467   world settings and there were, therefore, several limitations. First, the small sample size and

468   subsequent lack of a control group mean that the results should be interpreted with a degree

469   of caution. Specifically, without a control group, it is difficult to say with certainty that

470   results were solely due to the efficacy of the MST programme. The coaches may have

471   developed their psychological skills naturally through the process of engaging with their

472   teams, athletes, and colleagues over the time of the intervention. Second, intervention

473   research has been criticised for a lack of follow-up assessments that allow retention effects to

474   be assessed (Hanton & Jones, 1999). Unfortunately, practical constraints did not allow any

475   further data collection to take place after the post-intervention evaluation. Future research

476   evaluating MST for coaches should not only include a control and/or placebo group, but

477   should also certainly incorporate follow-up assessments into the study design. Although

478   single-subject designs with multiple baselines are a common and effective way of measuring

479   the efficacy of MST programmes (e.g., Thelwell & Greenlees, 2001, 2003), it was deemed by

480   the research team that, due to the potential benefits of coach interaction, the intervention in

481   the present study be delivered to all participants at the same time.

482   Although the advantages of the group workshop delivery have already been outlined,

483   including follow-up one-to-one sessions with coaches to discuss individual issues in greater

484   depth would have been beneficial. Having time to discuss, for example, cognitive

485   restructuring strategies, issues with relaxation techniques, and confidence building strategies

486   on an individual basis might have been of benefit for the coaches. However, as outlined by

487   Brewer and Shillinglaw (1992), financial, temporal, and practical constraints, (e.g., the

488   availability of consultants), might preclude the use of one-to-one consultancy in the delivery

489   of MST programmes such as the one employed in this study. Additional research with larger

490   sample sizes might evaluate different modes of MST delivery with sports coaches.

491   Future research should also consider the measures used to assess the efficacy of the

492   training programme. For example, in this study, coaches completed the CSAI2-md while

493   reflecting on a previous performance. The post-intervention CSAI2-md was completed

494   immediately after a coaching performance. It is possible that the different retrospective time

495   periods involved might have influenced the coaches' perceptions of their pre-competition

496   anxiety, pre- and post-intervention. Moreover, for athletes, performance measures are usually

497   readily available (e.g., race-times, scores, win-loss ratio). For coaches, while behavioural

498   measures (e.g., Coaching Behaviour Assessment System; Smoll & Smith, 1980) and

499   indicators of leadership style (e.g., LEadership Scale for Sport; Chelladurai & Riemer, 1998)

500   exist, more objective measures of coaching *performance* are virtually non-existent. Attempts

501   to assess coaching performance via athlete performance are problematic by virtue of the fact

502   that the coaches' athletes are ultimately responsible for how fast they run or how many points

503 are scored. More subjective measures such as athletes' perceptions of any changes in overt

504 coach behaviours might be a possible way forward. The recently developed Coaching

505 Success Questionnaire - 2 (CSQ; Gillham, Burton, & Gillham, 2013)) includes subscales for

506 Self-Confidence, Wellness, Skills & Strategies, Winning, and Emotion Management, and

507 could prove useful in evaluating overall coaching 'performance'.

508   The findings of the present study indicated that a Coaching under Pressure MST

509 programme for coaches, including Applied Relaxation, cognitive restructuring, confidence-

510 building exercises, and communication strategies, had a positive impact on the coaches who

511 took part in the workshops. At an individual level, sports coaches have a number of

512 responsibilities. First, experienced coaches must be aware of how much they can contribute

513 to the development of younger, less experienced coaches and be encouraged to do so by the

514 culture of the organisations they work within. Second, coaches must be encouraged to

515 consider themselves as performers in their own right, and, as one of the coaches in the present

516 study asserted, "use all the performance skills that [they] encourage in [their] athletes." While

517 the sport psychology literature has long since reached this conclusion, there is still a

518 perception among coaches that the sport psychologist should work predominantly with and

519 for the athlete rather than the coach, despite the importance clearly afforded to psychological

520 attributes in coaching (Olusoga et al., 2012; Thelwell et al., 2008a). In this regard, the sport

521 organisation also has an important role to play. While mandatory MST for coaches is

522 probably unwise (coaches are more likely to engage if they choose to participate), it is

523 perhaps the job of the sport organisation to encourage coaches to see themselves as

524 performers and to prepare for the rigours of competition as such. In doing so, National

525 Governing Bodies (NGBs) must be willing to remove some of the barriers that appear to

526 prevent coaches from accessing psychological support. In particular, there still exists a

527 culture in which seeking support from a sport psychologist might be viewed as a sign of

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528   weakness, especially in the competitive workplace environment (Olusoga et al., 2010). At the

529   policy level, NGBs and other sports organisations must ensure that psychological

530   development and support for their coaching staff is embedded within their coach education

531   and development programmes, rather than seen as additional and optional CPD opportunity.

532   The importance of other coaches for the development of younger, less experienced coaches

533   has been outlined by several authors (e.g., Bloom, Durand-Bush, & Salmela, 1997; Nash &

534   Sproule, 2009). Organisations must foster a culture where coaches are encouraged to share

535   their experiences, their best practice, and their stories. The responsibility here lies with

536   individual coaches and at the feet of sport organisations, but it is important that a 'big picture'

537   mentality is developed. Best practice should be shared not only within sport organisations,

538   but also across different sports.

539   The implications for applied sport psychology practitioners should also be considered.

540   First, sport psychology consultants must be aware of the organisational and competitive

541   influences on sports coaches and must be equipped to deal with a range of concerns that

542   spans beyond the athletic arena. Indeed, the sport psychologist might have an active role

543   working with NGBs and other sporting organisations to instigate the cultural change

544   discussed above. Second, while there is certainly still a place for the sport psychologist,

545   seemingly recognised by elite and highly successful coaches, the difficulty for practitioners

546   lies in presenting and packaging sport psychology in a way that coaches feel is actually

547   beneficial for them.

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Pre- and post-intervention means and standard deviations for each of the questionnaire
subscales.

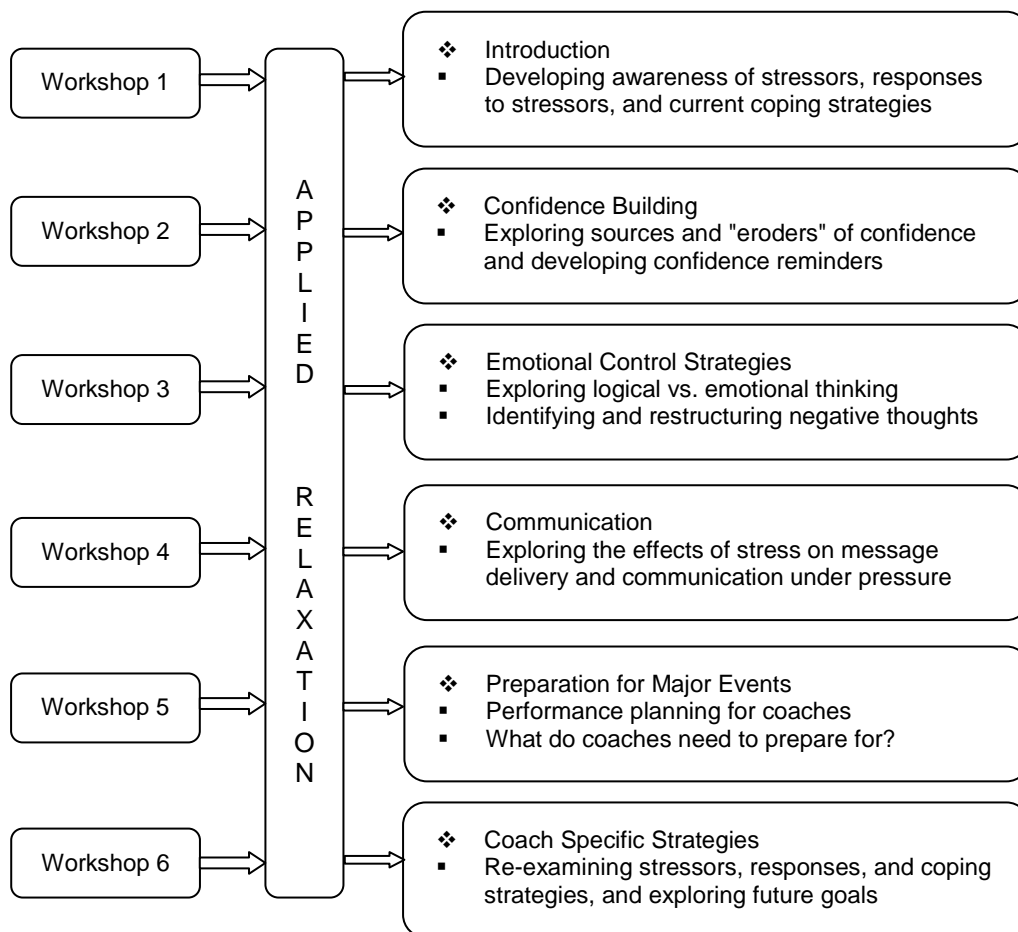|	Pre-intervention		Post-Intervention		Effect Size (*r*)
	Mdn	SE	Mdn	SE	
MSQ Subscale					
Imagery	18	0.60	21	0.74	0.52
Mental Preparation	16	1.53	19	1.08	0.23
Self-Confidence	15	1.44	18	0.86	0.58
Anxiety/Worry Management	19	0.81	17	0.51	0.20
Concentration	22	1.11	20	0.66	0.43
Relaxation	15	1.12	19	1.05	0.64
Motivation	19	1.00	18	0.98	0.17
CSAI-2md Subscale					
Somatic Intensity	18	2.42	16	2.41	0.58
Cognitive Intensity	21	1.78	21	1.74	0.41
Self-Confidence Intensity	25	3.51	23	1.69	0.00
Somatic Direction	-1	3.25	7.5	3.52	0.36
Cognitive Direction	4	4.79	0.5	3.57	0.09
Self-Confidence Direction	15	6.14	16.5	4.33	0.37
MCOPE Subscale					
Instrumental Support	8	1.36	8	1.36	0.55
Emotional Support	8	1.64	7	1.71	0.54
Behavioural Disengagement	8	1.16	5	1.05	0.26
Self-Blame	13	1.12	12	0.84	0.65
Planning	15	0.37	14	1.54	0.17
Suppression of Competing Activities	13	0.05	14	1.21	0.00
Venting	8	1.33	10	1.33	0.04
Humour	4	0.97	6	1.36	0.58
Effort	15	1.29	15	1.57	0.14
Wishful Thinking	10	1.63	8	1.52	0.04
Active Coping	15	1.29	14	0.93	0.23
Denial	6	0.49	6	0.68	0.45
MCOPE Effectiveness Subscales					
Instrumental Support	14	0.45	15	0.75	0.41
Emotional Support	13	0.55	16	2.08	0.27
Behavioural Disengagement	8	2.06	11	2.52	0.23
Self-Blame	13	1.38	13	1.21	0.18
Planning	16	0.58	17	0.84	0.18
Suppression of Competing Activities	13	1.77	15	1.72	0.45
Venting	12	0.40	12	0.80	0.42
Humour	12	0.87	12	0.56	0.36
Effort	15	1.28	16	0.80	0.36
Wishful Thinking	10	1.02	9	1.02	0.34
Active Coping	16	1.08	17	0.74	0.51
Denial	11	1.39	11	1.58	0.12

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640   Appendix 1

641   Six-week Mental Skills Training "package" for sports coaches[1].

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Workshop 1	→	A P P L I E D R E L A X A T I O N	→	❖ Introduction ▪ Developing awareness of stressors, responses to stressors, and current coping strategies
Workshop 2	→		→	❖ Confidence Building ▪ Exploring sources and "eroders" of confidence and developing confidence reminders
Workshop 3	→		→	❖ Emotional Control Strategies ▪ Exploring logical vs. emotional thinking ▪ Identifying and restructuring negative thoughts
Workshop 4	→		→	❖ Communication ▪ Exploring the effects of stress on message delivery and communication under pressure
Workshop 5	→		→	❖ Preparation for Major Events ▪ Performance planning for coaches ▪ What do coaches need to prepare for?
Workshop 6	→		→	❖ Coach Specific Strategies ▪ Re-examining stressors, responses, and coping strategies, and exploring future goals

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[1] A more detailed description of the MST programme is available from the first author.