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Where is the evidence in our sport psychology practice? A UK perspective on the
underpinnings of action

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Abstract

Practitioners advocate the importance to engage in evidence-based practice at the forefront of issues regarding the provision of applied sport psychology. Accordingly, the present study sought to contextualize the process of theory-research-practice. Specifically, four attentional-based techniques established within the sport psychology literature were depicted as applied scenarios and presented as a survey task. Experienced UK-based practitioners ($n = 14$) and individuals currently undergoing training ($n = 14$) were recruited to ascertain their theoretical and mechanistic knowledge, and whether these techniques were being utilized in the applied environment. Results suggested that the application of the techniques, in addition to the theoretical, and mechanistic knowledge may decrease from the trainee to experienced practitioner. The study highlights the need for an increase in research designed to be impactful in the applied setting, and addressing the needs of sport psychology practitioners, if our discipline is to advance and remain as evidence-based.

Keywords: *Evidence-based practice, applied sport psychology, attentional techniques, survey task*

What Do They Know? Exploring the Theoretical Grounding of Applied Practice

Evidence-based practice “involves the conscientious, explicit, and judicious use of the best available research evidence to inform each stage of decision-making and service delivery” (Dozois et al., 2014, p.155). Within the field of sport psychology, practitioners adopting an evidence-based approach follow a working model of theory-research-practice. This is an example of translational research, which involves the application of scientific theories, constructs, research findings, and intervention techniques across psychological domains (Smith & Smoll, 2011). This assertion that applied sport psychology is based on scientific principles is embedded in our codes of ethics, standards for professional conduct, and professional training accreditation criteria (e.g., American Psychological Association (APA); Association for Applied Sport Psychology (AASP); British Association of Sport and Exercise Sciences (BASES); British Psychological Society (BPS)). However, while the principal goals of applied sport psychology are to generate knowledge based on scientifically valid evidence and apply this knowledge to the optimal improvement of performance, the relation between the profession of applied and science psychology has turned out to be far from straightforward.

Firstly, the somewhat vague definitions of what evidence-based practice entails, “potentially enables all psychologists to characterize their professional services as being evidence-based” (Drapeau & Hunsley, 2014, p.146). Secondly, although psychologists are likely to agree that practice should be based on science (see Gardner, 2009; Moore, 2007), there has been active debate about several facets, including the identity of psychologists as scientist-practitioners; the optimal extent to which science can or should inform practice; innovative ways of better integrating research and practice; and strategies for synthesizing and disseminating research findings. Evidence-based practice should therefore rely, first and foremost, “on research findings published in the peer-reviewed scientific literature and

provide a hierarchy of evidence to help psychologists determine to what extent an intervention is evidence-based” (Dozois et al., 2014, p.155).

Specifically in relation to advising elite performers on the allocation of their thought processes, Winter and Collins (2014) sought to ascertain a contextualized perspective of established sport psychologists’ subjective reasoning underpinning their practices. One superordinate theme to emerge from the study was the literature underpinning professional practice. As supported by Gardner (2009), the development and acceptance of any scientific discipline requires an ever expanding and maturing empirical base. Furthermore, and as previously discussed, it is seen as fundamental to engage in evidence-based practice at the forefront of issues regarding the provision of applied sport psychology (Cropley, Hanton, Miles, & Niven, 2010; Moore, 2007). This notion was potentially challenged however, when noting the views expressed by the experienced practitioners in the Winter and Collins study. Specifically, dissatisfaction with the usefulness of the literature was articulated, resulting in some experienced practitioners stating that they made only limited use of sport psychology research to inform practice. Offering potential explanations for these findings, researchers have highlighted a clear differentiation between the aims of sport psychologists who wish to practice or apply their specialization, from that of research specialists, resulting in distinctly different types of knowledge being generated (Collins, 2008; Collins & Kamin, 2012; Silva, Conroy, & Zizzi, 1999). Furthermore, a consistent trend has been noted toward the diminishing durability of knowledge across the various specialties within professional psychology (Neimeyer, Taylor, & Rozensky, 2012; Neimeyer, Taylor, Rozensky, & Cox, 2014; Wise et al., 2010).

In this regard, epistemology is the branch of philosophy concerned with the nature and scope of knowledge. It is concerned with answering the questions of what is knowledge, how is it acquired, and how do we know what we know (Klein, 2011; Luper, 2004). The

recognition that evidence-based practice is important for allowing sport psychologists to make informed decisions (Gardner & Moore, 2006) advocates the practitioner's ability to enhance the accuracy and validity of his or her applied practice through professional judgment and decision-making (PJDM, Martindale & Collins, 2005). Epistemology is therefore important because it is fundamental to how we think and, without the ability to understand how we acquire and develop knowledge, we have no coherent path on which to base our thinking (Grecic & Collins, 2013). The individual practitioner must, therefore, be able to reason action that can be defended discursively in argument and justified as morally appropriate to the particular circumstances in which it was taken. In short, careful consideration of the whys and why nots of an action is crucial for the professional practice of applied sport psychology (cf. Martindale & Collins, 2010, 2013).

Regarding professional practice, research on attention is one of the fastest growing fields in cognitive psychology (Posner & Rothbart, 2007). Accordingly, attentional research or the scientific study of mental processes in elite performers is central to cognitive sport psychology, because the ability to exert mental effort effectively is vital for optimal athletic performance (Moran, 2009). Within the realm of performance sport, appropriate self-directed thought processes prior to and during task execution have been shown to make a significant difference to the level of performance attained (Abernethy, Maxwell, Jackson, & Masters, 2007; Singer, Lidor, & Cauraugh, 1993). Nevertheless, there is still a great deal of confusion about the nature of and cognitive mechanisms underlying attention (Winter, MacPherson, & Collins, 2014). Understanding and explaining the mechanisms, cognitive processes, and self-regulatory strategies that enable the acquisition and proficient execution of skills is, therefore, fundamental for the evidence-based practitioner (Singer, 2000).

Over the last several decades, a multitude of studies have examined the most common interventions and differing approaches to the attentional processes underpinning skilled

performance. Traditionally, the approach from the sport psychology literature has advocated the provision of mental skills training (MST; e.g., Frey, Laguna, & Ravizza, 2003; Wrisberg, Simpson, Loberg, Withycombe, & Reed, 2009). Implementing this approach requires the allocation of appropriate cognitive-behavioral techniques that can aid the right thoughts tailored to preparation and optimal performance (Cotterill, 2011; Weinberg, 2008). As opposed to developing conscious thoughts related to performance (Moran, 2009; Winter & Collins, 2013) researchers have also determined the cognitive techniques that underlie unconscious processing (e.g., Kinrade, Jackson, & Ashford, 2010; Lam, Maxwell, & Masters, 2010). However, notwithstanding whether the direction of conscious thoughts should be task-related or promote automaticity through unconscious processing, these differing stances represent the cognitive-based techniques available in our evidence-based literature.

A characteristic of the applied sport psychology profession therefore relates to the attentional strategies and techniques grounded upon firm theoretical and research findings (Smith & Smoll, 2011; Winter & Collins, 2013); hence the design of this investigation. Through reviewing contemporary theory and research findings focused on the allocation of attentional resources in performers, strategies were selected to be both applicable to an ecologically valid environment and which encouraged individuals to focus on appropriate information within performance sport (Bennett, 2000). Specifically, four techniques grounded in theoretical underpinning and well established within the sport psychology literature were chosen. We were primarily interested in determining whether these techniques, prominent in the sport psychology literature, are being utilized by practitioners and hence transferred to the applied environment. Secondly, and reflecting earlier stated concerns on the impact of research on practice, to ascertain sport psychologists' knowledge regarding the theoretical grounding and mechanistic underpinning of these applied practice techniques. The final aim was to identify whether any differences exist between those

individuals currently training in the profession, compared to practitioners already established in the field.

The Survey

Participants

Following institutional ethical approval, and informed consent, 14 experienced British applied sport psychologists were initially recruited to participate in this study. The sample comprised seven males (age: $M = 43.86$ years, $SD = 5.55$ years) and seven females (age: $M = 40.43$ years, $SD = 6.47$ years). The participants' applied experiences ranged from working full-time with elite performers via an institutional body or their own private consultancy practices, through to consulting with a range of different sports alongside their academic positions within higher education institutions. Collectively, participants reported having a mean of 18 years' experience as accredited practitioners ($SD = 5.02$ years). All were accredited initially through BASES, while 12 were now also BPS chartered psychologists. Furthermore, all participants were registered as practicing sport and exercise psychologists with the Health and Care Professions Council (HCPC), the UK organization which governs standards of professional practice in this area.

Additionally, 14 individuals currently undergoing training in the profession of applied sport psychology were recruited to participate in this study. The sample comprised seven males (age: $M = 32.86$ years, $SD = 10.89$ years) and seven females (age: $M = 24.86$ years, $SD = 1.57$ years). The trainee participants were currently engaged in supervised experience through BASES, or the BPS stage two training. Both these organizations offer training programmes that result in, respectively, accreditation as a sport and exercise scientist, or chartered status in sport and exercise psychology. The BASES route is designed for those individuals who have completed a BASES endorsed undergraduate degree in sport science, while the BPS route is for those individuals who have gained a psychology-accredited

undergraduate degree before progressing onto a MSc programme in sport and exercise psychology. Following completion of the masters' degree, both organizations offer independent supervised experience pathways whereby the trainee practitioner or probationary sport and exercise psychologist, complete a self-directed supervisor-supported programme of work designed to fulfill further knowledge and practical competencies.

Survey Task

Four psychological techniques were adopted from the sport psychology literature as the basis for the survey task and depicted as applied scenarios. These were as follows: (a) a tennis player is drilled to say 'ONE' at the exact moment the ball bounces, and 'TWO' when the ball makes contact with the strings (cf. Gallwey, 1997; Jenkins, 2008 – inner game); (b) an athlete utilizes the word 'Boom' when performing a standing vertical jump (cf. Dugdale & Eklund, 2002; Rushall, Hall, Roux, Sasseville, & Rushall, 1988 – mood words); (c) table tennis performers are instructed to pretend to draw a right-angled triangle with the bat. They are then instructed, to impart topspin to the ball, they should strike the ball while bringing the bat up the hypotenuse of the triangle (cf. Berry & Broadbent, 1984; Liao & Masters, 2001 – analogy learning); (d) a performer uses a swing word or sound (e.g. 'swoosh') which matches the action when driving in golf (cf. Jeannerod, 1999; MacPherson, Collins, & Obhi, 2009 - rhythmicity).

Procedure

Prior to data collection, a pilot survey (Gratton & Jones, 2003) was conducted with a BASES accredited practitioner. This allowed for revision, where necessary, of the format to the survey and instructions provided to participants. It was deemed beneficial for participants to receive verbal instructions, for clarity purposes, in addition to the written instructions provided for completing the survey. Secondly, the pilot survey enabled any systematic bias to be detected, whereby the participant was questioned in relation to the difficulty of the

tasks. It was reported that no systematic bias was perceived across the presented applied scenarios.

Following the completion of informed consent, convenient times were agreed for the participants to complete the surveys. All participants followed a standardized procedure, prior to an initial introductory discussion being held. For each of the four applied scenarios, participants were required to answer the following three questions: (a) is this technique something you would use within your applied practice? (b) could you state the theoretical underpinning to the technique? (c) can you describe the underlying mechanism? In other words, why/how this technique may work? Order was balanced across participants to counter any priming effects from one applied scenario to another. On completion of the survey, participants were thanked for their participation.

Data Analysis

Responses to the three questions posed in the survey were analyzed as follows. Question one was depicted as the percentage of trainee and experienced practitioners who stated they would use each of the four psychological techniques within their applied practice. Respective to the accuracy of respondents' answers regarding the theoretical and underlying mechanism to each of the techniques (questions 2 and 3), a scoring system was derived for analyzing these remaining two questions. A scale (0-3) was used with the following descriptors: (0) wrong answer, nowhere near; (1) tenable answer, wrong idea; (2) getting there, missed some elements; (3) perfect answer. As this scale was as ordinal level of measurement, the Mann-Whitney U test was used to compare the responses between the trainee and experienced practitioners. The Mann-Whitney U test is a nonparametric test used to discover the difference between two groups, and is the equivalent to an independent t test (Vincent & Weir, 2012).

Inter-Rater Reliability

To establish objectivity, two individuals assessed the completed surveys from both the trainee and experienced practitioner sample. There was a >95% agreement when analyzing the accuracy of respondents' answers regarding the theoretical and underlying mechanism to each of the techniques (Wilson & Batterham, 1999).

Results

In response to the first question from the survey, Table 1 depicts the percentage of trainee and experienced practitioners who stated they would use each of the four psychological techniques within their applied practice.

A higher percentage of trainee practitioners advocated they would use each of the attentional-based techniques within their applied practice, compared to the experienced practitioners. This equated to approximately half the number of experienced practitioners stating they would use the first three psychological techniques, as contrasted to the trainee practitioners. Conversely, this trend differed with the rhythmicity technique, demonstrating a similar application to practice by the experienced sport psychologists and the trainee sample. It was also noted that the analogy learning technique received the lowest responses for use, from both the trainee and experienced practitioners.

With regards to the theoretical and mechanistic underpinning responses to the attentional-based techniques, the mean values from the respective scoring scale are presented in Table 2 and 3. The Mann-Whitney U test revealed that the only significant differences were found between the two groups for the mood words scenario: an athlete utilizes the word 'Boom' when performing a standing vertical jump (cf. Dugdale & Eklund, 2002; Rushall et al., 1988). Responses differed between the trainee and experienced practitioners, regarding both the theoretical ($Z = -2.51, p < .05$) and underlying mechanism ($Z = -2.73, p < .05$) for this psychological technique. The trainee practitioners were significantly more accurate when stating the theoretical underpinning of the mood words technique ($M = 2.14, SD = 1.10$) than

the experienced practitioners ($M = 0.93$, $SD = 1.14$). A similar finding was also portrayed when describing the underlying mechanism, with the trainee practitioners demonstrating a significantly more precise response ($M = 2.50$, $SD = 0.65$), than the experienced practitioners ($M = 1.43$, $SD = 1.09$).

Summary and Implications

The present study examined the level of transferability from four exemplar, attentional-based techniques in the sport psychology literature through to applied practice. A characteristic of the applied sport psychology profession relates to attentional strategies and techniques grounded upon firm theoretical and empirical research findings (Winter & Collins, 2013). Furthermore, it is increasingly seen as fundamental to engage in evidence-based practice at the forefront of issues regarding the provision of applied sport psychology (Cropley et al., 2010). Without this enhanced consideration, “practitioners are nothing more than technicians who may know what to do, but have no understanding of why what they are doing may work” (Moore, 2007, p.19). Hence, we were also interested in ascertaining both trainee and experienced sport psychologists’ knowledge, regarding the theoretical grounding, and mechanistic underpinning of these applied practice techniques.

Specifically with regards to application, approximately half the number of experienced practitioners stated they would use the first three psychological techniques within their applied practice, compared to the trainee practitioners. It could be argued that the experienced practitioners, some of whom now consult on a full-time basis and practice outside of academia, may overlook present literature-based techniques. However, the four techniques were purposefully selected for this study to offer a spread from being well established in the professional literature (e.g. Gallwey, 1997 – inner game), to holding recent coverage (e.g. Jenkins, 2008 – inner game). Furthermore, the experienced practitioners were generally less knowledgeable on the theoretical and mechanistic underpinning of the

techniques. The challenge for the established practitioner is to remain committed to the idea that applied practice is informed by the evolving professional literature. While busy professionals cannot be expected to accumulate and evaluate each empirical study that is published, they are still surely expected to remain current in knowledge in order to meet the professional requirement for continued professional development. Further highlighting the need for practitioners to be able to acknowledge what they do not know, accepting the ever-present gap between their current practice and scientific innovation (Moore, 2007).

An alternative explanation for this limited uptake of the literature-based techniques can be related to the developed professional judgment and decision-making (PJDM, Martindale & Collins, 2005) held by the experienced practitioners. Reflecting on PJDM encourages a deeper level of conceptualization and coherence of practice, providing a platform from which to further develop expertise in providing applied sport psychology support (Martindale & Collins, 2013). The experienced practitioners in this study could, arguably, have realized through PJDM the limitations of these literature-based techniques for the challenges faced when allocating attentional resources in the applied field (Winter et al., 2014) and developed other preferred strategies to the ones chosen in this study. If *this* were the case, however, these consultants should still be expected to know the provenance or starting point of their deliberations towards a, presumably, better option: in short, to know where these strategies had come from *and* why they wouldn't use them.

In any applied discipline, scientist-practitioners seek guidance from a prevailing theoretical and empirical paradigm to underpin, inform, and guide their work. The trainee practitioners within this study have graduated from a masters' degree within the field of sport psychology, before undertaking their BPS stage two, or BASES supervised experience programmes. The working model of theory-research-practice is emphasized within these educational programmes, providing an evidence-based approach to the neophyte practice of

sport psychology (Smith & Smoll, 2011). This working model was subsequently exemplified in the mood word and task relevant cognitions technique, represented in the survey from the standing vertical jump scenario (cf. Dugdale & Eklund, 2002; Rushall et al., 1988). Specifically, this technique had the highest uptake from the trainee practitioners (92.86%), and importantly the highest scores for theoretical ($M = 2.14$) and mechanistic underpinning ($M = 2.50$). Thus, demonstrating a clear evidence-based decision, from theory-research-practice.

However, a great deal of formal sport psychology education consists of the programme developers directing what is to be learned and, it is assumed, trainee practitioners are able to obtain the knowledge of concepts and skills they require, before transferring and applying them effectively to the context in which they practice (Gilbert, Gallimore, & Trudel, 2009). The experienced practitioners, on the other hand have, through social interaction and real-world practice, constructed meaning in practical ways so that knowledge may be more effectively applied (Gilbert & Trudel, 2005). Conversely, there were instances from the survey where the trainee practitioners stated they would use a technique within their practice, for example 85.71% for the tennis scenario (cf. Gallwey, 1997 - inner game), without always knowing the theoretical ($M = 1.36$) or accurately explaining the mechanistic underpinning ($M = 1.93$). Gray (2001) has suggested that professional practice has too often been associated with an overenthusiastic adoption of interventions with unproven efficacy and, in this case from the trainee sample, without a sound understanding of the scientific evidence-base to the inner game technique. By not understanding the evidence-base, the practitioner is unable to critically evaluate new attentional-based methods, or fully understand what needs to be targeted for the intervention to be successful (Moore, 2007).

In contrast to the other techniques within the study, the rhythmicity technique (cf. Jeannerod, 1999; MacPherson et al., 2009) from the golf scenario demonstrated a similar

transferability to applied practice by the experienced sport psychologists (78.57%), compared to their trainee sample (85.71%). Although other techniques received similar findings from the trainee practitioner sample, the rhythmicity technique received the most transferability to applied practice by the experienced sport psychologists. Notably, the experienced practitioners were most knowledgeable with regards to the mechanistic underpinning for rhythmicity compared to all the other techniques presented in the survey. In simple terms, the experienced practitioners provided the most accurate responses for why/how this technique may work, demonstrating an informed choice to use within their practice (Gardner & Moore, 2006; Martindale & Collins, 2005, 2010, 2013).

Although no systematic bias was perceived across the presented applied scenarios, less than half of the trainee practitioners surveyed (42.86%) and less than a quarter of the experienced sample (21.43%) stated they would use the analogy learning technique within their applied practice. In addition, there were no significant differences between the experienced or trainee practitioners regarding the theoretical knowledge or mechanistic underpinning of this technique. It can be argued that analogy learning has derived from a theoretically driven basis (implicit motor learning - Masters, 1992) in contrast, for example, to the inner game technique (cf. Gallwey, 1997; Jenkins, 2008) where the primary focus is for practical application. Supporting this argument, researchers have critiqued the limited transferability of analogy learning to the applied environment (Beek, 2000; Bennett, 2000; Carson & Collins, 2011; Lam et al., 2010). Equally, due to the majority of performers having already learnt explicitly (Winter & Collins, 2014) provides a practical explanation why so few sport psychologists are adopting or willing to use this technique in their practice.

Furthermore in this regard, Silva et al. (1999) believe that applied sport psychology has two very different aims, with one focusing on conducting research, while the second describes the application of sport psychology principles with clients. The contention

underpinning this situation is that different aims within any discipline generate distinctly different types of knowledge (Collins, 2008; Collins & Kamin, 2012). The analogy learning technique, through its theoretically driven basis, could therefore be associated with a generation of literature that is publication-focused, rather than on the applied implications *per se* (Winter & Collins, 2014). Thus supporting the debate, in that there is a growing concern over whether we are providing evidence-driven models for understanding, conceptualizing, and intervening with athletes (cf. Gardner & Moore, 2006).

The greater degree of focused practice in a domain is the logical consequence of advances of the discipline and profession of psychology. According to the APA, a proficiency area in psychology is a defined area of psychological practice that requires advanced knowledge and skills acquired through an organized sequence of formal education, training, and experience. By specializing within a proficiency, sport psychologists continue to address the challenges associated with their ethical requirements (e.g. APA, AASP, BASES, BPS) and determine the range of information that they must acquire, maintain, and renew to remain current and competent in their area of applied practice (Kaslow, Graves, & Smith, 2012). Specialization is, therefore, an inevitable product of the developmental processes within a discipline and a profession (Roberts, 2006) and, could be associated with a developed idiosyncratic knowledge by these experienced practitioners.

However, it has been widely documented that the predominant philosophy adopted by applied practitioners is the cognitive-behavioral approach (Burton & Raedeke, 2008; Winter & Collins, 2014). A major premise being that athletes may need to learn cognitive strategies, through mental skills training to cope with the various demands of training and competition (Burton & Raedeke, 2008). Therefore, the scientific study of mental processes in elite performers is central to this philosophy, because the ability to exert mental effort effectively is vital for optimal athletic performance (Moran, 2009). As a consequence, it is hard to

377 imagine, if attention is central to practice as demonstrated in this dominant philosophical
378 approach, that by specializing these experienced practitioners did not recognize the
379 techniques, by specifically identifying the theoretical and mechanistic knowledge.
380 Conversely, as Carlstedt (2013) recently stated “too many sport psychology practitioners
381 work within a vacuum; becoming too comfortable with approaches they were trained in, that
382 may be, at least to a certain extent, no longer adequate or qualify as being evidence-based”
383 (p.4).

384 In relation to this, recent researchers have noted a wide range of perceived half-lives
385 across the various specialties within professional psychology and a consistent trend toward
386 the diminishing durability of knowledge (Neimeyer et al., 2014; Wise et al., 2010). As an
387 indicator of professional obsolescence, the half-life of knowledge is the time it takes a
388 practicing professional, in the absence of any new learning, to become roughly half as
389 knowledgeable or competent to practice in his or her field (Neimeyer et al., 2012). As a
390 general rule in this study, the experienced practitioners were less knowledgeable regarding
391 both the theoretical and mechanistic underpinnings of the techniques than their trainee
392 participants. The literature on continuing medical education as a comparative has noted
393 similar knowledge atrophy over time, linking this atrophy to lower levels of perceived
394 competence by colleagues and peers (Institute of Medicine, 2010).

395 However, with regards to this diminishing durability of knowledge, the observed half-
396 life of knowledge in applied sport psychology is not necessarily an indicator of its position
397 within the context of the larger field of professional psychology. For example, Neimeyer et
398 al. (2014) debated how “a short half-life could represent the escalating pace of new
399 knowledge gains in the field, just as it could reflect a hailstorm of critique aimed at its
400 collapsing central tenets. Likewise, a long half-life of knowledge could as well reflect the
401 timeless truths produced within a specialty, as it could the stagnant and moribund future it

faces” (p.97). Thus, regardless how this half-life of knowledge is perceived within the profession, ultimately new sport psychology knowledge needs to remain current and competent within this designated area of specialization. Furthermore, as highlighted in this study, the concept of transferability needs to be considered, ensuring the needs of the practicing psychologists employing the techniques within their applied work, is being met.

Branching out towards our allied disciplines, the gap between psychological science and psychological practice has been repeatedly described and bemoaned (Drapeau & Hunsley, 2014). Referring to previous literature concerning treatment-based outcomes, there is abundant evidence that many clients are not receiving scientifically supported interventions, while many clinicians appearing dubious of evidence-based practice (Lilienfeld et al., 2013). A study of 508 members of APA Division 12 revealed that respondents’ expressed only modest agreement with the proposition that controlled research on psychotherapy is pertinent to their practice (Stewart & Chambless, 2007). They rated current research on treatment outcome as modestly influential in their treatment decisions, but less so than past clinical experiences, or colleagues’ advice.

Furthermore, in the Stewart, Stirman, and Chambless (2012) qualitative investigation, clinicians noted positive aspects about treatment outcome research, such as being interested in what works. However, consistent with previous research (e.g., Pagoto et al., 2007), they had misgivings about the application of controlled research findings to their practices, do not reflect the realities of clinical practice or patients seen therein, and were skeptical about using manualized protocols. Therefore, although some research demonstrates a significant credibility gap between why it works in research and practice, we would also highlight a large block of work that stresses the need for evidence based practice (Dryden, 1989; Einhorn, 1974; Elliott & Wexler, 1994; Mallinckrodt, 1993); notably across the field.

Limitations

While the present study illustrates a range of interesting findings regarding the transferability of literature-based attentional techniques through to applied practice, they are not without their limitations. Firstly, with regards to the concept of transferability, the participants stated whether they would use each of the four attentional-based techniques. However, there could be a subtle or substantive difference between the trainee participants stating they *would* use, compared to not having actually employed these techniques at present. Therefore, although counted as transferable, it is not necessarily reflective of this sample with regards to real world practice, or representative of whether they *will* actually use these techniques in their future practice. In contrast, it was more accurate for the experienced practitioners to reflect back on the usage of these techniques, having collectively reported a mean of 18 years' experience as accredited practitioners.

The predominant professional philosophy utilized by sport psychology consultants is the cognitive-behavioral approach (Ravizza, 2002; Stainback et al., 2007). Consequently, this study purposely selected attentional-based techniques because the ability to exert mental effort effectively is vital for optimal athletic performance and hence central to cognitive sport psychology. We would, nevertheless, encourage further research to consider if similar findings are apparent within different consulting areas/techniques within the practice of sport psychology. Furthermore, as the sample is limited to applied sport psychology, we would also promote investigation through additional psychology disciplines and types of therapy, to see whether similar trends in evidence-based practice are apparent across other trainee and professional practitioners.

Finally, the findings from this survey study represent the views and experiences of the current participants, and not necessarily those of all practicing sport psychologists. However, from a more pragmatic point of view, the sample comprised sole practitioners, dual-role applied sport psychologists (academics), and both BPS and BASES trainees, reflecting the

norms in current UK practice.

Conclusion

Overall, through examining the level of transferability from four attentional-based techniques in the sport psychology literature, the present study has contextualized the process of theory-research-practice and we would suggest, found it somewhat lacking! Practitioners advocate the importance of attentional strategies in their applied work, however it was evident from the findings of this study that the transferability of these literature-based techniques are not always being adopted. Moreover, though seen as fundamental to engage in evidence-based practice, the diminishing theoretical and mechanistic knowledge underpinning the techniques from the trainee to experienced practitioner was apparent. Thus highlighting how this evidence-based approach is only possible, if practitioners remain committed to applied practice being informed by the professional literature, and acknowledge what they do not know. From an additional philosophical standpoint, we would have to question the publication of techniques in an applied field which have doubtful application. As a result, we suggest a need for further research, designed to be impactful in the applied setting and addressing the needs of the practicing psychologists employing the techniques within their applied work, if our discipline is to advance and remain as evidence-based.

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