



© 2017 National Strength & Conditioning Association. This is an author produced version of a paper published in Journal of Strength and Conditioning Research. Uploaded in accordance with the publisher's self- archiving policy.

Radcliffe, J., Comfort, P., & Fawcett, T. (2017). Barriers to the prescription of psychological strategies by strength and conditioning specialists. *Journal of Strength and Conditioning Research*.

DOI: [10.1519/JSC.0000000000002101](https://doi.org/10.1519/JSC.0000000000002101)

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18
- 19
- 20
- 21
- 22
- 23
- 24
- 25

**BARRIERS TO THE PRESCRIPTION OF PSYCHOLOGICAL
STRATEGIES BY STRENGTH AND CONDITIONING SPECIALISTS**

26 ABSTRACT

27 The purpose of this paper was to explore the barriers to strength and conditioning coaches
28 integrating psychological strategies within the strength and conditioning practice. The
29 sample of accredited strength and conditioning coaches comprised 10 subjects working
30 within the UK, 3 within the USA and 5 within Australia offering a cross section of
31 experience from a range sporting disciplines and educational backgrounds. Subjects were
32 interviewed using semi-structured interviews and thematic clustering was employed
33 utilizing interpretative phonological analysis to identify common themes. It was evident that
34 not incorporating psychological strategies into strength and conditioning practice could be
35 attributed to either internal, personally governed beliefs, or external, environmentally
36 governed situations. Internal sources consisted of insufficient knowledge either regarding
37 the value of psychological strategies or methods of implementing such techniques in
38 addition the implementation of psychological techniques was outside the remit of the coach
39 and difficulty existed in demonstrating the effectiveness of interventions. External causes
40 consisted of a lack of time, insufficient control and authority of training session content and
41 athletes' negative perceptions. Recommendations are made on the basis of eliminating the
42 observed barriers to the inclusion of psychological strategies. This included the use of
43 education programs for both strength and conditioning coaches and organizational gate
44 keepers and the suggestion for increased collaboration with qualified psychologists.

45

46 KEY WORDS

47 Continual professional development; Sport Psychology; Barriers.

48

49

50

51 INTRODUCTION

52 Over two decades ago Holloway [1, 2], and more recently, Mellalieu and Shearer [3]
53 suggested that based on the mental skills training approach it would be beneficial to use
54 particular strategies within strength and conditioning. These consisted of goal setting, mental
55 imagery, self-talk and techniques to regulate the activation of athlete. In identifying critical
56 psychological strategies, recent research [4] indicates that certified strength and conditioning
57 coaches consider motivation and confidence amongst the most important psychological
58 factors governing their clients performance. Furthermore, as published by the National
59 Strength and Conditioning Association, the strength and conditioning professional
60 guidelines state that the ability to “*use sport psychology techniques to enhance the training*
61 *and/or performance of the athlete*” [5] is a scientific foundation required by certified
62 strength and conditioning specialists. Furthermore it has been suggested that the strength
63 and conditioning specialist, having regular contact with the athlete, albeit independent of the
64 sports coach, is in an ideal position to contribute to the psychological aspects of training [6-
65 8].

66
67 Work has sought to identify, from the accounts of strength and conditioning coaches, the
68 specific psychosocial strategies used [9]. It is evident that a significant emphasis is on the
69 development or maintenance of athlete self-confidence as well as a notable focus on skill
70 acquisition and arousal management. Additionally, recent work has advanced this notion
71 and suggests that the role requires knowledge of psychosocial concepts and their respective
72 application [10] with strength and conditioning coaches stating that traditional psychological
73 skills and supporting ‘a rounded development of the individual’ [(p. 7)10] are important
74 elements of practice. This is in congruence with previous role explorations which suggest
75 that as a helping profession, strength and conditioning coaches should use more “softer-

76 skills” appreciating the requirement for interpersonal skills in fostering an effective client-
77 coach relationship [11]. Such softer-skills have previously been defined as gaining trust, and
78 ensuring athlete buy-in justifying approaches to practice [11].

79

80 Considering the aforementioned research which suggested strength and conditioning
81 coaches incorporate psychological principles [4, 9, 10] and indeed the demonstrated benefits
82 of psychological interventions on performance variables pertinent to the strength and
83 conditioning discipline [3, 12-17] it is important to further ascertain what may prevent
84 strength and conditioning coaches from using such principles. The extent to which particular
85 psychological skills are employed has previously been suggested to be grounded in the
86 coaches’ level of experience, with lesser experienced coaches employing psychological
87 strategies less frequently than their more experienced counterparts [4]. Such reasons were
88 that the coaches developed their skills within their role rather than through any formal
89 instruction. This mirrors existing work within physiotherapy and sports coaching [18, 19]
90 and is evident within strength and conditioning in which experiential learning has been
91 demonstrated as a method by which coaches refined coaching styles and behaviors [11].

92

93 Despite the suggestion that experience accounts for variation in skill use, an interesting
94 observation was the imbalance between the frequency of skill usage and the perceived
95 importance of psychological skills. For example, self-confidence was deemed to be vital
96 attribute for athletes to possess within strength and conditioning, however, strategies to
97 enhance self-confidence were only moderately ranked in terms of frequency of use [4, 20].
98 Such a disparity between the frequencies of strategies usage despite the apparent importance
99 of incorporating such techniques is intriguing and warrants further research.

100

101 Previous work has merely offered insight into the quantifiable frequency of psychological
102 skill utilization within training and posed suggestions that the presence of role boundaries
103 and a lack of knowledge were potential limiting factors. Such barriers are, as yet, merely
104 hypothesized based on established literature from differing professional domains and require
105 further detailed exploration. Little attention has been afforded to the rationale surrounding
106 the extent to which psychological concepts are applied by strength and conditioning
107 specialists and only recently has emphasis been afforded to the perceived role of sport
108 psychology within strength and conditioning [10]. It is anticipated that the exploration of
109 reasons for strength and conditioning coaches not incorporating psychological concepts will
110 promote strategies to foster the development of such approaches within strength and
111 conditioning. The aim of the current research was to adopt a qualitative approach to explore
112 the potential barriers to the integration of psychological skills within strength and
113 conditioning with the intention to propose recommendations of methods to promote the use
114 of psychology within the strength and conditioning environment.

115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136

137 **METHOD**

138

139 **Experimental approach to the problem**

140

141 In order to answer the aims of the current research question an approach was adopted where
142 subjects' narratives were examined in detail prior to the amalgamation of key concepts
143 resonant across the sample to formulate resounding themes. The approach utilized semi-
144 structured interviews to provided narratives from the perspective of the strength and
145 conditioning coach. The narratives were transcribed verbatim and analyzed for key resonant
146 themes using interpretive phenomenological analysis [IPA: 21]. Such a method is applicable
147 when examining topics centered on lived experiences where standardized research
148 instruments may prevent the collection of relevant data [11].

149

150

151 IPA was an appropriate method used to examine the roles which may be implicit within the
152 narratives and omitted using alternative methodological approaches such as content
153 analysis. IPA [21] permits the exploration of the experiences of the strength and
154 conditioning coach which may only emerge at an implicit level and is preferential to other
155 approaches owing to the presumption the perceptions and consequently behaviors are shaped
156 via lived experiences [11]. Such an approach will allow the in depth exploration regarding
157 the perceptions which govern the intentions to employ psychological strategies within the
158 applied setting.

159

160 The use of IPA is well suited to the current research questions owing to the notion that lived
161 experiences of the coaches' account for the underpinning reasoning for the professional
162 practices adopted pertaining to sport psychology. Such an approach has previously been
163 effective in offering valuable insight into the roles and responsibilities of strength and

164 conditioning coaches [9, 10] whilst, as stated by Tod et al. [11], the use of qualitative
165 methods employing semi-structured interviews have proven successful in answering
166 psychology orientated research questions within strength and conditioning.

167 **Ethical approval**

168 Before commencing the study, the Institutional Review Board provided ethical approval for
169 the experimental procedures. Prior to participation all subjects received an invitation email
170 containing participant information including clear explanation of the potential benefits and
171 risks associated with the research, how the data would be handled, the dissemination of
172 findings, and voluntary nature of the study. An email contact was provided for the lead
173 investigator should any potential applicants request additional information.

174 **Subjects**

175 Eighteen subjects were recruited for interview, using convenience sampling drawn from a
176 previously obtained sample [4]. Additional snowball sampling [22] was used as a method to
177 enlist potential subjects [23, 24]. Subjects comprised 17 males and one female. 10 subjects
178 were working within the UK, 3 within the USA and 5 within Australia. Each was accredited
179 by either the National Strength and Conditioning Association (NSCA), the United Kingdom
180 Strength and Conditioning Association (UKSCA), the Australian Strength and Conditioning
181 Association (ASCA), or a combination of dual accreditation. The subjects provided a cross-
182 section of experience working as strength and conditioning coach, ranging from two years
183 to over 20 years within various sport disciplines including team and individual sports. All
184 subjects had experience working at a minimum of National level.

185 **Procedures**

186 All subjects were approached by email and provided informed consent. Interviews were
187 conducted at a mutually-agreed time and location with specific consideration of time zone

188 differences and typically lasted between 40-80 minutes. Interviews were conducted face-to-
189 face either in person or via video calls to prevent the location of the subjects becoming
190 barrier to data collection. Data were recorded using a digital voice recorder (Olympus, VN-
191 5500PC), and transcribed verbatim. Interviews were conducted over a four month period
192 from October to January.

193

194 The semi-structured interview schedule was composed and scrutinized by specialists from
195 the disciplines of psychology and strength and conditioning for content validity. The
196 questions explored the individuals' narrative of their experience being a strength and
197 conditioning coach with particular focus on the interactions between coach and athlete.
198 Following the guiding principles of IPA, to promote a fluid narrative from the perspective
199 of the subjects [21], questions were used to prompt discussion the questions were open ended
200 in nature to enable the strength and conditioning coaches to expand on points as deemed
201 appropriate. Examples of the questions included were: "How effective do you consider sport
202 psychology to be within strength and conditioning?"; "Are there any times when it
203 psychology has seemed ineffective?"; "Do you believe your athletes are receptive of
204 psychological support?"; "In your opinion, to what extent are psychological skills used in
205 strength and Conditioning practice? – (follow on probes) why do you think it has been
206 neglected in the past?"; "What are the obstacles to Strength and Conditioning practitioners
207 using psychology in their applied practice?" The questioning was open-ended to allow
208 elaboration around personal professional development and to promote the narrative of the
209 subjects.

210 **Statistical Analyses**

211 The analysis employed IPA following the recommendations of Smith [25] and was
212 conducted with NVivo 9 assistive software (QSR International Pty Ltd., Victoria, Australia)
213 to identify common themes.

214

215 The lead author transcribed all interviews verbatim. Adhering to IPA guidelines the
216 transcripts were read to become familiarized with the data and specific context of the data.
217 Each transcript was analyzed to highlight specific instances within the subjects' accounts.
218 During first stage analysis, Nvivo 9 assistive software (QSR International Pty Ltd., Victoria,
219 Australia) was used to extract pertinent notes from the narratives. Notes were then compiled
220 to form thematic emergences after which the themes were reviewed for confirmation within
221 the contexts outlined during the narrative. Thematic emergences were governed by what was
222 arising from the subjects' narratives. This procedure was repeated for the remaining
223 transcripts with an evolving 'master template' used to focus the analysis [6].

224

225 Formal coding of data was conducted in which text extracts were identified within each
226 narrative. To affirm the themes, codes were compared within themes to consider the extent
227 they relate in a meaningful way [11]. A theme was only considered when sufficient
228 similarity existed between codes with appropriate supporting quotes identified. In instances
229 where quotes failed to sufficiently evidence themes the theme was removed from analysis
230 [6]. In addition to reviewing the similarity of the codes in the formulation of themes,
231 relatedness in the themes resulted in higher order themes being developed. As a result,
232 numerous lower order themes sat within the higher order themes of *Internal Factors* and
233 *External Factors*.

234 **Validity and Reliability**

235 To increase the likelihood of credible findings triangulation was used. Triangulation
236 concerns the verification of results by the use of different researchers, different methods, or
237 different sources. In endeavouring to provide triangulation of sources, participant groups
238 were recruited from ranging international settings for instance the UK, the USA and
239 Australia. Thus data source triangulation was performed by which information obtained
240 from subjects from differing cultural and professional backgrounds evidences the extent to
241 which similar thematic emergences occurred across different backgrounds [11]. Audience
242 triangulation was used in which an experienced qualitative investigator reviewed selected
243 quotes to ensure all relevant themes were exposed and to prevent experiment bias [11].

244

245 Member checking involves presenting raw data to the subjects to validate the accurate
246 collection of data. Member checking, regarded as the most important method in the
247 demonstration of credible findings [26], can be progressed in elevating levels of detail
248 ranging from confirmation of raw text to presenting the subjects with the interpretation of
249 findings. The present study used member checking to validate the raw text and the
250 presentation of particular thematic emergences. Subjects confirmed the accuracy or the data
251 collection and were in agreement with the major thematic emergences.

252

253 Dependability is the ability of the findings to be repeated and consistent, confirmability is
254 the degree to which the research findings are unbiased and attributable to the research
255 subjects. The research audit is regarded as the prime method of demonstrating both
256 confirmability and dependability [26]. The research has adhered to consistent
257 methodological constraints as agreed to and governed by the Institutional Research Ethics

258 panel, this ensured that the method can be attributed to the research outcome and thus the
259 procedure can be repeated.

260

261 **RESULTS**

262 In exploring the reasons accounting for the underutilization of psychological strategies
263 within strength and conditioning, it was evident that the reasons could be attributed to either
264 internal, personally governed beliefs, or external, environmentally governed situations
265 (Figure 1).

266

267 **INSERT FIG. 1 HERE**

268

269

270 *Internal causes*

271 *Insufficient knowledge*

272 A prevalent theme was that the strength and conditioning coaches had insufficient
273 knowledge to implement psychological strategies. Sixty six percent of the interviewed
274 coaches indicated a perceived lack of knowledge limiting the use of psychological strategies.

275 It was interesting that there were prime reasons as to why insufficient knowledge could
276 prevent the utilization of psychological skills and strategies. Such reasons comprise a lack
277 of knowledge regarding the benefits of using psychology and a lack of understanding of how
278 psychology can be implemented.

279

280 A prevalent concept was that psychology skills were perceived as valuable within strength
281 and conditioning; however the coaches failed to have the requisite skill to integrate
282 appropriate psychological strategies.

283 *“Well education again. And because like I say I wouldn’t know how to*
284 *implement a lot of the techniques, or even where to start with it, so I think if I*
285 *did know what methods there were and how I could implement that into my*
286 *training or into that session” - Mike, three years experience as a strength and*
287 *conditioning coach, accredited by the NSCA.*

288
289 It is clear that the individual is aware of the importance of specific techniques and significant
290 psychological attributes such as mental toughness, however the individual suggests that
291 there is uncertainty *“even where to start with it”* and thus the foundational knowledge is
292 lacking to allow the coach to initiate strategies within the strength and conditioning setting.

293
294 An alternative mechanism through which knowledge governs the intentions to use
295 psychological strategies is regarding the perceived relevance of psychological strategies.

296 *“It could be that’s looking at it from my perspective. Other people might just be*
297 *ignorant to the fact that psychology is an important part, especially strong*
298 *minded people who don’t kind of need that psychological training to be positive*
299 *or to be in a good mind state. They can maybe tend to dismiss it and think why*
300 *can everybody not just do it, if you know what I mean. It might just be a bit of*
301 *ignorance and just dismissing the fact that it is important.” - Mike, three years*
302 *experience, NSCA.*

303
304 Such an example typifies the notion that there is insufficient confidence in the effectiveness
305 of psychology within the strength and conditioning community. Specifically, there are
306 individuals who may perceive psychology to be only effective for athletes who possess low
307 levels of psychological attributes or adopt maladaptive strategies [8, 27, 28]. Consequently,
308 it is apparent that, rather than the perception of an ineffectiveness, there may be an
309 underlying reluctance to label an athlete as weak through the use of regulatory techniques.

310

311 *Not relevant within training*

312 Relating to a lack of understanding there was the emphasis by particular individuals that
313 psychology was only useful within the competition setting and as a results strength and

314 conditioning coaches would not integrate such strategies in the strength and conditioning
315 setting.

316 *“I’d say I wouldn’t think it would transfer onto the pitch that much. Like I say,*
317 *I think it’s more the skill they need to be confident on the pitch whereas if you*
318 *can get all the physical attributes right within the training then that’ll become a*
319 *natural progression onto the pitch so they won’t have to think about too much.”-*
320 *Mike, three years experience, NSCA.*

321
322 An emphasis exists that self-regulatory techniques are effective within the competition
323 however do not serve an equitable purpose in the training environment. This perception is
324 problematic owing, not least to the benefits of using psychological interventions in training,
325 but also for benefits of developing skills in practice prior to transfer into competition [29].

326

327 *Perceived role requirements*

328 In addition to lacking knowledge and misperceptions concerning the application of
329 psychological strategies, a resounding theme was that the role requirements did not dictate
330 the need for strength and conditioning coaches to use psychological interventions.

331 *“Some of the qualifications that are out there for S and C coaches they are very*
332 *scientifically based and the psychology part of it is not in there at all” - Craig,*
333 *four years experience, UKSCA.*

334

335 Such an example typifies that it is not the responsibility of the strength and conditioning
336 coach to administer psychological techniques, a view mirrored in athletic training [30]. It is
337 possible that the perceived scientific underpinning of the strength and conditioning
338 discipline can result in being incompatible with psychological strategies especially relating
339 to the interpersonal skills noted by Tod et al. [11].

340

341 In relation to the role requirements there was evidence to suggest that the need for a
342 recognized qualification in psychology was required to utilize psychological strategies.

343 *“I’m not a recognised psychologist; I’m not a chartered psychologist so I*
344 *certainly wouldn’t want to advertise myself as being one. I think a lot of the*
345 *things I have learnt, the theoretical stuff, to kind of justify some of my work. Then*
346 *there are things that I have learnt that I would have liked to use at some stage.*
347 *[...] But as yet I can’t practice as a psychologist.” - Carl, seven years, UKSCA.*

348
349 Despite underpinning psychology knowledge there is a reluctance to employ psychological
350 strategies. Thus, in this instance, a perceived ethical line exists which can govern who is
351 qualified to administer such skills and who is unable to offer psychological input. Zizzi et
352 al. [31] previously stated that there are limited guidelines as to what psychological
353 interventions can be applied within coaching. Such ambiguity appears to be also evident
354 within the strength and conditioning discipline. It appears that there is a considerable amount
355 of caution stemming from the uncertainty of what practices are able to be offered by strength
356 and conditioning coaches and what requires specialist input from psychology titled
357 professionals.

358
359 The uncertainty of the inclusion of psychological strategies by strength and conditioning
360 coaches is emphasized:

361 *“No and that is my main view from a strength and conditioning accreditation*
362 *process if there was an element of knowledge of psychology within that would it*
363 *then kind of allow strength and conditioning coaches to think they are*
364 *[psychologists]?” - Carl, seven years, UKSCA.*

365
366 The perception of the blurred boundary between the disciplines of strength and conditioning
367 and psychology are resulting in strength and conditioning coaches demonstrating a
368 reluctance to incorporate psychological elements. This is due to the perceived danger of
369 adopting skills which Strength and conditioning coaches judge to sit outside the remit of the
370 vocation and crossing an ethical boundary without having sufficient recognized
371 endorsement to do so.

372

373 Furthermore, there is evidence to suggest that the promotion and integration of
374 psychological skills is not the responsibility of the strength and conditioning coach, rather
375 is the focus of other coaching staff.

376 *“Personally I think that you can and that could play an important role*
377 *personally however I kind of look the way practice is that I don’t really think it’s*
378 *my role to talk too much about the way an athlete competes because I think that*
379 *is the role of the sport coach. I wouldn’t kind of, I wouldn’t really feel*
380 *comfortable getting into too much of an in-depth conversation with the*
381 *psychology of the way that that athlete competes.”- David, 20 years experience,*
382 *NSCA and UKSCA.*

383
384 *“Practically in my experience no one has ever asked me to get involved in that*
385 *and I have taken that as implicit that they feel they have got that covered.” -*
386 *David, 20 years experience, NSCA and UKSCA.*

387

388 There is the belief that it is the responsibility of the technical/head coach and as such the
389 strength and conditioning specialist refrains from contributing to the psychological
390 strategies. This may suggest that the position of the strength and conditioning coach is
391 considered to be specialized and exclusively tasked with physical development, with little
392 incorporation of psychological strategies. Furthermore the quote also suggests that there is
393 a misunderstanding that psychological interventions are less applicable to practice than
394 competition and thus are the responsibility of those who work with the athletes in
395 competition.

396

397 *Difficulty in quantifying benefits*

398 A factor which appears to influence the intentions of the strength and conditioning coach to
399 use psychological strategies was the ability to observe the tangible benefits of employing
400 psychological strategies.

401 *“I think for me I tend to sway more to things I think like, incorrectly, that you*
402 *can measure. Things that I assume think are obvious like factual, as we can tell*
403 *are factual like physiology,, biomechanics, where you have got a clear sort of,*
404 *well right or wrong answer depending on what we know is actually true.*

405 *Psychology was something that I never really appreciated”- Jonathan, 3 years*
406 *experience, NSCA and UKSCA.*

407
408 It is apparent that the ease of quantifying the benefits of psychological interventions was a
409 determining factor in shaping intentions to use psychology, as has been observed in
410 Association Football [32]. Furthermore there is also the belief that psychological
411 interventions are unable to be measured using quantitative measures consequently difficulty
412 exists in adopting a qualitative approach to appraise the value of psychology. Thus,
413 psychology is be perceived as ineffective and not worthy of the strength and conditioning
414 coaches’ investment due to insufficient methods to demonstrate value.

415

416 *External Causes*

417 *Lack of time*

418 An often cited reason for not using psychological strategies was that there was insufficient
419 time available. Time demands have previously been identified as a prime influence in using
420 psychological interventions within sports coaching [33]. Ranging viewpoints emerged
421 concerning the limiting time factors.

422 *“Just time. If I had more time I would. I work with a few athletes; if I only had*
423 *one athlete it would be massive on my agenda. Because I work with lots it is*
424 *more difficult to prioritise the work load to do that research.”- Nigel, eight years*
425 *experience, UKSCA.*

426
427 This would suggest that time is a limiting factor and with increased available time there
428 would be more opportunity to incorporate psychological elements. Interestingly with
429 reference made to research, it would appear that rather than the time associated with
430 applying psychological techniques; it could be the limited time afforded to educational
431 practices regarding incorporating psychological interventions within practice.

432

433 *Authority over coaching practice*

434 An evident factor inhibiting the inclusion of psychological practices was the control that is
435 enforced by stakeholders and authoritative senior coaching staff.

436 *“It’s not until really the coach accepts what you’re doing as a positive that that*
437 *filters down to the players and they be a bit more compliant and a bit more*
438 *enthusiastic about the session [...] I know based on one meeting last week that*
439 *they’ve got ideas themselves of how they want things to be done that I don’t*
440 *necessarily agree with.” Jonathan, three years experience, NSCA and UKSCA.*

441

442 It is apparent that the head coach has the respect of the players regarding the integration of
443 training strategies and as such may prove a challenge for the inexperienced strength and
444 conditioning specialist to instigate their own ideas. The need for endorsement from the
445 senior coaching staff is apparent and as such provides an additional barrier should the
446 coaching staff or stakeholders be unreceptive towards psychology.

447 *“Just some of the senior coaches, I don’t know why I am sort of the new kid on*
448 *the block in that sort of organisation. I was just told that simply we are not going*
449 *to be going down that avenue with this group of players. They just solely saw*
450 *my role as a physical conditioning coach and it wasn’t going to be crossing any*
451 *other lines. Black and white; I was doing the conditioning and that was it.” -*
452 *Marcus, Five years experience, ASCA*

453

454 Conflict exists over the perceived role requirements of the strength and conditioning
455 specialist and the perceived requirements by senior staff. It is apparent that the strength and
456 conditioning coaches are prevented from applying key psychological techniques due to the
457 instructions of senior staff. As has been observed in English football [32], the concept of
458 trust and demonstrating the value of psychology to stakeholders is emerging as an important
459 factor which can govern the use of psychology within strength and conditioning practice.

460

461 *Athlete perceptions*

462 In addition to the reluctance of senior decision makers, the perceptions of the client athlete
463 posed a barrier to the incorporation of psychological strategies though which the athlete

464 must personally validate the application of psychological principles within their chosen
465 discipline [34].

466 *“It’s perception; it’s how it is perceived. Perceived as a classroom activity. And*
467 *athletes don’t like a classroom and certainly the psychological support that I*
468 *have seen has been simply that.” - Marvin, 10 years experience, UKSCA.*

469
470 Perceiving psychology as a theoretical exercise would appear to be negative with regard to
471 integrating the use of psychology within strength and conditioning. Thus, it would appear
472 important for any psychological interventions to be practically orientated and, assuming
473 requisite knowledge exists, would position the strength and conditioning coach well to
474 implement psychological interventions

475

476 It is possible that athletes’ may view psychology and psychological interventions as a threat,
477 and that there is a stigma associated with psychology which manifests in a reluctance to
478 engage in cognitive strategies.

479 *“I just think that a lot of people perceive it as a sign of weakness. That they*
480 *think there is something wrong inside their heads to be honest. It draws out*
481 *insecurities in people; you know it’s making yourself vulnerable. People don’t*
482 *like to be perceived as vulnerable.” -Marcus, five years experience, ASCA.*

483

484 *“[...] yeah like a shrink and that’s how it is perceived in sport. Definitely one*
485 *sport, football, springs to mind. It’s the only sport where players are chastised*
486 *for training and other players call them ‘busy’s’ so “oh busy you are, what are*
487 *you doing that for, your busy” and footballers like the idea, or it’s the culture,*
488 *that they can go onto the pitch, train alright but play on a Saturday and be dead*
489 *good.” - Nigel, eight years experience, UKSCA.*

490

491 The athletes’ negative perception towards sport psychology appears to be shaped by the
492 misconception that sport psychology is for athletes with problems [35, 36]. Equally, within
493 particular sports there may be cultural influences shaping misperceptions that athletes’
494 believe they are successful and do not require additional psychological techniques.

495 Consequently psychological interventions are perceived to be the reserve of the mentally
496 weak and synonymous with other mental health disciplines [35, 36].

497

498

499

500

501 **DISCUSSION**

502

503 The present study examined the factors which restrict the use of psychological techniques
504 from the perspective of a sample of strength and conditioning coaches. Factors which were
505 thought to account for the reasons why psychology is neglected consisted of both internal
506 and externally governed barriers. Internal factors including the coaches knowledge and
507 understanding of the application and benefits of using psychological interventions, and
508 perceived role responsibilities whilst external factors such as athlete receptivity and lacking
509 permission from senior staff members prevented the strength and conditioning coach from
510 employing psychological strategies.

511

512 Evidence suggested that there was a lack of knowledge of psychological strategies which
513 limited the applications. This comprised two strands; firstly an appreciation of the value of
514 psychology within strength and conditioning, but a naivety to the practical applications of
515 psychology and, secondly, a perceived ineffectiveness of psychology within strength and
516 conditioning. The lack of practical knowledge is reflective of earlier work [19] identifying
517 that 73% of sports coaches believed they had insufficient knowledge regarding the
518 application of sport psychology strategies. The perceived ineffectiveness of sport
519 psychology interventions delivered as part of strength and conditioning practice was a

520 pertinent theme and indeed this viewpoint is prevalent within sport. In particular there is the
521 misperception that psychology would only prove useful should the athlete have a ‘problem’
522 [8, 27, 28] and there is little appreciable difference between sport psychology and other
523 psychological disciplines [32].

524

525 It was evident that there were challenges associated with evaluating the effectiveness of
526 psychological interventions. As a consequence, psychological interventions within strength
527 and conditioning were perceived as ineffective by either the strength and conditioning coach
528 themselves or by the senior stakeholders who govern the professional practices of the
529 strength and conditioning coach. Comparable findings have been evidenced within
530 Association Football, in which the value of sport psychology was difficult to ascertain by
531 senior personnel owing to challenges in measuring tangible benefits [32].

532

533 The varying perceptions observed in the current research, which are indicative of either a
534 lack of knowledge of practical applications or an under-appreciation of the value of sport
535 psychology, is mirrored within the confounding results of wider sport psychology literature.
536 For instance research has evidenced the perceived lack of effectiveness of sport psychology
537 interventions [8, 27, 28, 32] yet, when exploring the component factors which shape an
538 individual’s attitude towards sport psychology, there is evidence that confidence in sport
539 psychology is high within the specific demographics of high school American football [37]
540 and American collegiate swimming [38]. This would suggest that within the specific
541 contexts, coaches exhibit positive perceptions towards the effectiveness of sport psychology.
542 Nevertheless the present research does indicate that there are two distinct knowledge-related
543 barriers areas which must addressed; primarily attitudes towards the effectiveness of sport
544 psychology and also subsequently the practical applications of sport psychology.

545

546 The confidence of the strength and conditioning coach towards the integration of
547 psychological strategies is vital, not least because the coach's confidence in psychological
548 interventions is the greatest predictor of intentions to employ such techniques [38]. It would
549 be presumed that confidence is fostered by positive previous experiences, and as such it
550 would prove beneficial for strength and conditioning coaches to have opportunities to
551 observe and apply supplementary psychological techniques within the remit of the
552 discipline, with emphasis given to measurable benefits [38].

553

554 Sports coaches with less experience have presented a reduced willingness towards
555 psychology than their more experienced peers [37] whilst the more experienced coaches,
556 afforded greater opportunities to experience the benefits of sport psychology, hold a positive
557 attitude towards it. This replicates previous investigations of the evolving role profile [11]
558 and comparing the frequency of psychological skill integration between different experience
559 levels of the strength and conditioning coaches [4]. Furthermore there is the perspective that
560 without exposure to psychology, inexperienced coaches are in a state of unconscious
561 incompetence through which they are unaware that they lack the specific required skills
562 [37]. Ultimately, conclusions of the present work and existing literature direct towards the
563 requirement for coaching staff to have more opportunities to observe and apply integrating
564 psychological strategies in practice with an emphasis on experiential learning.

565

566 Although not universal, there was the suggestion that psychology was not relevant within
567 the training environment and only applicable within the competition domain. Such a notion
568 is problematic not least because of the proposed importance of psychology within strength
569 and conditioning [3] but also because of the scientific rationale for the incorporation of

570 psychology within the training setting. For instance, applying psychological strategies
571 within both competition and practice, rather than exclusively in competition, has resulted in
572 observable benefits to competition and perceived athletic ability [29, 39].

573

574 An alternative proposal concerning the barriers to the application of sport psychology by
575 strength and conditioning coaches is the perception that it is not within the role responsibility
576 of the strength and conditioning professional and is the reserve of the psychology titled
577 professional. Such a viewpoint presented by a selection of the interviewees could be
578 considered problematic not least because as posed by the National Strength and
579 Conditioning Association, a facet of the strength and conditioning role is to integrate
580 psychological techniques within training [5]. Additionally, Gould et al. [40] emphasizes the
581 importance for coaches to be aware of interactions of physical and psychological
582 determinant of performance a perspective reflected in increasing emphasis on strength and
583 conditioning coaches proposing self-regulatory strategies within practice [3,4,9,10].

584

585 Frequent athlete contact places the strength and conditioning coach in an effective position
586 to provide psychological strategies should the requisite understanding of psychological
587 interventions be present as is observed in ranging disciplines [41-44]. Further support exists
588 with the observation that sports coaches are the main provider of psychological skills to
589 athletes [19] with athletes favoring psychological input from coaching staff rather than
590 psychology titled professionals [28]. Moreover barriers associated with employing sports
591 psychology titled professionals [28, 36, 45, 46] often results in the neglect of psychological
592 skills as part of the athlete's development should alternative providers not be available. It
593 should be noted that this paper does not serve to advocate that strength and conditioning
594 coaches replace titled sport psychologists - with legal and ethical connotations if they do -

595 rather should endeavor to adopt principles aligned with psychological skills training as
596 advocated by Mellalieu and Shearer [3].

597

598 The strength and conditioning coach may perceive that they do not have sufficient
599 knowledge to implement psychological strategies, however whilst the fact exists that
600 perceived knowledge and understanding is a barrier to sport psychology interventions, it is
601 also apparent that there is an ethical boundary which presents confusion of the
602 responsibilities of the strength and conditioning professional. Such a perception is supported
603 within athletic training when the athletic trainers deem that psychological input is outside
604 their professional remit [30]. Within the sport community questions have been posed relating
605 to the blurred ethical boundary and what actions are accessible for sports coaches and what
606 training or qualifications are necessary to enable professionals' to offer psychological
607 support [31, 47]. This is further exacerbated as limited guidelines address the application of
608 mental skills within coaching [31]. Clearly without sufficient knowledge and understanding,
609 negative outcomes may arise and impact on the likelihood of applying psychological
610 strategies. Indeed, previous exposure and experiences are a prime influence of athletes'
611 perceptions of psychology [48, 49]. It is therefore important that strength and conditioning
612 coaches are critical of their own competence in administering cognitive strategies as part of
613 training.

614

615 The use of psychology should be promoted by clarifying the location of the ethical
616 boundaries with clear guidance provided by accrediting bodies. It is encouraging that
617 reviews [3] aimed at the strength and condition coach suggest self-regulatory strategies such
618 as goal setting and self-talk are within the remit of the coach however previous research has
619 served to cast doubt on the clarity of the role and the incorporation of psychological

620 strategies with coaches adopting strategies akin to counselling practices [9]. It is therefore
621 apparent that greater clarity is needed within the profession regarding what practices exist
622 within, and outside, the remit of the strength and conditioning coach.

623

624 Thus far, predominantly internal factors have been discussed relevant to barriers to
625 implementing cognitive techniques within training. However there was evidence that within
626 the strength and conditioning domain, time availability is a predominant factor regulating
627 the application of psychological skills. There was the concept that there was insufficient
628 time to allow for the use of psychological skills despite the perceived importance of
629 psychology. Similar findings are observed within physiotherapy [6] and sports coaching
630 [33] and time restrictions are documented within strength and conditioning concerning the
631 addition of extra responsibilities to the already complex role [50]. It would appear that the
632 demanding role of the strength and conditioning professional results in the prioritization of
633 particular responsibilities over psychological interventions. Furthermore the concept of time
634 restrictions was presented as a reason for not employing a sports psychologist as this would
635 detract from time afforded to other training requirements as has been observed in previous
636 research [32, 51]. However such a perception that time as a barrier may be a manifestation
637 of a perception that psychology is not as effective and worthy of the time investment.
638 Although it may initially appear that time is the limiting factor, it is likely that there is a lack
639 of knowledge regarding integrating regulatory strategies within training sessions in a time-
640 effective manner. Such a proposition for the development of strength and conditioning
641 practice aligns with the suggestions of Wilding [52], in which athletics coaches appreciate
642 the value of applying such skills however lack the understanding of the mechanics of
643 integrating such skills within training sessions.

644

645 The authority over coaching practice presents an external barrier to the use of sport
646 psychology strategies by strength and conditioning coaches. There were instances where the
647 practice of the strength and conditioning coach was governed by senior coaches or directors,
648 and consequently the perceptions of senior colleagues appears to regulate the extent to which
649 strength and conditioning coaches integrate and apply psychological principles. Previous
650 research has examined the perception of stakeholders and attitudes towards psychology
651 consulting [27, 31, 32, 37, 38, 47]. Notwithstanding that research is focused on the barriers
652 towards the employment of sport psychology consultants, the barriers concerning the
653 perceptions of gatekeepers offer support to the present study which identifies the origin of
654 such a barriers towards sport psychology.

655

656 A lack of perceived efficacy of psychological interventions has been observed as one of the
657 greatest influences of gatekeepers' intentions to employ sport psychologists [38].
658 Furthermore stakeholders' misperceptions have been observed suggesting that psychology
659 is not relevant. Ravizza [27] noted the view existed that psychology is only useful should an
660 athlete appear vulnerable [32, 47] and consequently not universally applicable within
661 coaching. Similarly, there is the indication that psychology is common sense and not worthy
662 of integration within coaching [32, 51]. Evidently work is required to educate stakeholders
663 as to the benefits of psychology with a range of contexts, one of which, as evidenced in the
664 current investigation in strength and conditioning.

665

666 Sport psychology has previously been documented to be perceived as less important than
667 other performance-related disciplines [32, 47]. Thus, when prioritizing the duties of any
668 coaching staff it is likely that the integration of sport psychology would be neglected in favor
669 of other sub-disciplines and consequently guiding the emphasis to the strength and

670 conditioning coach away from integrating psychology techniques. Equally, the performance
671 indicator-driven approach which may be adopted by high-ranking gatekeepers presents
672 another problem with preventing strength coaches to use mental skills owing to the difficulty
673 in measuring observable benefits resulting from such interventions, as has previously been
674 observed in Association Football [32]. Consequently it is likely that increased value will be
675 placed on strategies with easily measurable and directly attributable outcomes.

676

677 The final prevalent barrier to the incorporation of psychology based strategies considers the
678 perception of athletes. The athlete's attitude is critical in influencing intentions to use, and
679 to adhere to, psychological strategies [49] and enabling the inclusion of psychology within
680 strength and conditioning. It is evident that within sport coaching there is a stigma attached
681 to the use of psychology. The present study would suggest that, whilst not universal,
682 negative attitudes still exist that consider sport psychology to be applicable only for athletes
683 with problems. The misconception prevails that sport psychology is synonymous with other
684 mental health professions, for example psychotherapy and clinical psychology [35, 36]. The
685 athletes perception of the discipline is important as stigma tolerance of athletes is widely
686 regarded as a limiting factor when considering the application of psychological skills [35,
687 37, 38, 53, 54]. Moreover fear of ridicule from peers has also been observed to negatively
688 influence athletes' intentions towards sport psychology [36]. Consequently it is likely that,
689 in particular instances, negative attitudes of athletes are likely to inhibit the effectiveness of
690 any interventions within strength and conditioning deemed to be psychological in nature and
691 result in a reluctance of the strength and conditioning coach in implementing such
692 techniques.

693

694 The results of the present study offer an important insight into the experiences of strength
695 and conditioning coaches regarding factors preventing the incorporation of psychological
696 strategies as part of applied practice. Nevertheless it is recognized that, despite large
697 agreement in the accounts of the subjects indicative of generalizable findings, it is not the
698 objective of qualitative methods to provide truly generalizable findings. Furthermore,
699 although the sample originated from a population of accredited professionals, there is an
700 underrepresentation of female coaches. Nevertheless there was no notably different
701 responses between genders. An additional consideration in the timing of the interviews
702 whereby factors such as time demands, fatigue or competitive stressors could impact the
703 findings. However the subjects accounts were inclusive of examples from throughout the
704 season and indeed the subjects from ranging sports would be working to different
705 competitive cycles and no reference was made to the impact of seasonal timing. This study
706 adds to a growing body of work examining facets of practice from the perspective of the
707 strength and conditioning coach [9, 10, 11] and serves to highlight salient issues which
708 govern applied strength and conditioning practice.

709

710 **PRACTICAL APPLICATIONS**

711 Concerning the increasing demand for psychological skills training [55] and the unrealistic
712 view that qualified psychology-titled professions provide psychological skills in their
713 entirety [56], with appropriate role clarification, other support staff could be involved with
714 teaching of psychological skills [31]. This is evident within athletic training [7, 42, 43, 57,
715 58], physiotherapy [6, 18, 59-62], and sport coaching [63]. This would be especially
716 important concerning the financial and logistical barriers to employing a psychologist [32,
717 51] resulting in athletes being unable to receive the professional services of a sport
718 psychology consultant. It is clear that, with appropriate role descriptors and boundaries

719 positioned, strength and conditioning professionals can provide a valuable service to the
720 athletes they support.

721

722 In order to facilitate the strength and conditioning professional in employing psychological
723 strategies it would be well advised to promote educational workshops regarding the use of
724 psychological strategies specifically tailored to the strength and conditioning domain. These
725 should specifically focus on instructing the athlete in self-regulatory strategies such as goal
726 setting, mental imagery, self-talk, of which there is empirical evidence of acute
727 improvements made to strength and conditioning related exercises [3].

728

729 Strength and conditioning coaches cited a lack of confidence in applying psychological
730 strategies as part of strength and conditioning practices. As a result, greater professional
731 links are needed between sport psychologists and strength and conditioning coaches.
732 Twofold benefits will arise that coached gain an understanding of the application of
733 psychological strategies within practice and psychologists gain an understanding of the
734 complexities of the role of the strength and conditioning coach. Furthermore, it has been
735 noted that strength and conditioning coaches develop skills experientially [4, 11] with fellow
736 coaches providing a valuable educational resource [11]. Thus strength and conditioning
737 coaches would be advised to seek mentoring opportunities within the profession to share
738 good practice.

739

740 Greater clarity is required concerning the role responsibilities of the strength and
741 conditioning coach with regard to the use of psychological techniques. Whilst this paper
742 does not serve to advocate strength and conditioning coaches taking the place of the sport
743 psychologists particular techniques are within the remit of strength and conditioning coaches

744 and as such additional clarity could be provided within the professional standards to provide
745 clarity, and reassurance, regarding what interventions are applicable to the practice of the
746 strength coach. Furthermore, efforts to promote the use of psychology in strength and
747 conditioning should address external barriers where by educational programs are aimed at
748 club and organization gate keepers regarding the benefits of psychology and added value the
749 physiologically minded and educated strength and conditioning coach can bring.

750

751 REFERENCES

- 752 1. Holloway, J.B., *Weight room psychology: Selected psychological aspects of physical*
753 *strength and conditioning, Part 2.* Strength & Conditioning Journal, 1995. **17**(1): p.
754 52-60.
- 755 2. Holloway, J.B., *Weight room psychology: Selected psychological aspects of physical*
756 *strength and conditioning.* Strength & Conditioning Journal, 1994. **16**(6): p. 56-61.
- 757 3. Mellalieu, S. and D. Shearer, *Mental skills training in strength and conditioning, in*
758 *The psychology of strength and conditioning, D. Tod and D. Lavelle, Editors.* 2012,
759 Routledge: Oxon, UK. p. 1-39.
- 760 4. Radcliffe, J.N., P. Comfort, and T. Fawcett, *The perception of psychology and the*
761 *frequency of psychological strategies used by strength and conditioning*
762 *practitioners.* The Journal of Strength & Conditioning Research, 2013. **27**(4): p.
763 1136-1146.
- 764 5. National Strength and Conditioning Association, *National Strength and*
765 *Conditioning Association: Strength and Conditioning Professional Standards and*
766 *Guidelines.* Strength & Conditioning Journal, 2009. **31**(5): p. 14-38.
- 767 6. Arvinen-Barrow, M., et al., *UK chartered physiotherapists' personal experiences in*
768 *using psychological interventions with injured athletes: An Interpretative*
769 *Phenomenological Analysis.* Psychology of Sport and Exercise, 2010. **11**(1): p. 58-
770 66.
- 771 7. Ford, I.W. and S. Gordon, *Perspectives of sport trainers and athletic therapists on*
772 *the psychological content of their practice and training.* Journal of Sport
773 Rehabilitation, 1998. **7**(2): p. 79-94.
- 774 8. Maniar, S.D., et al., *Student-athlete preferences in seeking help when confronted*
775 *with sport performance problems.* Sport Psychologist, 2001. **15**(2): p. 205-223.
- 776 9. Radcliffe, J.N., P. Comfort, and T. Fawcett, *Psychological Strategies Included by*
777 *Strength and Conditioning Coaches in Applied Strength and Conditioning.* The
778 Journal of Strength & Conditioning Research, 2015. **29**(9): p. 2641-54.
- 779 10. Radcliffe, J.N., P. Comfort, and T. Fawcett, *The Perceived Psychological*
780 *Responsibilities Of A Strength And Conditioning Coach.* The Journal of Strength &
781 Conditioning Research, In Press. **Publish Ahead of Print.**
- 782 11. Tod, D.A., K.A. Bond, and D. Lavallee, *Professional development themes in*
783 *strength and conditioning coaches.* The Journal of Strength & Conditioning
784 Research, 2012. **26**(3): p. 851-860.

- 785 12. Tod, D.A., F. Iredale, and N. Gill, '*Psyching-up*' and muscular force production.
786 Sports Medicine, 2003. **33**(1): p. 47-58.
- 787 13. Baker, D., *The effectiveness of goal setting in the strength and power training*
788 *process*. Strength & Conditioning Coach, 2000. **8**(1): p. 3-8.
- 789 14. Tod, D.A. and M. McGuigan, *Maximizing strength training through goal setting*.
790 Strength & Conditioning Journal, 2001. **23**(4): p. 22.
- 791 15. Gilson, T.A., *Outcomes of confidence in sport training settings*. Strength &
792 Conditioning Journal, 2010. **32**(5): p. 91-96
- 793 16. Weinberg, R., L. Bruya, and A. Jackson, *The effects of goal proximity and goal*
794 *specificity on endurance performance*. Journal of Sport Psychology, 1985. **7**(3): p.
795 296-305.
- 796 17. Lebon, F., C. Collet, and A. Guillot, *Benefits of motor imagery training on muscle*
797 *strength*. Journal of Strength and Conditioning Research, 2010. **24**(6): p. 1680-1687.
- 798 18. Jevon, S.M. and L.H. Johnston, *The perceived knowledge and attitudes of governing*
799 *body chartered physiotherapists towards the psychological aspects of rehabilitation*.
800 Physical Therapy in Sport, 2003. **4**(2): p. 74-81.
- 801 19. Sullivan, J. and K.P. Hodge, *A survey of coaches and athletes about sport psychology*
802 *in New Zealand*. Sport Psychologist, 1991. **5**(2): p. 140-151.
- 803 20. Radcliffe, J., P. Comfort, and T. Fawcett. *The frequency of Psychological Strategies*
804 *used by UK Strength and Conditioning Practitioners*. in *The 2012 International*
805 *Convention on Science, Education and Medicine in Sport*. 2012. Glasgow, UK.
- 806 21. Smith, J.A., *Reflecting on the development of interpretative phenomenological*
807 *analysis and its contribution to qualitative research in psychology*. Qualitative
808 Research in Psychology, 2004. **1**(1): p. 39-54.
- 809 22. Patton, M.Q., *Qualitative research & evaluation methods*. 3rd ed. 2002, Thousand
810 Oaks,
811 CA: Sage.
- 812 23. Johnson, M.B., et al., *A comparison of the developmental experiences of elite and*
813 *sub-elite swimmers: similar developmental histories can lead to differences in*
814 *performance level*. Sport Education and Society, 2008. **13**(4): p. 453-475.
- 815 24. Friesen, A. and T. Orlick, *A Qualitative Analysis of Holistic Sport Psychology*
816 *Consultants' Professional Philosophies*. Sport Psychologist, 2010. **24**(2): p. 227-
817 244.
- 818 25. Smith, J.A. and V. Eatough, *Interpretative Phenomenological Analysis*, in *Research*
819 *methods in Psychology*, G.M. Breakwell, J.A. Smith, and D.B. Wright, Editors.
820 2012, Sage Publications: London.
- 821 26. Lincoln, Y.S. and E.G. Guba, *Naturalistic Inquiry*. 1985, London: SAGE
822 Publications.
- 823 27. Ravizza, K., *Gaining entry with athletic personnel for season-long consulting*. Sport
824 Psychologist, 1988. **2**(3): p. 243-254.
- 825 28. Van Raalte, J.L., et al., *NCAA Division II College Football Players' Perceptions of*
826 *an Athlete Who Consults a Sport Psychologist*. Journal of Sport & Exercise
827 Psychology, 1992. **14**(3): p. 273-282.
- 828 29. Thomas, P.R., S.M. Murphy, and L. Hardy, *Test of performance strategies:*
829 *Development and preliminary validation of a comprehensive measure of athletes'*
830 *psychological skills*. Journal of Sports Sciences, 1999. **17**(9): p. 697-711.
- 831 30. Stiller-Ostrowski, J.L. and J.A. Ostrowski, *Recently certified athletic trainers'*
832 *undergraduate educational preparation in psychosocial intervention and referral*.
833 Journal of Athletic Training, 2009. **44**(1): p. 67-75.

- 834 31. Zizzi, S.J., et al., *Establishing a hierarchy of psychological skills: coaches', athletic*
835 *trainers', and psychologists' uses and perceptions of psychological skills training.*
836 *Athletic Insight: The Online Journal of Sport Psychology*, 2009. **11**(2): p.
837 unpaginated.
- 838 32. Pain, M.A. and C.G. Harwood, *Knowledge and perceptions of sport psychology*
839 *within English soccer.* *Journal of Sports Sciences*, 2004. **22**: p. 813-826.
- 840 33. Creasy, J.W., et al., *Are You Coaching Mental Skills? Why Not?* *Virginia Journal*,
841 2009. **30**(2): p. 13-14.
- 842 34. Brooks, J.E. and S.J. Bull, *Perceptions of the sport psychologist by female university*
843 *athletes.* *Journal of Sports Sciences*, 2001. **17**(3): p. 205 - 212.
- 844 35. Gee, C.J., *How does sport psychology actually improve athletic performance? A*
845 *framework to facilitate athletes' and coaches' understanding.* *Behavior*
846 *Modification*, 2010. **34**(5): p. 386-402.
- 847 36. Linder, D.E., et al., *A negative halo for athletes who consult sport psychologists:*
848 *Replication and extension.* *Journal of Sport & Exercise Psychology*, 1991. **13**(2): p.
849 133-148.
- 850 37. Zakrajsek, R.A., S.B. Martin, and S.J. Zizzi, *American high school football coaches'*
851 *attitudes toward sport psychology consultation and intentions to use sport*
852 *psychology services.* *International Journal of Sports Science & Coaching*, 2011. **6**(3):
853 p. 461-478.
- 854 38. Zakrajsek, R.A. and S.J. Zizzi, *Factors influenceing track and swimming coaches'*
855 *intentions to use sport psychology services* *Athletic Insight*, 2007. **19**: p. 1-21.
- 856 39. Frey, M., P.L. Laguna, and K. Ravizza, *Collegiate athletes' mental skill use and*
857 *perceptions of success: an exploration of the practice and competition settings.*
858 *Journal of Applied Sport Psychology*, 2003. **15**(2): p. 115-128.
- 859 40. Gould, D., et al., *Psychological foundations of coaching: similarities and differences*
860 *among intercollegiate wrestling coaches.* *The Sport Psychologist*, 1987. **1**: p. 293-
861 308.
- 862 41. Pearson, L. and G. Jones, *Emotional effects of sports injuries: Implications for*
863 *physiotherapists.* *Physiotherapy*, 1992. **78**(10): p. 762-770.
- 864 42. Wiese, D.M. and M.R. Weiss, *Psychological rehabilitation and physical injury:*
865 *Implications for the sports medicine team.* *Sport Psychologist*, 1987. **1**(4): p. 318-
866 330.
- 867 43. Wiese, D.M., M.R. Weiss, and D.P. Yukelson, *Sport psychology in the training*
868 *room: A survey of athletic trainers.* *Sport Psychologist*, 1991. **5**(1): p. 15-24.
- 869 44. Gordon, S., M. Potter, and I.W. Ford, *Toward a psychoeducational curriculum for*
870 *training sport-injury rehabilitation personnel.* *Journal of Applied Sport Psychology*,
871 1998. **10**(1): p. 140-156.
- 872 45. Van Raalte, J.L., et al., *Perceptions of sport-oriented professionals: A*
873 *multidimensional scaling analysis.* *The Sport Psychologist*, 1990. **4**: p. 228-234.
- 874 46. Van Raalte, J.L., et al., *British athletes' perceptions of sport and mental health*
875 *practitioners.* *Journal of Applied Sport Psychology*, 1996. **8**(1): p. 102-108.
- 876 47. Wilson, K.A., et al., *College athletic directors' perceptions of sport psychology*
877 *consulting.* *Sport Psychologist*, 2009. **23**(3): p. 405-424.
- 878 48. Anderson, A.G., et al., *New Zealand athletes' attitudes towards seeking sport*
879 *psychology consultation.* *New Zealand Journal of Psychology*, 2004. **33**(3): p. 129-
880 136.
- 881 49. Martin, S.B., et al., *Attitudes toward sport psychology consulting of adult athletes*
882 *from the United States, United Kingdom, and Germany.* *International Journal of*
883 *Sport and Exercise Psychology*, 2004. **2**(2): p. 146-160.

- 884 50. Massey, C.D., et al., *An analysis of the job of strength and conditioning coach for*
885 *football at the division II Level*. The Journal of Strength & Conditioning Research,
886 2009. **23**(9): p. 2493-2499.
- 887 51. Kremer, P.J. and D.B. Marchant, *Reflections and considerations of providing sport*
888 *psychology services with professional football players.*, in *Science and Football IV*,
889 W. Spinks, Editor. 2002, Routledge: London. p. 294-299.
- 890 52. Wilding, A., *Perceptions of sport psychology within track and field athletes*, in *The*
891 *Sport and Exercise Scientist*. 2009, Mercer Print: Accrington, UK. p. 12-13.
- 892 53. Martin, S.B., *High school and college athletes' attitudes toward sport psychology*
893 *consulting*. Journal of Applied Sport Psychology, 2005. **17**(2): p. 127-139.
- 894 54. Wrisberg, C.A., et al., *NCAA Division-I student-athletes' receptivity to mental skills*
895 *training by sport psychology consultants*. Sport Psychologist, 2009. **23**(4): p. 470-
896 486.
- 897 55. Weinberg, R.S. and D. Gould, *Foundations of Sport and Exercise Psychology*. 2010:
898 Human Kinetics.
- 899 56. Danish, S.J. and B. Hale, *Toward an understanding of the practice of sport*
900 *psychology*. Journal of Sport Psychology, 1981. **3**: p. 90-99.
- 901 57. Brewer, B.W., et al., *Perceptions of psychological interventions in the context of*
902 *sport injury rehabilitation*. Sport Psychologist, 1994. **8**(2): p. 176-188.
- 903 58. Cramer, J.L. and F.M. Perna, *Psychology/Counselling: A universal Competency in*
904 *Athletic Training* Journal of Athletic Training, 2000. **35**(4): p. 458-465.
- 905 59. Arvinen-Barrow, M., et al., *Views of chartered physiotherapists on the psychological*
906 *content of their practice: A follow-up survey in the UK*. Journal of Sport
907 Rehabilitation, 2007. **16**(2): p. 111-121.
- 908 60. Francis, S.R., M.B. Andersen, and P. Maley, *Physiotherapists' and male*
909 *professional athletes' views on psychological skills for rehabilitation*. Journal of
910 Science and Medicine in Sport, 2000. **3**(1): p. 17-29.
- 911 61. Hamson-Utley, J.J., S. Martin, and J. Walters, *Athletic trainers' and physical*
912 *therapists' perceptions of the effectiveness of psychological skills within sport injury*
913 *rehabilitation programs*. Journal of Athletic Training, 2008. **43**(3): p. 258-264.
- 914 62. Hemmings, B. and L. Povey, *Views of chartered physiotherapists on the*
915 *psychological content of their practice: a preliminary study in the United Kingdom*.
916 British Journal of Sports Medicine, 2002. **36**(1): p. 61-64.
- 917 63. Gould, D., K. Dieffenbach, and A. Moffett, *Psychological characteristics and their*
918 *development in Olympic champions*. Journal of Applied Sport Psychology, 2002.
919 **14**(3): p. 172-204.
920

921

922

923

924

925

926

927

928

929

930

931

932

Figure 1 Thematic emergences depicting the most prevalent resonant themes indicated via size categorised into internal and external factors.