Does reflective practice work?: Developing an empirical evidence base of the efficacy of reflective practice for improving applied service delivery across contexts

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GLOSSARY OF TERMS

Action Learning Groups:	A group of individuals working collaboratively together to learn from reflecting on real problems or areas of inquiry.
Applied Practice:	Refers to domains where practitioners utilise their knowledge, regardless of how this has been acquired, skills and experience, to provide practical services or support to clients and/or stakeholders.
Availability Bias:	A cognitive bias whereby individuals make judgments and/or decisions (e.g., diagnoses) about the likelihood of an event based on how easily an example, instance, or case comes to mind.
Experiential Learning:	An approach to learning from experiences using reflective practice.
Knowledge-in-action:	Craft knowledge, constructed out of the amalgamation and interplay of different sources of knowledge (e.g., social norms, values, prejudices, experiences, empirical knowledge), that allows professionals to manage and adapt to the dynamic and context specific nature of their work.
Levels of Reflection:	Refers to the level at which practitioners are able to reflect at, which in turn alters the focus, content, and quality of reflections from trivial to potentially profound.
Mindfulness:	An awareness that emerges through purposely paying attention in the present, non-judgementally or without reacting to observations.
Mindlessness:	An inactive state of mind that is characterised by reliance on distinctions drawn in the past. When people are mindless, they are trapped in a rigid perspective,

	insensitive to the ways in which meaning changes depending on subtle changes in context.
Philosophical Worldview:	A set of beliefs about fundamental aspects of reality that ground and influence one's perceiving, thinking, knowing, and doing.
Professional Artistry:	Refers to the competence of practitioners for using knowledge-in-action in unique, uncertain, and conflicted situations of practice.
Professional Philosophy:	Expresses an individual's beliefs regarding their profession and professional role. It communicates an individual's core values underlying professional practice and conduct.
Reflection:	The process of looking back at an experience, reminiscing about it, and considering "what was".
Reflection Levels:	See *Levels of Reflection.*
Reflective Diaries:	A mode for engaging in and documenting reflective practice that can be formally structured (e.g., through use of a reflective framework) or unstructured.
Reflection-in-action:	The process of tacitly drawing on a knowledge base as we engage with practice tasks, and therefore it is a matter of 'thinking on our feet'.
Reflection-on-action:	The process through which a person can make sense of, and bring into consciousness, the knowing-in-action utilised during an event to review, make sense of, and learn from a situation once it has ended.
Reflective Learning:	The process of acquiring new understanding, knowledge, behaviours, skills, values, attitudes and/or preferences following personal engagement with reflective practice.

Reflective Practice:	A purposeful and complex process that facilitates the examination of experience by questioning the whole self and our agency within the context of practice. This examination transforms experience into learning, which helps us to access, make sense of and develop our knowledge-in-action in order to better understand and/or improve practice and the situation in which it occurs.
Reflective Practitioner:	A professional that has developed proficiency in using reflective practice as defined above and commits to integrating reflective practice into their professional action.
Reflective Skills:	Skills (e.g., problem solving, critical thinking) associated with reflective practice, which if developed contribute to individuals being able to reflect at more advanced levels.
Reflexivity:	The process of interrogating the conditions under which notions of identity, such as ‘autonomy’ and ‘personal agency’, are constituted and accepted as valid, or are culturally legitimised.
Tacit Knowledge:	Also referred to as knowledge-in-action (defined above) and refers to knowledge that is garnered from personal experience and context.
Technical Rationality:	Problem-solving through exacting of solutions by applying theory and techniques derived from systematic scientific knowledge.

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"Out of Darkness Cometh Light"

The City of Wolverhampton's Motto

Associated Publications

Published Book Chapters

Picknell, G., Cropley, B., Hanton, S., & Mellalieu, S. D. (2014). Where's the evidence? Empirical reflective practice interventions with different populations in sport. In Z. Knowles, D. Gilbourne, & L. Dugdill (Eds.) *Reflective practice in the sport and exercise sciences: Contemporary issues* (pp. 28-38). London: Routledge.

Peer-reviewed Papers

Picknell, G., Cropley, B., Mellalieu, S. D., Hanton, S. (in preparation). Challenging the status quo: An autoethnographical account of an emerging professional practice philosophy. *Reflective Practice.*

Picknell, G., Cropley, B., Mellalieu, S. D., & Hanton, S. (under review). An investigation into the effectiveness of reflective practice for facilitating positive practice behaviours of health professionals.

Picknell, G., Mellalieu, S. D., Cropley, B., Hanton, S., & Al Shehhi, M. (under review). Who is it good for? Examining the relationship between reflective practice and mindfulness for promoting healthy lifestyles.

Invited Professional Practice Articles

Picknell, G., Cropley, B., Mellalieu, S. D., & Hanton, S. (2016). Building a reflective practice evidence-base: Investigating the benefits of enhancing reflective skills on the practice behaviours of applied practitioners. *The Sport and Exercise Scientist*, *50*, 22-23.

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Peer-reviewed Conference Communications

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Abstract

Within the sport, exercise and health science domains researchers and practitioners interested in understanding factors and processes associated with competent and effective practice have steadfastly advocated the value and contribution of reflective practice. In spite of this, there remains a lack of empirical evidence to support these contentions, which has potentially stifled the acceptance of reflective practice throughout the applied practice community. To address this limitation, this thesis provided an in-depth examination of reflective practice for enhancing the effectiveness of allied health practitioners' service delivery and development of a therapeutic alliance with support seeking clients. Utilising a mixed methods approach that incorporated both qualitative and quantitative methods of inquiry, the thesis comprised three separate studies that collectively aimed to: (a) examine the journey of allied health practitioners towards aligning their theoretical orientations and applied practice; (b) develop an empirical evidence base to support the purported benefits of reflective practice noted within the wider literature; (c) examine the developmental nature of reflective skills as an outcome of reflective practice; (d) determine the relationship between reflective skills and practitioner effectiveness measures; and (e) investigate whether engaging clients receiving support-services with reflective practice has a positive impact on their health endeavours. To gain a greater depth of knowledge and understanding of reflective practice and its associated skills, the author's personal journey as an applied practitioner was explored during Study 1. Specifically, the contribution of reflective practice for facilitating his professional philosophy and aligning techniques and interventions with personal values and beliefs were illuminated. The insight gained from this formative study provided the foundation for the construction of subsequent reflective practice interventions in Study 2 and Study 3. Study 2 utilised a crossover design to support the effectiveness of a reflective practice intervention for developing reflective skills (i.e., processes) that facilitated positive changes (i.e., outcomes) to the service delivery characteristics of applied allied health practitioners working with Emirati National Service recruits. Follow-up social validation interviews indicated that reflective practice led to improved self-awareness and an enhanced ability to consider alternative approaches to service delivery that were cognisant to clients' needs. An emerging theme from Study 1 and Study 2 was the potential for reflective practice principles to be incorporated into service delivery programmes that engaged clients in the process. As a result, in Study 3, a reflective practice intervention was developed and delivered by participants from Study 2 to health support seeking clients (e.g., National Service recruits). Findings indicated that developing reflective skills (i.e., processes) of clients has the potential to improve the ability to self-regulate health related behaviours leading to a positive impact on overall health status (i.e., outcomes). Further, the empirical evidence generated and the adoption of reflective practice into existing health-support programmes should enhance professionals within the allied health community's confidence regarding the value of reflective practice for bringing about meaningful changes to both their own applied practice endeavours and their clients' circumstances. Therefore, the findings of this thesis have the potential to direct future developments to training and education programmes aimed at applied health practitioners, with the intention of supporting pathways towards being competent and effective service providers.

CHAPTER 1

INTRODUCTION

Introduction

Therapeutic service provision requires relationships to be formed between practitioners and clients, whereby the latter receives services by the former, which are intended to benefit their circumstances by bringing about meaningful change. To enhance the likelihood of influencing such change, practitioners across therapeutic industries are required to be up-to-date with contemporary approaches to service delivery and open to evolving their practices in order to stay relevant in an ever-changing and evermore competitive environment (Megginson & Whitacker, 2017). To facilitate this process, and to maintain standards across disciplines, regulatory authorities of all allied health professions (e.g., The British Psychological Society; The British Dietetic Association; United Arab Emirates Department of Health) have systematically developed training programmes and licensing procedures over the last two decades that aim to: (a) ensure practitioners are competent and fit to practice; and (b) safeguard clients seeking professional services. Indeed, such competency-based approaches have been embraced as a process central to the professionalisation of therapeutic service providers (Jonsdottir, Hughes, Thorsdottir, & Yngve, 2011).

Cross-examination of the professional requirements of various health professions highlights numerous commonalities in terms of the competencies necessary for the provision of effective support. This is unsurprising as competency frameworks are primarily adopted as a means to enhancing the professionalism of individuals operating within specific domains by setting out standards that have to be achieved and adhered to in order to protect members of the public (Englander, Cameron, Ballard, Dodge, Bull, & Aschenbrener, 2013). Whilst similarities exist regarding competency categories across therapeutic professions, the relevant knowledge and application of skills required by practitioners remain profession-

specific. However, one area that is consistent, as well as transferable, across domains is the need for professionals to continually review and self-evaluate their practice. For example, the Health and Care Professions Council (HCPC) insist that Practitioner Psychologists and Dieticians should be able to reflect on and review practice as part of their Standards of Proficiency requirements (HCPC, 2013, 2015). In addition, the British Association for Sport and Exercise Sciences (BASES) stipulates that those wishing to become accredited practitioners need to demonstrate competencies for *Development of own Practice – Understanding the value of Reflection on Practice* (BASES, 2019), whilst the Association for Nutrition, under the competency titled *Professional Conduct*, require individuals to engage with the evaluation of their own practice against best practice standards, guidelines and protocols (Association for Nutrition, 2013) in order to be admitted onto the United Kingdom Voluntary Register for Nutritionists (UKVRN). Explicit, across all regulation requirements is the need for practitioners to develop their critical reflection capabilities in order to effectively and adequately evaluate their practice.

The rationale for developing competence as a reflective practitioner emerged from profession regulating organisations agreeing that traditional (i.e., Technical Rationality) approaches to continued professional education and training were not fit for purpose. Indeed, these approaches consider practice as being separated from theory, and that practitioners are "technicians" who merely apply theoretical knowledge obtained during their education into practice (Schön, 1987). Whereas, engagement in experiential learning through reflective practice facilitates knowledge that can be used to develop a range of professional competencies (e.g., Communication, Leadership, Problem Solving, Management of Self, Others and Practice). Furthermore, reflective practice has been utilised to develop numerous

technical (concerned with standards and the development of mechanical aspects of practice), *practical* (concerned with exploring personal meaning in a situation), and *critical* (concerned with examining the constraints that social, political, and economic factors have on action) professional practice principles. As such, reflective practice is seen as a conduit for shifting continued professional education and training away from traditional learning paradigms that are considered inappropriate for contexts whereby problems rarely present themselves in easily definable and resolvable forms, thus making the neat application of theory to practice difficult

Purpose of Thesis

The programme of research presented within this thesis provides a detailed examination of the role that reflective practice plays in improving the effectiveness of applied practitioners. Due to the understanding that much of the available literature across disciplines focusing on reflective practice has tended to be theoretical and/ or anecdotal (e.g., evidence developed through personal testimony) in nature (Huntley, Cropley, Gilbourne, & Sparkes, 2014; Mann, Gordon, & MacLeod, 2009; Picknell, Cropley, Mellalieu, & Hanton, 2014), the over-arching aim of this thesis was to provide much needed empirical evidence. In doing so, this would generate information suitable to initiate evidence-based reflective practices within health service provision. To achieve this aim, the objectives of the thesis were to: (a) examine the journey of applied practitioners (i.e., the author in Chapter 5 and participants in Chapter 6) towards aligning theoretical orientations and applied practice; (b) develop an empirical evidence base within the sport, exercise and health domains that supports the usefulness of reflective practice; (c) examine the developmental nature of reflective skills as an outcome of reflective practice; (d) determine the relationship between reflective skills and practitioner effectiveness

measures; and (e) investigate the impact of engaging clients receiving support-services in the reflective practice process.

Structure of Thesis

The structure of this thesis comprises nine chapters, including three studies presented as a series of research papers. Finally, a Reflective Epilogue concludes the thesis by documenting the professional journey of the author over the duration of the research programme. Following this 'Introduction', Chapter 2 reviews the available reflective practice literature across the sport, exercise and healthy psychology, sports coaching, and medical science domains. Chapter 2 provides a rationale for the necessity to examine reflective practice from an alternative perspective (e.g., quantitatively) to that traditionally employed within the literature. This chapter has been published as: Picknell, G., Cropley, B., Hanton, S., & Mellalieu, S. D. (2014). Where's the evidence? Empirical reflective practice interventions with different populations in sport. In Z. Knowles, D. Gilbourne, B. Cropley, & L. Dugdill (Eds.), *Reflective practice in the sport and exercise sciences: Contemporary issues* (pp. 28-38). London: Routledge.

Chapter 3 presents an overarching thesis methodology that provides a rationale and framework for the specific use of procedures for data generation across the three research studies. The purpose of this chapter is to provide the reader with clarity as to the author's general philosophical worldview, and how such perspectives, in conjunction with trends in the literature, helped shaped the approaches adopted for investigating the aims of this research programme.

Chapter 4 provides an in-depth analysis of the research context and setting. in order for the reader to understand why the author was interested in carrying out the programme of research in the specific environment presented within the thesis.

Specifically, Chapter 4 examines the current health status of the United Arab Emirates (UAE), factors that have contributed to transitions away from traditions of previous generations, the impact these transitions are having on the UAE's healthcare system, and approaches that are being employed in attempts to mitigate health related concerns. Given the author's initial training as a BASES Sport and Exercise Scientist (Psychology), it was important to convey why the research programme was not carried out with sporting populations. Additionally, this chapter allowed the presentation of substantial information that set the scene for each research study without needing to repeat this process across the separate chapters.

Chapter 5 (Study 1) presents an autoethnography exploring the author's professional development journey as an applied practitioner over an extended period of time. This highly personalised account examined three key phases of the author's career pathway, including: (a) his psychology education; (b) subsequent professional training; and (c) as an early stage applied practitioner. Consequently, the account provides insights into the evolving nature of his professional practice philosophy. In doing so, the value of professional development through reflective practice is discussed as fundamental for solidifying the author's professional philosophy, which is congruent with lifelong self-directed learning and encourages the need to use experiences as learning opportunities for enhancing effective service delivery. In addition, a core theme emanating from the author's experiences was the lack of empirical evidence supporting the real world benefits of reflective practice for enhancing professional practice. Furthermore, the knowledge and understanding gained from this study regarding principles related to the effective use and adoption of reflective practice were also foundational for developing training programmes used during Study 2 and Study 3.

In order to evaluate the effectiveness of a reflective practice intervention with applied practitioners, and to generate much needed empirical evidence in support, Study 2 was carried out with health professionals. Indeed, Chapter 6 (Study 2) reports an investigation into the effects of a reflective practice training programme for developing applied practitioner's reflection skills and behaviours associated with effective practice. The findings highlight the beneficial elements of various activities that comprised the reflective practice intervention and provides useful information and a potential framework regarding the integration of reflective practice into professional training and development programmes of applied health practitioners. The results reported in this chapter were presented as: Picknell, G., Cropley, B., Mellalieu, S. D., & Hanton, S. (2016). An investigation into the effectiveness of reflective practice for facilitating positive practice behaviours of health professionals. Research presented at the annual International Psychology Conference in Dubai, United Arab Emirates. This chapter is also currently in preparation for submission to a peer-reviewed journal. Both Study 1 and Study 2 illuminated a common theme regarding the role that reflective practice plays in altering users' thoughts, decisions and actions. The possibility that reflective practice is able to influence future behaviours was interesting, especially when considering that a key aspect of effective applied practice is to bring about positive changes to client's circumstances.

Building on the notion presented above, Chapter 7 (Study 3) reports an investigation examining the beneficial effects of a multimodal training programme for facilitating health support seeking clients' lifestyle behaviours and health related outcomes. Findings indicated that including effective reflective practice principles into behaviour change interventions appears to accelerate achievements of health related goals and aids in developing more robust and enduring healthy behaviours.

Not only does this study compare three behaviour change interventions, each with unique strengths and weaknesses, but also monitors how differing training activities affects reflection skills and targeted behaviours. This information is particularly useful for practitioners interested in utilising reflective practice with their clients and professional training providers for developing learning activities that promote a reflective culture among health practitioners and organisations. The results reported in this chapter were presented as: Picknell, G., Cropley, B., Mellalieu, S. D., Hanton, S., & Al Shehhi, M. (2018). Who is it good for? Examining the relationship between reflective practice and mindfulness for promoting healthy lifestyles. Research presented at the Exercise and Sport Science Australia - Research to Practice Conference, Brisbane, Australia. This chapter is also currently in preparation for submission to a peer-reviewed journal.

Chapter 8 summarises the key findings of the programme of research and discusses the conceptual issues derived from them. This chapter also explores the practical implications emanating from the findings, and discusses the strengths and limitations of the programme of research. Finally, future research directions are considered to elicit pertinent areas for investigation to influence the training and development of applied allied health practitioners.

Chapter 9 provides a reflective epilogue that is intended to provide details regarding the author's journey throughout the research programme as both an applied practitioner and early career researcher. The personal narrative contained within this section aims to facilitate discussion and allow readers to reflect and consider the transferability of the author's experiences to their own circumstances.

Presentation of the Thesis

The presentation of this thesis adheres to specific formatting principles that include: (a) American Psychological Association (6th Edition); (b) English (United Kingdom) spelling; (c) Table and Figure numbering that are embedded within the narrative and re-start with each new chapter; (d) Reference lists presented at the end of each chapter; and (e) Relevant appendices that follow Chapter 9, Reflective Epilogue and are numbered continuously throughout. Chapter 2 has been published, and therefore was presented within this thesis in the manner it appears in the public domain. It is acknowledged that since this chapter was published in 2014 there may be concerns that literature informing the programme of research are dated. Given the scope of Chapter 2, concerning the lack of empirical evidence in the reflective practice literature, the core issues raised still persist and therefore remain pertinent. Furthermore, more contemporary research specific to the aims and objectives of each study presented herein, that were not referred to or critiqued within Chapter 2, have been included within the relevant introduction and discussion sections. Lastly, terms like “we” and “our” within Chapter 2 are used with respect to the collective opinion and contribution of the authors. These include myself (Gareth Picknell), who contributed the chapter conceptualisation, design and construction, and my supervisory team (Professor Brendan Cropley, Professor Sheldon Hanton, and Professor Stephen Mellalieu) who provided chapter support and editing in line with their supervision duties.

Summary

This thesis provides an in-depth examination of the role of reflective practice for developing practitioners’ service provision and facilitating positive health changes for support seeking clients. The rationale for conducting such an investigation is

based upon: (a) the growing emphasis for allied health professionals to demonstrate competence as reflective practitioners; (b) the sustained support for the benefits of reflective practice for improving professional effectiveness; (c) the initial support for incorporating reflective practice principles with service users; and (d) the lack of empirical research in the extant literature. In attempts to address the central aims of this research programme a combination of qualitative and quantitative methods were employed across numerous samples including neophyte and experienced practitioners, as well as clients receiving health support services. To the author's knowledge, this is the first thesis dedicated to the empirical investigation of both processes and outcomes related to reflective practice and how subsequent developments influences practitioner effectiveness and healthy lifestyle choices.

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CHAPTER 2

LITERATURE REVIEW

Where's the evidence? A review of empirical reflective practice research within sport

Abstract

Despite gaining prominence within the domains of sport, exercise and health sciences, the reported benefits of using reflective practice have been largely anecdotal. In light of this, the adequacy of reflective practice for facilitating change and enhancing practitioner effectiveness remains equivocal. The purpose of this literature review is to draw upon the wider professional development literature to highlight current shortcomings and offer potential research directions for developing an empirical evidence-base within sport, exercise and health domains that aims to support the contention that reflective practice actually *works*. Suggestions for future empirical research avenues focus on three key areas: (a) development of reflective skills; (b) associations between reflective skills and service delivery changes; and (c) impact of enhanced reflexivity on client support programmes.

Where's the evidence? A review of empirical reflective practice research within sport

The importance of reflective learning is frequently noted in the professional development literature, with reflective capacity being regarded by many as an essential characteristic for developing individuals' expertise within a variety of fields (e.g., Mann, Gordon, & MacLeod, 2009; Newman, 1999). The relationship between reflection and expertise stems from Schön's (1983) influential work within the education literature, where he noted that practitioners make judgements and decisions based largely on *knowledge-in-action* (otherwise referred to as *tacit* knowledge). According to Schön, this knowledge-in-action is acquired from the practice settings that professionals operate in, whereby the simple application of theory may be insufficient for effective practice. Further, Schön contended that knowledge-in-action, whilst an automatic feature of repetitive and stable professional practice, is developmental insofar as practitioners are cognisant of the complex nature of human interactions that present unusual phenomena (i.e., unexpected problems or unexplained outcomes), which may not always fit within the boundaries of what has come to be viewed as "normal". Accordingly, practitioners are able to develop their knowledge-in-action, or *professional artistry* from their diverse range of practical experiences following engagement with two distinct learning processes referred to as: *reflection-in-action* (takes place during the situation) and *reflection-on-action* (takes place following the completion of an event). As a result of Schön's (1983) initial work, and subsequent support from various domains, reflective practice has received increased interest within the sport, exercise and health domains over the past decade (cf. Cropley & Hanton, 2011; Cushion, Nelson, Lyle, Jones, Sandford, & O'Callaghan, 2010; Mann et al., 2009). Indeed, the acceptance of reflective practice

within sport and exercise has evolved as a result of two significant concerns: (a) the professionalisation, and increased accountability of applied practitioners (e.g., sport scientists, coaches, psychologists); and (b) criticisms that formal education programmes and professional body-endorsed qualifications under-prepare practitioners for the complexities of operating in real-world environments. Whilst promising, the inclusion of reflective principles as a means of generating professional knowledge and learning from experiences is currently primarily grounded on theoretical debate and anecdotal accounts (Cropley & Hanton, 2011). This has resulted in a paradox for advocates who contend that reflective practice "should work", based on logical theoretical reasoning, yet are unable to conclusively demonstrate whether it "actually works", with empirically supportive evidence.

Similar concerns have been noted previously within other domains including nurse education (e.g., Peden-McAlpine, Tomlinson, Forneris, Genck, & Meiers, 2005) and medical professions (e.g., Mamede, Schmidt, & Penaforte, 2008). In these fields, the paucity of empirical evidence regarding the usefulness of reflective practice resulted in scholars exploring various experimental research programmes. Their intention being to contribute to the advancement of an evidence-base that aimed to increase professionals' confidence and adoption of reflective principles into education programmes and practices. Such developments addressed Newman's (1999) concerns regarding accepting the values of reflective approaches without questioning the evidence upon which claims are made. Whilst the sport, exercise and health domains has made progress towards developing an empirically validated evidence-base, with research identified in the coaching (Knowles, Gilbourne, Borrie, & Neville, 2001), applied sport psychology (Cropley, Hanton, Miles, & Niven, 2013), and athletic development literature (Jonker, Elferink-Gemser, de Roos, & Visscher, 2012), more is

needed to understand the role of reflective practice in developing professionals' reflective skills, and whether these enhanced skills result in positive changes to practice.

To provoke thought amongst researchers and practitioners as to increasing the value of reflective practice within the applied disciplines of sport, exercise and health this chapter presents a review of salient and critical aspects identified within the literature. To achieve this a general narrative literature review was carried out by critically examining relevant texts that have contributed conceptual, theoretical and methodological considerations to the topic of reflective practice (Onwuegbuzie & Frels, 2016). As such, the reviewed information has been organised and presented within this chapter is be divided into two main sections. The first section considers the purported benefits of reflective learning, developing reflective skills, and becoming a reflective practitioner based on empirical research within the wider literature. The second section addresses the limitations that presently exist within sport, exercise and health, using studies from other domains to unearth future research avenues for furthering our understanding of reflective practice. In doing so, it is hoped that progress can be made within the sport, exercise and health domains towards developing an empirical evidence-base that facilitates practitioners' confidence, acceptance and adoption of reflective practice as part of their everyday professional activities.

Reflective Practice: An Empirical Research Review

The intuitive appeal of reflective practice, with its proposed benefits for practitioners in a range of domains, has resulted in researchers attempting to understand how its principles can be integrated into education programmes and on-going professional practice. However, in line with the limitations identified within the

sport and exercise domain (see Cropley & Hanton, 2011), there continues to be a paucity of empirical evidence examining whether reflective practice actually works (Duke & Appleton, 2000; Mann et al., 2009; Peden-McAlpine et al., 2005). To overcome this lack of experimental research, preliminary programmes have been developed with the intention of reviewing whether reflective practice interventions are able to "bridge the gap" between discipline-specific abstract theory content and the particulars of unique and complex situations in professional practice settings (Forneris & Peden-McAlpine, 2006).

Research examining the efficacy of reflective practice interventions can be grouped into two broad categories: (a) *process-oriented*; and (b) *outcome-oriented*. Process-oriented investigations are concerned with the development of reflective skills amongst participants following their involvement on education programmes which involve activities designed to provoke reflective thinking (e.g., Duke & Appleton, 2000; Sobral, 2000). The intention of this broad research is based on the assumption that enhanced reflexivity will ultimately improve professional practice. Research designs have employed both qualitative and quantitative methods to determine alterations of the levels at which individuals are able to reflect or their self-perceived use of reflective thought. Duke and Appleton's (2000) research is recognised as the first to quantitatively investigate the development of reflective capabilities within the health sciences, and assessed the changes in levels of student nurses' reflective skills over the course of an academic year. Levels of reflective skills were gauged following the authors' development of a marking grid, adapted from the extant literature (e.g., Wong, Kember, Chung, & Yan, 1995), which was subsequently used whilst assessing reflective-based coursework. The findings provided some initial support for the notion that reflection is developmental (cf. Mann et al., 2009), as

enhanced reflective skills linked to the description and analysis of practice, as well as the synthesis of relationships between theory and practice were evident.

The notion of development within reflective skills was further supported by Sobral (2000) who studied medical students' appraisals of self-reflection in learning following their involvement in a study skills course. The research design was deemed more rigorous than Duke and Appleton's (2000) as a control group of individuals not enrolled on the study skills course, and thus not exposed to the reflective practice intervention, were used to compare pre- and post-test appraisals of self-reflection. Whilst both groups were considered homogenous with respect to their initial self-reflection appraisals, a significant difference was noted between the experimental group's pre- and post-intervention scores, whereas the control group's scores remained similar over the same time frame. To elucidate the positive relationship between the education programme and its impact on the use of reflective practice by students, key features of the course that encouraged and developed reflections included: (i) self-appraisal of current learning practices and outcomes; (ii) discussion of learning strategies with peers and allowing learners to come to decisions by themselves; and (iii) constructive feedback linked to learning goals and inviting learners to monitor their progress. Sceptics may argue that such a structured programme for promoting reflective practice could result in reflections that are not spontaneous, but deliberately stimulated by the educational context (Edwards & Thomas, 2010). Indeed, this approach has received criticism within the pedagogical literature, whereby researchers emphasise that forcing reflective practice raises unavoidable moral and practical issues including strategic, rather than open and honest responses (Hobbs, 2007). Although it seems likely that events occurring naturally in an authentic professional context would stimulate similar responses to

those outlined in the available literature, further investigation is needed to demonstrate this.

These studies, although few in number, support the view that reflective skills may develop in association with certain interventions (Mann et al., 2009). It also appears that the development of reflective skills may be related to other aspects of learning and professional development. Indeed, Sobral (2000) identified positive associations between self-reflection and perceived competence for self-directed learning, and meaningfulness of the learning experiences one encounters. However, without further investigation it is difficult to deduce the association of these purported relationships. In addition, limited research within the process-oriented research category has incorporated a comparison group for determining differential influences of reflective practice interventions on reflective ability. In light of this limitation within the wider reflective practice literature (e.g., nurse education, medical professions), the transferability of the interventions and results into the domain of sport and exercise is unclear.

Outcome-oriented research typically examines reflective principles as independent variables and their impact on discipline specific outcome measures (e.g., Mamede, Schmidt, & Penaforte, 2008; Mamede, van Gog, van den Berge, van Saase, van Guldener, & Schmidt, 2010; Peden-McAlpine et al., 2005). This area of research has been of particular interest to researchers in domains where decisions can be classified as either correct/accurate or incorrect/inaccurate, with limited margins of error (i.e., diagnostic accuracy by medical practitioners). The purpose of this type of research has been to raise practitioners' confidence of using reflective practice, by highlighting the relationship between reflective reasoning and enhanced professional practice competencies. Mamede et al. (2008) and Mamede et al. (2010) attempted to

illustrate this relationship by examining whether medical students' diagnostic accuracy could be enhanced following reflective reasoning. Both studies reported that when confronted with complex medical cases, reflective reasoning facilitated the probability of accurate diagnoses. Indeed, Mamede et al. (2008) reported that whilst there were no significant differences for accuracy of diagnosing simple cases following non-analytical (automatic) and analytical (reflective) reasoning ($p < 0.05$), accuracy for diagnosing complex cases significantly increased by 200% ($p > 0.05$) when participants used reflective practice. In addition, reflecting on complex cases appeared to counteract the potential negative consequences of automatic reasoning, namely *availability bias* (overestimation of the likelihood of a correct decision based on the ease with which it comes to mind; Mamede et al., 2010), that has been recognised as a developmental artefact associated with expertise (Ericsson, 2003).

Whilst promising, such research within the medical sciences literature does have its limitations. Specifically, studies have recruited medical students from the clinical training element of formal education programmes with the rationale for using this cohort being two-fold. First, novice practitioners are unlikely to be contaminated by the pressures of real world practice, and thus, are more likely to be open-minded regarding the inclusion of reflective practice as part of their decision-making process (Mamede et al., 2010). Second, it is recognised that diagnostic errors are inevitable, although more likely to occur during initial training, and thus learning strategies that attempt to minimise or reduce these errors at the outset of career initiation have warranted further investigation. Taken together, researchers have agreed that due to the highly cognitive nature of early career practice (Ericsson, 2003), and the analytical approach to dealing with unfamiliar scenarios that reflective practice affords, calls for the initial empirical evidence-base within the medical and health sciences to be

developed with trainee clinicians. This is not surprising, or at odds with that of other professional domains, including sports coaching, when considering the discontent many have with education programmes that leave novice practitioners underprepared for the realities of professional practice (Paquette & Trudel, 2018). It seems logical, therefore, that strategies incorporated into education programmes aimed at enhancing experiential learning opportunities of novice practitioners should be developed on evidence obtained from individuals engaged with their early professional training. However, focusing solely on neophyte practitioners has led to questions regarding the potential extrapolation of beneficial outcomes of reflective practice for those professionals already operating in their field.

Peden-McAlpine and colleagues (2005) provided some evidence of the value of reflective practice for professionals already operating in their fields of work. The research examined whether incorporating elements of reflective practice into participants' on-going professional development would promote a shift in attitude and behaviours regarding the inclusion of family interventions into critical-care practices. Participants had an average of 13 years of critical-care experience, so one would perhaps assume that much of their practical work was driven by automatic reasoning associated with the development of expertise over a prolonged number of years (cf. Ericsson, 2003). Following participants' involvement in a reflective practice intervention, three interrelated themes emerged which reflected the learning outcomes achieved: (i) acknowledging and reframing preconceived ideas about practice; (ii) recognising theirs and other's emotions associated with their practice; and (iii) incorporation of new ideas and initiatives into their practice. This acceptance and initiation of new practice ideas is akin to Gibb's (1988) cyclical model of reflection, which suggests that individuals orient themselves for future action following the

acquisition of knowledge and learning through systematic and critical thought processes. Indeed, the few available studies within the outcome-oriented research category support this contention, in that the learning opportunities that reflective practice affords not only generates new, but also activates existing, knowledge and understanding from experiences (Mamede et al., 2010). Thus, it is the assimilation of newly constructed knowledge into existing memory schemas that promotes alternative and more favourable outcomes regarding future practice decisions.

In summary, although few in number, there examples within the available literature that provides empirical evidence that reflective practice is a fruitful experiential learning strategy for applied practitioners. Indeed, a glance at this work shows support of the benefits proposed in the sport, exercise and health literature through theoretical debates and anecdotal accounts, which in turn should enhance researchers' and practitioners' confidence for justifying their inclusion of reflective practice. This conclusion derives from two categories of research that have: (a) examined the influence of reflective practice for developing reflective skills and levels at which individuals are able to reflect, and (b) investigated the influence of reflective practice on outcome measures that provide insight into practitioners decisions and behaviours.

Potential Research Directions for Sport, Exercise and Health Sciences

Having reviewed the developing evidence-base within the wider literature this section offers directions for future research to enhance sport, exercise and health practitioners' confidence for adopting reflective practices. In doing so, we hope to address concerns about the dominance of anecdotal accounts for promoting the benefits of reflective practice in a domain that traditionally prides itself on rigorous scientific enquiry (Knowles, Gilbourne, Tomlinson, & Anderson, 2007). The

proceeding discussion regarding potential research avenues within the field of sport exercise and health science can be categorised into three main areas: (a) examining the development of reflective skills; (b) links between reflective skills and service delivery changes; and (c) impact of enhanced reflexivity on client-support programmes.

Development of Reflective Skills

The general consensus within the extant sport, exercise and health literature is that reflective practice is a highly skilled activity that can be developed over time (Cropley & Hanton, 2011; Cushion et al., 2010; Knowles et al., 2001; Mann et al., 2009). In light of this, the lack of research examining the measurement of reflective skills following a reflective practice intervention is of concern. This is particularly so when considering the exhaustive efforts made within the sport, exercise and health domains to understand the developmental nature of other cognitive skills following interventions that incorporate various psychological techniques (cf. Mellalieu & Hanton, 2008). The notable exceptions of evidence that exist within the sport and exercise domain (e.g., Cropley et al., 2013; Knowles et al., 2001) have assessed participants' reflective skills following their involvement in educational programmes including reflective processes. In both studies the level at which individuals could reflect were determined by qualitative techniques (i.e., visual inspection, content analysis), which dominate the examination of reflective practice within the literature. However, such approaches have two key limitations for convincing the domain about the usefulness of developing reflective skills. First, whilst qualitative research designs have been encouraged in the sport, exercise and health domains, Smith and Sparkes (2009) warned that this should not be at the expense *of*, but rather in conjunction *with*, quantitative methods in order to allow for elaboration of certain issues and stimulating

further thought on the topic under investigation. To the authors' knowledge there is currently no psychometric assessment tool available within the sport and exercise domain that provides an insight into levels at which individuals are able to reflect. However, as with other conceptual developments within the domain (see Fletcher, Hanton, & Mellalieu, 2006) it may be difficult to make significant advances in applied practitioners' understanding, and build on the body of knowledge regarding reflective practice, without valid and reliable measures.

Second, relying predominantly on qualitative research designs may constrain the generalisability of findings without the scrutiny that control groups afford for demonstrating the impact of interventions on dependant variables under investigation (Weinberg & Comar, 1994). Cropley et al. (2013) attempted to overcome this issue by utilising a single-subject multiple-baseline design, where in essence, participants act as their own control, so that any observed changes to behaviour were attributable to the reflective practice intervention and not other extraneous factors. This research design has previously been labelled as an *effectiveness method* and is considered useful for evaluating practice (Anderson, Miles, Mahoney, & Robinson, 2002). However, Anderson et al. (2002) argued that *evaluation of practice* designs should be balanced with *evaluation research* that utilises experimental methods (e.g., control groups) with the intention of enhancing the domain's confidence regarding cause and effect relationships between support programmes (i.e., reflective practice interventions) and measurable outcomes (i.e., enhanced reflective skills).

Efforts to overcome these limitations have been made within the medical sciences by comparing differences between an experimental (thus "exposed" to a reflective practice intervention) and control (not exposed to the reflective practice intervention) groups' self-appraisal of reflection using a questionnaire that assessed

individuals' reflection levels (e.g., Sobral, 2000). Whilst, the characteristics of the control group in Sobral's study were open to criticisms relating to placebo effects and the questionnaire not being previously exposed to rigorous psychometric testing, the study has been commended for adding to the already existing observational, anecdotal, and analytical research relating to reflective practice. Without this type of research the transferability of interventions and findings of reflective practice across contexts will remain limited (Mann et al., 2009).

The Relationship between Reflective Skills and Practice

Effective reflective practice has been conceptualised as a purposeful learning activity that results in positive changes to practice (cf. Cropley & Hanton, 2011). As such, whilst the development of reflective skills allows for more advanced, critical levels of reflecting-in and –on action, unless the purpose of achieving these higher skills (e.g., critical thinking and problem solving) is to enhance practitioner effectiveness, attempts to convince the sport, exercise and health domains to "buy in" to the benefits of reflective practice will remain futile. Future research needs to examine the relationship between enhanced reflective skills and outcome measures that indicate change and improved effectiveness. Knowles and Saxton (2010) specified that change could be represented by three aspects of practice: (a) changes in values, beliefs, or behaviours; (b) confirmation or rejection of particular theories or practices; and/or (c) changes in knowledge of the self, the context of practice, or the environment in which individuals operate.

Numerous anecdotal accounts exist within the coaching (e.g., Peel, Cropley, Hanton, & Fleming, 2013) and applied sport psychology (e.g., Tod & Bond, 2010) literature regarding the evolution of professional philosophies following engagement with reflective practice. A common feature within this literature is the enhanced sense

of self-awareness and adoption of alternative approaches as a result of altered values, beliefs, or behaviours that reflect practitioners' attempts to align what they do in practice with their professional philosophy. Indeed, developing such professional congruence is regarded as a critical feature of effective practice (Poczwardowski, Sherman, & Ravizza, 2004) yet presently, there remains a dearth of empirical evidence to support these contentions. Further, the research that has employed experimental designs (e.g., single-subject multiple-baseline) has failed to provide tangible quantitative evidence regarding the beneficial outcomes of achieving higher levels of reflective skills (Cropley et al., 2013). Cropley et al. noted that whilst social validation interviews provided insights into practitioners' perceptions regarding improvements to their practice, changes in quantitative measures were not statistically significant from pre- to post-intervention. However, despite this constraint, the quantitative element of this study should be commended as a refreshing addition to the reflective practice literature in sport, exercise and health.

Researchers and practitioners interested in the relationship between reflective skills and changes to practice are directed to the medical profession literature where empirical evidence exists from carefully considered qualitative and quantitative experimental methods (cf. Mamede et al., 2010; Peden-McAlpine et al., 2004). For example, Peden-McAlpine et al. employed a phenomenological research approach to provide evidence that enhanced reflexivity resulted in nursing actions that aligned their values and beliefs with those of families they encountered, creating a more caring environment in the intensive-care unit. Additionally, Mamede and colleagues noted improved accuracy of diagnostic decision-making following reflective reasoning. Taken together these studies provide evidence of changes to practice and support the contentions reported in the social validation element of Cropley et al.'s

(2013) research. The dilemma for researchers in the sport, exercise and health domains is how to measure and report improved outcomes of reflective processes objectively given the multidimensional nature and complexity of applied practice contexts. For example, Richards, Collins, and Mascarenhas (2012) reported findings regarding the development of mental models of sports coaches as an outcome measure, yet the information from which conclusions were drawn are vague and ambiguous for the reader in that no evidence is presented to illustrate the nature of change to coaches' thought processes. We acknowledge that other professions may be better suited to determining effectiveness of practice objectively using outcome measures (e.g., decisions), as these are typically categorised as either correct or incorrect with little room for error, and therefore changes to practice can be considered conclusive. Indeed, Martindale and Collins (2007) raised concerns that such evaluation models may be difficult to develop in sport, but that this predicament should not restrain future exploration of their potential. Until such changes to practice following the development of reflective skills are examined with experimental research methods, scepticism regarding the usefulness of reflective practice may well remain.

Reflective Practice and Client-Support Programmes

Recently, the sport, exercise and health domains have outlined the potential for reflective practice to facilitate practitioners' adoption of client-centred approaches (cf. Cropley & Hanton, 2011). Such approaches are grounded in humanism where the recipients of support-services are encouraged to develop their self-awareness to better perceive their ability to control thoughts, emotions, decisions and behaviours. The premise that enhanced reflexivity may benefit the client is of particular interest to practitioners within the domain when considering Hardy, Jones, and Gould's (1996)

viewpoint that effective procedures for providing client support should be prioritised. Initial evidence for incorporating reflective practice into support-services indicates the potential for enhancing self-efficacy and managing competitive anxiety (Hanton, Cropley, & Lee, 2009), maintaining effort (Hanrahan, Pedro, & Cerin, 2009), and empowering self-regulated learning (Jonker et al., 2012). Whilst encouraging, limitations of these studies include a lack of insight into researchers' attempts to develop reflective skills, and the likelihood that participants received appropriate support from suitably trained reflective practitioners, without which conclusions regarding whether participants' thought processes were indicative of critical reflection remains limited. This research within the domain should, however, be commended for leading the way in considering the contributions of reflective practice for benefitting clients. Indeed, most of the empirical research across domains has lauded reflective practice for enhancing practitioners' effectiveness. Yet, in line with Hardy et al. (1996), we contend that for reflective practice to be truly valued as a worthwhile contribution to the development of sport, exercise and health the advantages that it offers recipients of support-services, whether through enhanced satisfaction, or facilitating positive performance/behaviour changes, should be of paramount concern for researchers' and practitioners' future endeavours.

Concluding Remarks

This chapter has reviewed the empirical evidence that exists for reflective practice in the sport, exercise and health domains. Due to the limited experimental designs within sport and exercise, literature searches from other domains were conducted in order to explore and evaluate how these professions have utilised numerous research programmes to cultivate an evidence-base that encourages practitioners to adopt reflective practice as part of their effectiveness endeavours. In

doing so, we have identified three general research foci that we believe will build on the body of reflective practice knowledge that exists within the sport, exercise and health domains. These include: (a) examining the developmental nature of reflective skills; (b) determining the relationship between reflective skills and practitioner effectiveness measures; and (c) investigating the impact of enhanced reflexivity on clients receiving support-services. Previous literature reviews have proffered more global future directions that attempt to provide researchers with direction about *what* should be investigated. For example, whether reflective practice should be conducted in isolation or through shared reflections with others (e.g., Knowles et al., 2001), who should undertake reflective practice (i.e., neophyte trainees and/or experienced practitioners; e.g., Friesen & Orlick, 2010), and the modes of reflective activity (i.e., reflective writing) for effectively generating knowledge and learning from experiences (Knowles et al., 2007). It is not the intention of this thesis to dismiss these suggestions, as there is indeed, much to learn about reflective practice. Instead, this chapter provides suggestions about *how* researchers may attempt to develop an empirical evidence-base that supports or challenges the abundant beneficial claims that exist within the sport, exercise and health literature based on anecdotal accounts and theoretical debate. In doing so, researchers within the domain will overcome Newman's (1999) concerns about adopting reflective practice without questioning the evidence that assertions are based, and can be more confident in the notion that reflective practice actually works.

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CHAPTER 3

METHODOLOGICAL CONSIDERATIONS FOR THE THESIS

Overview

The preceding chapter highlighted the reliance of the sport, exercise and health domains primarily on qualitative research methods when investigating the benefits of reflective practice. Indeed, detailed literature reviews by Mann, Gordon, and MacLeod (2009) and Huntley, Cropley, Gilbourne, and Sparkes (2014) within healthcare, and the sport and exercise sciences report that qualitative inquiry accounted for 58.6% and 88.2% respectively, of all reflective practice research. It appears that up until more recently this issue continues to persist (Tod, Hutter, & Eubank, 2017). As part of a review of professional development initiatives within the sport psychology discipline, Tod et al. (2017) identified the need for sustained efforts towards developing an empirical evidence base that promotes the values of reflective practice as a leading future direction. Whilst the reasons for a reliance on qualitative methods have not been explicitly outlined within the reflective practice literature, it appears that there are two general foci that have guided this research agenda. Therefore, the initial section of this chapter will identify the main reasons why qualitative research designs have been favoured within this area. In doing so, the foundations for addressing the main aim of this chapter will be in place. That is, this chapter aims to provide the reader with clarity as to the author's general philosophical worldview (i.e., a set of beliefs about fundamental aspects of reality that ground and influence one's perceiving, thinking, knowing, and doing), and how such perspectives, in conjunction with trends in the literature, have helped shape the approaches adopted within the present thesis. The need for researchers to be aware of their bias toward specific research paradigms and their respective ontological (the nature of reality) and epistemological (the existence of knowledge and how it is acquired) positions is necessary in order to allow the exploration of associated methodologies (frameworks

for guiding the specific use of procedures) and methods (techniques or procedural tools for generating data) (Jones, 2014; Sparkes, 2015).

Reflective Practice and Qualitative Inquiry

To address the key reasons as to why qualitative inquiry has dominated the reflective practice literature it is important to note that the use of such methods is not uncommon for understanding underdeveloped concepts (Jones, 2014). On reflection, during the early 2000's, reflective practice research in sport, health and exercise was indeed, considered to be in its infancy. For example, at the time of their review, Mann et al. (2009) acknowledged that due to the early stage of development regarding the concept of reflective practice more exploratory research approaches were appropriate in order to develop a general understanding of the construct, definitions and terminology. Further, since Marten's (1987) call for greater use of more introspective methods for acquiring knowledge, there have been numerous examples within the sport and exercise psychology literature where researchers have turned to qualitative research in order to enhance comprehension of concepts by gaining perspectives of lived experiences in order to better understand mechanisms that influence cognitions, emotions and behaviours (e.g., coping and stress; Culver, Gilbert, & Trundel, 2003). Indeed, Culver et al. surmised:

> If, as applied researchers and consultants in sport psychology, we are to take advantage of other ways of knowing to access processes that are not easily studied using common data collection methods, we must experiment with methods that go beyond quantitative inquiry (p. 12).

Whilst proponents of alternative research methodologies should be applauded for their reluctance to be shackled by the constraints of traditional approaches for exploring relatively new concepts, subsequent trends within the reflective practice literature

have continued in a similar vein. Incidentally, it appears that early approaches (e.g., personal reflections, semi-structured interviews) used for investigating reflective practice came to be seen as foundational criteria against which successive qualitative research was judged (Sparkes, 1998). The result being that much of the early reflective practice literature rarely deviated from the initial qualitative imprint and status quo. Clearly, this was problematic for the acceptance of reflective practice by the wider audience given Smith and Sparkes' (2009) warning that qualitative inquiry should not be at the expense *of*, but rather in conjunction *with*, quantitative methods in order to allow for elaboration of certain issues and stimulating further thought on the topic under investigation.

In addition to justifications for using qualitative inquiry from a development of knowledge and understanding perspective, another influence appears to be associated with the philosophical foundations of reflective practice and what it purports to offer its users. Specifically, when reflective practice is recognised as a meaningful learning endeavour, the dominant associated epistemological assumptions (e.g., constructivism, humanism); that is, what constitutes knowledge and how knowledge of phenomena is acquired, appear to be more closely aligned with qualitative modes of inquiry (Jones, 2014). Indeed, within the education literature, the work of Schön (1983, 1987), who is widely credited with initiating unprecedented interest in reflective practice as part of professional education, is constantly linked with well-respected constructivist theorists (e.g., Nelson Goodman, Jean Piaget). Whilst a detailed critique of the constructivist undertones are beyond the scope of this thesis, Kinsella (2006) contended that the general sentiment across all three researchers is that they focus on the active manner in which individuals construct knowledge through the development of cognitive structures and a process of

reflection. On the basis that reflective practice appears to be founded on a constructivist worldview it is no wonder that much of the literature is dominated by qualitative methodologies. Indeed, prominent qualitative researchers (e.g., Guba & Lincoln, 1989; Lincoln & Guba, 1985) argued within their seminal work that the appropriate epistemological paradigm for qualitative research was constructivism. This contention was based on the standpoint that an understanding of reality is a social construction and not an objective truth. Further, constructivism maintains that knowledge is constructed by those investigating it and therefore an element of interpretation of acquired results is required rather than utilising quantifiable data to test an existing and predefined theory.

Collectively, the two core issues raised so far appear to have contributed to the development of knowledge and understanding regarding reflective practice, albeit without rigorous and empirically-driven approaches to research. It is plausible that the lack of quantitative research examining cause and effect relationships between reflective practice, the development of reflection skills and practice outcomes has somewhat stifled its acceptance within the sport, exercise and health science literature (Picknell, Cropley, Hanton, & Mellalieu, 2014; Tod et al., 2017). To address this issue, a key aim of this thesis research programme is to develop an empirical evidence base within the sport, exercise and health domains that supports the value and acceptability of reflective practice. To that end, it is reasonable to assume that methods adopted to contribute to this aim should be dominated by quantitative approaches underpinned by a positivistic philosophical viewpoint (Tenenbaum, Eklund, & Kamata, 2012). Specifically, this entails utilising research principles and methods of the natural sciences to understand human behaviour, which itself is considered objective. However, merely adopting a set of research methods to address

a shortfall within the literature, without questioning one's own belief systems is naïve and problematic. Indeed, Mertens (2010) warned that if researchers neglect their duty of at least being aware of their philosophical standpoint they "reduce their ability to make principled, informed and strategic decisions about both the process and products of both their own inquiries and that of others" (p. 11). Further, Lincoln (2010, p. 7) contended that it is "fraudulent" for scholars to take their paradigmatic assumptions for granted as the research they engage in tells the reader something important about what they think constitutes knowledge and how this can be passed on. From a personal perspective, not engaging in introspection and reflection of one's own philosophical assumptions seems limiting. Indeed, it diminishes the ability to critique others' research, and reduces credibility when entering philosophical, theoretical and methodological debates in the research community (Mertens, 2014). Whilst this contention may be perceived as provocative, without at least a basic understanding of the philosophical viewpoints, methodologies and methods that are categorised by predominant research paradigms, researchers are unable to fully appreciate conclusions and theorising by their peers regarding phenomena under investigation. To consider such criticisms the following section will provide insights into the author's tendency towards specific research paradigms and how this came to be.

Understanding Personal Approaches to Research

As an undergraduate student, the author's academic experiences were shaped by exposure to theoretical concepts predominantly informed by positivistic/post-positivistic paradigms (for a review see Chapter 5). It was only through subsequent applied experiences and an introduction to reflective practice that a more cynical and critical approach to professional practice emerged that drew the author's attention towards other ways of knowing. Until this juncture, in the opinion of Merten (2010)

and Lincoln (2010) the author was both ‘naïve’ and ‘fraudulent’. Subsequently, through the process of reflection the author began to appreciate the challenges of coupling and translating theory into practice. Indeed, rarely was this process neat, linear or straightforward, and therefore, in order to achieve practitioner effectiveness (cf. Cropley, Hanton, Miles, & Niven, 2010) or professional artistry (cf. Schön, 1987), the author felt compelled to examine his predisposed approaches to providing support services. This did not result in a dramatic paradigmatic shift in the way that the author understood and used knowledge, but rather reflected the necessity to develop a repertoire of skills and approaches tailored for specific needs. With this in mind it seems timely and appropriate to address a key conundrum of the present thesis.

The gaps in the literature outlined in this, and previous, chapters regarding the empirical evidence shortage in the reflective practice literature, means that the present research programme provides an ideal opportunity to explore the value of reflective practice using methods closely aligned with a positivism paradigm. However, the primary concern with this paradigm centres on the requirement for researchers to remain detached from the research process in order to reduce bias and subjectivity (see Table 1). Given that the key justification for the present research programme emerged from the author’s personal experiences of using reflective practice to enhance his professional practice, the idea of being removed from the process appeared counterintuitive. Alternatively, to provide the reader with clarity about why the author embraced reflective practice, given that such a concept is underpinned by a paradigmatically opposed philosophical perspective to that of the author’s viewpoint during his formative years as an applied practitioner, a qualitative approach that illuminated the journey seemed necessary. To address this paradox, an alternative research paradigm was explored that allowed the research programme to honour the

interpretivistic nature of traditional reflective practice research, whilst allowing empirical evidence to be generated in attempts to overcome the concerns raised above.

According to Giacobbi, Poczwardowski, and Hager (2005), the emergence of an alternative paradigm; namely, *pragmatism* resulted to address the practical concerns of practitioners in a way that purists were unable to agree on. Specifically, pragmatism offers researchers and practitioners a paradigm that is based on the philosophy of knowledge construction that emphasises practical solutions to applied research questions and the consequences of inquiry (Peirce, 1984). In the context of the present thesis, adopting a pragmatic research viewpoint afforded the author the opportunity to examine his practical experiences through the lens of qualitative reflections and utilise that knowledge to formulate applied reflective practice interventions to bring about changes to health practitioners' and their clients' circumstances in a real world setting. In order to understand the causal nature of reflective practice for altering cognitions, decisions and behaviours, quantitative methods were subsequently adopted for gathering data.

Combining qualitative and quantitative methods as a viable research approach within sport, exercise and health sciences has received increased interest over the past two decades (Sparkes, 2015). Indeed, Culver et al. (2003), as part of their systematic review of qualitative research, noted only 7% of reviewed articles from three leading sport and exercise psychology journals (e.g., *Journal of Applied Sport Psychology, Journal of Sport & Exercise Psychology, Psychology of Sport & Exercise and The Sport Psychologist*) utilised mixed methods. Whereas, more recently, Culver, Gilbert and Sparkes (2012) reported approximately 31% of qualitative research had used a combination of methods. In addition, during this period a journal dedicated

Table 1

Ontology and epistemological differences of positivism and interpretivism

Ontology	**Positivist**	**Interpretivist**
Nature of 'being'/ nature of the world	Have direct access to real world	No direct access to real world
Reality	Single external reality	No single external reality
Epistemology		
'Grounds' of knowledge/ relationship between reality and research	Possible to obtain hard, secure objective knowledge	Understood through 'perceived' knowledge
	Research focus on generalisation and abstraction	Research focuses on the specific and concrete
	Thought governed by hypotheses and stated theories	Seeking to understand specific context
Methodology		
Focus of research	Concentrates on description and explanation	Concentrates on understanding and interpretation
Role of the researcher	Detached, external observer	Researchers want to experience what they are studying
	Clear distinction between reason and feeling	Allow feeling and reason to govern actions
	Aim to discover external reality rather than creating the object of study	Partially create what is studied, the meaning of phenomena
	Strive to use rational, consistent, verbal, logical approach	Use of pre-understanding is important
	Seek to maintain clear distinction between facts and value judgments	Distinction between facts and value judgments less clear
	Distinction between science and personal experience	Accept influence from both science and personal experience
Techniques used by researcher	Formalised statistical and mathematical methods predominant	Primarily non-quantitative

Note. Reprinted from "Qualitative Marketing Research" by D. Carson, A. Gilmore, C. Perry and K. Gronhaug, 2001, London, UK: Sage.

exclusively to mixed methods research (i.e., *Journal of Mixed Methods Research*) has been established and gained credibility within the social sciences, being consistently ranked in the top 10 publications for its respective category (Molina-Azorin & Fetters, 2017).

The recognition and acceptance of a third research paradigm (pragmatism) is the culmination of heated debates between scholars who contend that due to fundamental differences of what constitutes knowledge between positivist or interpretivist epistemologies, rendered the combining of quantitative and qualitative methods impermissible. Indeed, quantitative and qualitative methods have traditionally been viewed as dialectically opposed with each approach located at opposite ends of a hypothetical research methods continuum (Moran, Matthews, & Kirby, 2011). However, more recently researchers have acknowledged that the boundaries between these two approaches are often not as clear as traditionalists would have us believe. For example, in both quantitative and qualitative research there is substantial evidence that certain characteristics, which define specific research methods (e.g., sample size, randomisation), have been loosely applied. Indeed, Bergman (2011) emphasised that quantitative researchers sometimes use small samples and non-random data sets and that qualitative researchers may not always adhere to constructivist principles in interpreting interview data. It is this recognition that all research methods are fallible, which appears to have fast-tracked interest in mixed methods, given "the respective weaknesses of quantitative and qualitative methods can be overcome and neutralised by drawing on the complementary strengths of each other to provide stronger and more accurate inferences" (Sparkes, 2015, p. 49). In addition to using mixed methods research for offsetting weaknesses of each approach to provide stronger inferences, Sparkes (2015) further insisted that they

allow for: (a) corroboration between qualitative and quantitative data for enhanced study validity; (b) a more comprehensive picture of a study phenomenon that can emerge from a combination of findings; and (c) improved generalisation and transferability of findings.

In summary, the purpose of this chapter was to clarify why the methods adopted across the subsequent three studies of the thesis research programme were utilised. Without this explanation, the author's approaches to carrying out the studies may have been called into question and considered contradictory with respect to the key justification for the research programme outlined in the preceding *Literature Review;* namely, the need for more quantitative research to further examine the benefits of reflective practice. By using a mixed methods approach, the intention of this thesis was to reflect an honest account of the author's dynamic journey as both a researcher and practitioner ensuring to address the philosophical conflicts and dilemmas between these two roles, whilst being continuously mindful to contribute meaningful evidence to the reflective practice literature.

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CHAPTER 4

RESEARCH CONTEXT

Introduction

This chapter of the thesis aims to provide the reader with an understanding of the unique environment in which the present research programme was carried out. In doing so it aims to contextualise the factors that need to be considered when reviewing the development of interventions and procedures, and the resultant findings. Indeed, without an appreciation of the research context, decisions and opinions regarding the significance, generalisability and transferability of key findings are considered naïve and misinformed (Walliman, 2011). By presenting this chapter, it is the author's intention to provide a reference point for which generated results in subsequent chapters can be situated and understood. In doing so, the reader is better informed regarding the implications of the presented findings with respect to wider global health concerns and interventions considered effective for tackling the identified problems. The first section of this chapter will examine the development of the United Arab Emirates (UAE), with specific emphasis on economic and environmental transitions. The second section considers how these developments have contributed to the overall health of the nation. Finally, the third section outlines measures taken by the UAE government for targeting specific issues, with specific emphasis on programmes for supporting overweight and obese individuals.

Development of the United Arab Emirates

The UAE is a federal sovereign absolute monarchy consisting of seven emirates (i.e., Abu Dhabi, Ajman, Dubai, Fujeirah, Ras Al Khaimah, Sharjah, and Umm Al Quwain), that were unified in 1971 and gained independence that same year. As of 2018, the UAE is considered one of the wealthiest countries in the world when taking into account Gross Domestic Product (GDP) per capita (International Monetary Fund, 2018), and only second to Qatar in the Middle Eastern region. It is widely

recognised that the UAE's current global standing is a result of oil discoveries during the 1960's and mass oil exportation thereafter. Whilst efforts have been made over recent decades to diversify its economy, the country is still very much dependent on oil revenues with the latest statistics suggesting that related exports represented approximately 32% of the country's GDP (Organization of the Petroleum Exporting Countries, 2018). With the rapid economic development of the UAE in recent decades, allied to a reliance on a largely expatriate workforce, measures taken by the country to accommodate multiculturalism appear to have somewhat diluted local traditions and customs (Department of Economic Studies and Policies, 2018). Whilst an in-depth review of all potential factors that have influenced the cultural fabric of the nation is beyond the scope of this thesis, it is worth examining how traditional behaviours and activities that were once considered healthy, have now made way to habits more reflective of those noted elsewhere within Westernised countries. Indeed, within a relatively short period of time, the country has undergone a rapid transition from traditional semi-nomadic lifestyles to a modern affluent society that is categorised by over consumption of energy dense foods and low physical activity (Mabry, Koohsari, Bull, & Owen, 2016; Ng, Zaghloul, Harrison, Yeatts, El Sadig, & Popkin, 2011). As a result, the UAE is facing an increasing burden of non-communicable diseases (NCD) including obesity, diabetes, and cardiovascular disease (Abdulle et al., 2018).

Health of the UAE

The relationship between obesity and various comorbidities (e.g., type-2 diabetes, hypertension, coronary heart disease, stroke, cancers) is well documented (cf. Apovian, 2016). According to Loney, Aw, Handysides et al. (2013) the rise in noncommunicable diseases in the UAE is linked to the progressive increased

prevalence of obesity over the past two decades. Indeed, UAE prevalence rates (e.g., adult males ≈ 27%; adult females ≈ 33%) are presently more than double those of global averages (e.g., adult males ≈ 10%; adult females ≈15%), and have increased by approximately 10% and 3% for males and females respectively since the turn of the century (World Obesity Federation, 2000). Reasons attributed to the progressive nature of this problem in the UAE include a variety of individual, community, societal, economic and environmental factors that have contributed to a less physically active Emirati population, compared to previous generations. For example, many urbanised areas have not been carefully designed to promote physical activity (Ng et al., 2011), whilst occupational, domestic, and leisure-time physical activities have significantly reduced in more recent times (Al-Kaabi, Al Maskari, Saadi, Afandi, Parkar, & Nagalkerke, 2009; Ali, Baynouna, & Bernsen, 2010). In addition, the nutrition transition that has evolved following increased urbanisation over a relatively short period of time has resulted in eating habits widely considered as unhealthy (Ng et al., 2011). Specifically, across gender and age ranges, calories consumed are considered significantly higher than international recommendations, with a large proportion of ingested calories being in the form of processed foods, snacks and sugary beverages (Ng et al., 2011). Unsurprisingly, this combination of unhealthy dietary habits and reduction in physical activity has resulted in increased health-related diseases associated with higher obesity prevalence (Loney, Aw, Handysides et al., 2013).

Given that obesity is related to multiple physical and mental comorbidities and is an incontrovertible risk factor for all-cause and cardiovascular disease mortality (Ortega, Lavie, & Blair, 2016), if left to progress along its current path more individuals will die younger and treatment of obesity and its associated health

problems will have detrimental economic consequences on national health care systems and societal resources (Tremmel, Gerdtham, Nilsson, & Saha, 2017). To emphasise this concern, according to a report titled *Overcoming Obesity: An Initial Economic Analysis* (McKinsey Global Institute, 2014), an obesity prevalence rate of nearly 30%, as is the case with the UAE presently, will burden the economy by approximately £5 billion annually.

Localised Approaches for Tackling the Issues

Recognising the potential economic cost of supporting a nation that is getting heavier and evermore exposed to preventable communicable and non-communicable diseases, the UAE Government has taking steps towards ensuring citizens have equitable access to a wide range of healthcare related services. This commitment is clearly highlighted within the UAE's national strategy towards recognising its vision to be a leading country in the world by 2021 (UAE Vision 2021, 2014). Specifically, the government outlined its plans for ensuring that all citizens have access to world class medical care and taking steps towards actively protecting the population against health hazards through awareness and prevention.

Translating this strategy into reality has already commenced and is notable when taking into consideration the National Service programme, which was introduced in 2014, and requires all males between 18 and 30 years of age to complete military conscription. An in-depth review of the genesis of such an expansive intervention are beyond the scope of this thesis. For a detailed review, readers are directed to the Center for Strategic and International Studies (CSIS, 2017) report that examines the foundations and achievements of the National Service programme. However, it is worth noting that a key strategic objective of national service is to improve the overall health, fitness and wellbeing of all recruits that complete their

conscription. To achieve this aim the Chairman of the National Service and Reserve Authority (NSRA) commissioned an executive committee that included senior military officers, strategic advisors and healthcare specialists to develop a world class holistic and multidisciplinary initiative for providing preventative healthcare that was in keeping with the National Agenda (UAE Vision 2021, 2014). This resulted in the conception of the National Service's Physical Readiness (NSPR) initiative.

The NSPR was based primarily on the United States of America's (USA) Department of Defence's concept; namely, Total Force Fitness (TFF; Jonas, O'Connor, Deuster, Peck, Shake, & Frost, 2010). TFF is a move away from traditional military doctrine that focused specifically on physical fitness. Indeed, TFF encourages military personnel and practitioners to place more emphasis on the whole self and the life domains that are key to health and performance. Guidance that was published in order to extend the TFF concept included body, mind, social, and spiritual domains, and created a more comprehensive and holistic framework to support and integrate joint- and service-specific efforts that seek to promote health, enhance the resilience of service personnel and improve effectiveness and efficiency of the military (Deuster & O'Connor, 2015).With respect to the aforementioned domains, as well as the mission of the NSPR of improving the health, fitness, physical performance and wellbeing of individuals enrolled on the compulsory National Service Military Programme, services from each of the TFF domains were housed within five departments. These include: (1) Nutrition and Dietetics; (2) Physical Performance; (3) Sport and Exercise Medicine; (4) Health Promotion and Education; and (5) Psychological Services. These departments work collaboratively within an interdisciplinary framework to provide holistic public health support utilising a variety of evidence-based and theoretically underpinned interventions and

streamlining procedures for ensuring those who need support are identified as soon as is possible. Given that specialists within each department tend to be educated and trained from Western countries, specific support programmes and services that have been developed have been mindful of international guidelines. However, careful consideration has been taken to ensure they are tailored and/or adapted to the local population. For example, a food and hydration policy, which informs dietary guidelines within the UAE Armed Forces on a national scale, is the result of a careful amalgamation of the UK's *Eatwell Guide* (Public Health England, 2016) and USA's *MyPlate* (United States Department of Agriculture, 2011) concept, whilst remaining cognisant of ensuring localised traditional foods are catered for. In addition, physical training programmes aimed at National Service personnel, whom are widely reflective of the general population, are in keeping with recommendations posited by both the American College of Sports Medicine (Garber, Blissmer, Deschenes et al., 2011) and British Association of Sport and Exercise Sciences (O'Donovan, Blazevich, Boreham et al., 2010).

In addition to utilising a framework for informing service domains, the NSPR adopts systematic approaches to strategy development and operational planning. In doing so, organisational strategic goals, service user needs, and required programmes and services are in constant alignment, which is considered necessary for ensuring the effectiveness and comparability of health related projects (Guttmacher, Kelly, & Ruiz-Janecko, 2010). The model of choice, due to its prominence within the health intervention literature, is that of *Multilevel Approach to Community Health* (MATCH), which is commonly used for guiding professionals with planning, implementation and evaluation of health related programmes (Simons-Morton, Simons-Morton, Parcel, & Bunker, 1988). The model delineates five main phases: (1)

goal selection; (2) intervention planning; (3) programme development; (4) implementation preparation; and (5) evaluation. These distinct phases provide a step-by-step guide that allows pertinent factors to be prioritised to ensure that services and programmes are theoretically sound, based on rigorous scientific evidence and potentially evolved to enhance the effectiveness of ongoing operational delivery. The success of such an approach was commended in a recent report (e.g., CSIS, 2017) whereby the NSPR initiative was recognised as a leading systematic effort in the UAE for tackling overweight and obesity prevalence, reducing time spent being sedentary and increasing levels of physical activity above international guidelines. In support of this report, longitudinal evaluative systems have indicated that NSRA has contributed to the reduction of overweight and obesity prevalence by up to 14%, improved health literacy by 37% and increased physical fitness (e.g., cardiovascular respiratory fitness) by 42% (Picknell, Al Shehhi, Lawton et al., under review).

Implications for the Present Research Programme

The information presented thus far within this chapter allows the reader to better understand the environment and context that the research programme was carried out. The information within this forthcoming section aims to briefly clarify why the topic under investigation (i.e., reflective practice) was considered a worthwhile research endeavour within this context. A fundamental element of contemporary health promotion and behaviour change programmes is that of evaluation (Rosas & Knight, 2019). Indeed, the importance of evaluation is not a new addition to health strategies given the detailed principles and recommendations presented by the World Health Organisation at the turn of the century (Rootman et al., 2001). With respect to the NSPR initiative presented in the preceding sections of this chapter, the responsible department (i.e., Physical Readiness Department) ensures

data collection and reporting procedures are in place that allow the NSRA to externally evaluate the effectiveness of programmes against key performance indicators and contractual obligations. However, in line with international guidelines (cf. National Obesity Observatory, 2018 – *Standard Evaluation Frameworks for Weight Management Programmes*) the Physical Readiness Department has developed and implemented policy that differentiates and delineates between process and outcome evaluations to be adhered throughout each stage of the project by all practitioners. The idea being that any outcomes achieved are typically a result of the processes in place. As such, to achieve more pronounced outcomes requires attention to be paid to the constituent parts of implemented processes. Given the potential benefits of reflective practice for evaluating effectiveness, as outlined in Chapter 2, as well as the need for the Physical Readiness Department to constantly evolve programmes and interventions, the present thesis (Chapter 5, 6 & 7) aimed to examine the usefulness of reflective practice as an evaluative mechanism within the environment presented herein.

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CHAPTER 5

STUDY 1

Challenging the status quo: An autoethnographical account of an emerging professional practice philosophy

Abstract

The value of reflective practice for shaping and transforming applied practitioners' professional practice is well documented within the health, sport and exercise science literature. Within these disciplines, there is an established literature base that includes personal accounts that collectively provide insights into the different aspects of the developmental nature of effective professional practice and the roll reflective practice plays at each phase of the process. However, presently, less is known about the role of reflective practice for supporting transitions across different career stages over an extended period of time. Therefore, the purpose of this study was to reflect on the author's journey across different career phases and present insights into how he made sense of the numerous roles he fulfilled and progressed through each phase using learning methods acquired along the way. An autoethnographical approach was used to explore and present this process. Data were presented as individual narratives based on detailed reflective diaries and critical conversational notes with supervisors and mentors that were maintained over a 10 year period. To demonstrate how the author transitioned throughout his career the autoethnography was organised in accordance with recognised career development models. Therefore, narratives were presented within four sections; namely, (a) *Transitioning and Growth;* (b) *Exploration;* (c) *Early Establishment;* and (d) *Advanced Establishment.* Insights presented within these narratives consider the value of reflective practice for solidifying the author's professional philosophy, and emphasises the need to use experiences as learning opportunities for enhancing effective service delivery.

Challenging the status quo: An autoethnographical account of an emerging professional practice philosophy

In comparison to other professional disciplines, applied sport psychology has come a long way in a relatively short period of time (Gould & Voelker, 2014). Indeed, according to Gould and Voelker it was not until the late 1960's and early 1970's that worldwide interest and institutionalisation of the field occurred. Following the First World Congress of Sport Psychology in 1965 the initiation of numerous professional organisations across the globe emerged (e.g., North American Society for the Psychology of Sport and Physical Activity in 1966, British Society of Sports Psychology in 1967, French Society of Sport Psychology in 1967, and Canadian Society for Psychomotor Learning and Sport Psychology in 1969). Since this period researchers and applied practitioners have dedicated extensive resources towards understanding relationships between a multitude of factors and social interactions and their effects on the ability of athletes, coaches and support staffs to operate within sporting environments.

More recently, there has been a concerted effort to supplement this client-centred and performance focused research agenda with investigations that examine factors more related to the professional development of applied sport psychologists (Németh, Vega, & Szabo, 2016). The justification being that in order to better prepare prospective applied sport psychologists and to enhance the effectiveness of existing practitioners, issues specific to education, training and continued development programmes required a deeper understanding (Tod Hutter, & Eubank, 2017). As such, there now exists a comprehensive literature base that has contributed to the professions' understanding of career development stages (e.g., Tod, 2007; Tod, Andersen, & Marchant, 2011), definitions of effective practice (e.g., Aoyagi, Portenga, Poczwardowski, Cohen, & Statler, 2012; Cropley, Hanton, Miles, & Niven, 2010), identification of competencies and characteristics required to be a competent practitioner

(e.g., Jooste, Jooste, Kruger, Steyn, & Edwards, 2016; Sharp & Hodge, 2011; Ward, Sandstedt, Cox, & Beck, 2005), and an appreciation of philosophical frameworks for undertaking applied sport psychology (e.g., Hill, 2001; Poczwardowski, Sherman, & Ravizza, 2004). Whilst on going debates exist regarding the direction the discipline should steer itself towards (for a review of competency- versus expectancy-based training models, see Cruickshank, Martindale, & Collins, 2018; Fletcher, 2017), there is no doubt that the type of research referred to above has contributed and shaped the profession as it exists presently.

The information contained within the professional practice literature has allowed aspiring sport psychologists and profession regulating organisations to 'stand on the shoulder of giants', and learn about *what* it takes to be a competent/effective applied practitioner in the modern era and *how* to arrive at this status (Uphill, 2015). Noticeable within the literature is the acceptance and utilisation of qualitative research methods and specifically personal accounts for examining practitioners' and stakeholders' perceptions of key factors associated with service delivery (Gould & Voelker, 2014). Typically, participants' circumstances are examined at the stage of their career that they were at when the research was carried out. There are exceptions to this approach, with some research exploring applied practitioners' journeys over an extended period of time (i.e., two years, e.g., Tod & Bond, 2010). Notwithstanding these exceptions, there is a reasonable claim that sufficient information exists for the profession as a whole to have a good understanding of the diverse range of requirements to be achieved, and issues to be overcome, at each stage of the career pathway for all applied sport psychologists. However, when reviewing the collection of personal accounts by diverse applied practitioners, as is presented in publications such as McCarthy and Jones's (2014) text, *Becoming a Sport Psychologist*, the idiosyncratic nature of the journey becomes clear. Indeed, there is no singular pathway to become an applied sport psychologist. For example, some practitioners will have completed an undergraduate

psychology degree before specialising in applied sport psychology whilst others will have completed a psychology conversion course following an initial sport science programme. Without more longitudinal research that transitions across numerous phases of applied practitioners' careers, it is difficult for the wider audience to appreciate the nuanced and specific nature of challenges experienced when taking into account the diverse contexts that sporting environments present (McEwan, Tod, & Eubank, 2019).

In light of the preceding discussion, the purpose of this study was to reflect on the author's journey, from undergraduate student to experienced applied sport psychology (ASP) practitioner, and present insights into how he made sense of the numerous roles he fulfilled and progressed through the different stages of his career using learning methods acquired along the way. To provide a rationale for focusing on specific aspects of the author's professional development journey, the remainder of this chapter will be divided into three sub-sections. First, expectations of ASP practitioners working presently, as determined by the professional practice literature and profession regulating organisations, will be reviewed. Second, insights into how personal values, attitudes and behaviours and an appreciation of how these should be understood to inform ASP service delivery will be considered. Finally, a critique of methods employed to make sense of, and align philosophical worldviews with practitioner endeavours, aims to set the scene for how the author approached the organisation and sense making of relevant information presented within this study.

The Age of Accountability and the Professional Development of Applied Sport Psychologists

The emerging recognition of sport psychology in recent decades as a credible profession that allows practitioners to carve out a vocation within a domain they are passionate about has been a welcome development (Winter & Collins, 2016). Indeed, with enhanced recognition as a worthwhile profession within sport, came improved opportunities

for integrating services with individuals, teams and organisations (Meyers, Coleman, Whelan, & Mehlenbeck, 2001). One only has to review the education and training routes laid out by multiple professional organisations (e.g., Association for Applied Sport Psychology, BASES, International Society of Sport Psychology) to appreciate the international acceptance and integrity of sport psychology. The development of sport psychology appears to have resulted as the profession shifted into an "age of accountability" (Smith, 1989; p. 166). Indeed, Winter and Collins (2016) suggested that this shift needed to occur in order for the profession to be seen as relevant and capable of providing valuable services to a unique clientele base. As such, the shift led to greater importance being placed on relevant certifications, licensures, and ethical standards, which are intended to safeguard service users against those practicing sport psychology unethically and who have not demonstrated their professional competence (Gould & Voelker, 2014). Within the United Kingdom, typically, an individual wishing to pursue a career as a sport psychologist needs to commit to an undergraduate programme of study, followed by an accredited postgraduate qualification (McCarthy & Jones, 2014). Further, a period of supervised experience is usually expected to be completed, whereby knowledge and understanding gained during formal study programmes are put into practice under the guidance of an experienced mentor. Throughout the process, the development of knowledge, skills and competencies, and their application within relevant case studies are documented as part of a portfolio of evidence, which if deemed satisfactory by an external reviewer representing a regulatory authority, leads to certification / accreditation.

Given the detailed and rigorous nature of this training process, profession regulating organisations have placed much emphasis on ensuring that characteristics representative of competent and ethical service delivery are based firmly on findings within the professional practice literature (e.g., Fletcher & Maher, 2014; Hutter, Pijpers, & Oudejans, 2016) and stakeholder preferences (e.g., Anderson, Miles, Robinson, & Mahoney, 2004; Cruickshank,

Martindale, & Collins, 2018). To support the identification and understanding of the specific requirements that practitioners need to exhibit in order to be considered competent, Fletcher and Maher (2014) defined competencies as, "Complex and dynamically interactive clusters of integrated knowledge, skills, and abilities; behaviours and strategies; attitudes, beliefs, and values; dispositions and personal characteristics; self-perceptions; and motivations that enable an individual to execute a professional activity" (p. 172). Using this definition, allied to research investigating the specific elements contained within, professional regulating organisations have set out what areas need to be developed through education, training and professional development activities. For example, the UK Health and Care Professions Council (2015) has incorporated 15 competency groups into their Standards of Proficiency for Practitioner Psychologists, including, "being able to communicate effectively", "understanding the key concepts of the knowledge base relevant to their profession", and "being able to draw on appropriate knowledge and skills to inform practice".

Regardless of which country practitioners are from the route they progress through aims to ensure they are competent and operating with respect to a relevant code of conduct in an ethical manner. However, knowing what competencies are required is not enough. Trainees need to appreciate and demonstrate how they draw on, and link together these competency categories to provide worthwhile services. The challenge for the profession is to ascertain what constitutes competence, given the subjective nature of human interaction between service providers and clients. Indeed, more recently researchers have offered suggestions as to how competence, and more specific competencies might be assessed (e.g., Hutter et al., 2016a; Hutter, Pijpers, & Oudejans, 2016b). Whilst a review of assessment suggestions is beyond the scope of this thesis, until more information exists within the literature, merely understanding what constitutes competence is a good starting point. To that

end, Tod, Marchant, and Andersen (2007) previously conceptualised competent service delivery as:

> A multidimensional process in which practitioners (a) meet clients' needs and expectations, (b) develop and maintain mutually beneficial relationships […] (c) understand psychological interventions and apply them to assist athletes in specific situations, (d) empathise with athletes' situations and interpret them through the lens of suitable theory […], and (e) reflect on how they (the practitioners) have influenced the interactions and outcomes of service provision (p. 318).

The decision to base sport psychology professional standards on a competency-based framework is in keeping with numerous support service disciplines, including public health and its associated domains (Brown, Maryman, & Collins, 2017; Jonsdottir, Hughes, Thorsdottir, & Yngve, 2011). The propensity for professional development to relate to a competency-based model is in accordance with Knowles's (1990) *Lifelong Learning Principles*, whereby the purpose of education / training for adult learners is to facilitate the development of knowledge, understanding and application of skills required for chosen careers. Indeed, competency standards provide an architecture for workforce development by codifying knowledge, skills and attitudes necessary to practice effectively (Hughes, Shrimpton, Recine, & Margetts, 2011).

Importance of Aligning Philosophy with Practice

The preceding information has provided a summarised account of how the applied sport psychology discipline has professionalised in the way that it has, and why decisions for the approaches adopted were taken. However, as with any theory, concept, model, system and/or process, professionals operating within a discipline should always be looking to identify opportunities for growth and improvement. A criticism levelled at competency-based models for applied practitioners are that they tell us nothing about how the utilisation of knowledge,

skills and actions were considered with reference to the individual's core values, beliefs and attitudes (Collins, Burke, Martindale, & Cruickshank, 2015). Indeed, according to Cruickshank et al. (2018) competence is conceptually, "A function of (a) how well an individual understands various principles and constructs and (b) how well they can deliver core procedures and behaviours. Or, in other words, what they know and what they can do, framed against prescribed expectations" (p. 3). The issue therefore, is that the current adopted systems for training and certification of applied sport psychologists are presently determining individual's levels of competence against an externalised standard that pays little attention to internal tensions, dilemmas and justifications that occur as part of an applied practitioner's decision-making process.

To address this shortfall, an issue that has gained increased interest over the past two decades relates to the importance of achieving congruence between an individual's philosophical worldview and the approaches they adopt as part of their service delivery (e.g., Keegan, 2014; Lindsay, Breckon, Thomas, & Maynard, 2007; Poczwardowski, Aoyagi, Shapiro, & Vanraalte, 2014; Poczwardowski et al., 2004). Indeed, Poczwardowski et al. (2014) considered professional philosophy as a fundamental element of effective applied consulting practice, whilst others propose that it is the driving force behind technical aspects of service delivery approaches (e.g., Poczwardowski, Sherman, & Henschen, 1998). Specifically, Poczwardowski et al. (2014) contended that, "A clearly delineated professional philosophy has the potential to guide the students as well as both young and seasoned practitioners in navigating the complexities of consulting work" (p. 903).

Given the attention afforded within the professional practice literature to better understanding and conceptualising professional philosophies, the same emphasis does not appear to have been adopted by sport psychology regulating organisations. A review of official requirements regarding the standards and competencies of applied sport psychologists

in Australia (Psychology Board of Australia, 2016), United States of America (Association for Applied Sport Psychology, 2018) and United Kingdom (HCPC, 2015) indicated little to no interest towards philosophical worldviews or theoretical orientations. Interestingly, the HCPC's (2015) *Standards of Proficiency – Practitioner Psychologist's* document states that individuals should be able to "understand the philosophical bases which underpin psychological theories" (p. 15), yet this requirement is only relevant to counselling psychologists and not sport and exercise psychologists. The seemingly lack of necessity for applied sport psychologists to understand and develop their professional philosophy appears to be based on three general reasons. First, due to the perceived difficulty of teaching philosophical frameworks as a result of related topic areas being dense and laden with complex terminology, for the most part education and training providers have steered clear of doing so (cf. Keegan, 2016; 2010). Second, there is a lack of research within the literature examining differences between professional philosophies and application of services. Accordingly, Keegan (2010) noted that to achieve this type of research is difficult given the challenging methods of inquiry required. He noted:

> Pragmatically… it would be difficult (and possibly unethical) to conduct a randomised-control trial examining a single pedagogic decision during the training of applied practitioners. The number of practitioners in training at any time, the number who may ultimately reach accreditation/certification, the unique ways in which these neophyte practitioners learn and their unique client-groups, as well as the potential negative ethical implications of effectively "withholding" a key piece of supervisory knowledge, all combine to make a direct comparison unfeasible (p. 48).

Last, it may be that profession regulating organisations assume applied sport psychologists are already aligning their approaches to service delivery with their core philosophy, albeit implicitly. As such, it is little wonder that some practitioners may be inclined to ignore or

avoid paying attention to their theoretical orientations when presently there is a lack of consensus across regulating authorities to do so during the path towards being recognised as an ethical and legally entitled sport psychologist. The issue with this sentiment is that according to personal accounts of applied practitioners within the professional practice literature, many adopt techniques and interventions that they are exposed to during their initial training and education (Collins, Evans-Jones, & O'Connor, 2013; Keegan, 2010; Tod & Bond, 2010). Given where the profession has evolved from, much of the research that has informed practice has been from a *hard science* perspective (Keegan, 2016) that relies heavily on psychological skills training (Andersen, 2009). It is well documented that the reliance on psychological skills is due to the discipline's dominant theoretical orientation (e.g., cognitive–behavioural therapy [CBT]; Holt & Strean, 2001; Lindsay et al., 2007), which has emerged as a result of sport psychology's foundational service aims, which were to enhance performance or fix performance problems (Andersen, 2009; Keegan, 2014).

Collectively, the reasons identified above regarding the lack of interest in understanding philosophical frameworks has resulted in a situation whereby advocated requirements of competent applied sport psychology practitioners, as noted within the professional practice literature, are not backed up by standards set by profession regulating organisations. It seems logical that merely adopting a model of practice based on personal exposure and without questioning one's own core beliefs and values is a potential disservice to clients and stakeholders (Poczwardowski et al., 2004). Indeed, Collins et al. (2013) suggested that adhering to frameworks not congruent with personal beliefs and values renders a practitioner's service as inauthentic, and more than likely, ineffective (Lindsay et al., 2007). Although the initial research attention advocating the importance for practitioners to develop and understand their professional philosophies is promising, issues regarding how individuals

make sense of themselves and their roles, and how this process can enlighten service delivery are lacking.

Bridging the Gap between Professional Philosophy and Competence: The Role of Reflective Practice

Appreciating that approaches to applied practice can be shaped by personal values and beliefs is the first step towards acknowledging how interactions and services with clients can be tailored to specific needs. Accordingly, Poczwardowski et al. (2004) presented a hierarchical structure that considers decisions and applications of techniques and methods as dynamic and external processes that should be utilised with respect to intervention and client goals. Rooted to these decisions are a practitioners' *values* and *beliefs*, which have been cultivated through explanations learned from significant others and a personalised sense of how things should be (Poczwardowski et al., 2014). As such, beliefs and values are seen as stable and internal to the individual and should be considered as foundational to personal philosophy. The mounting support for the benefits of achieving synergy between personal philosophy and service delivery has resulted in researchers and practitioners offering suggestions as to how this process may be facilitated (e.g., Collins et al., 2013; Lindsay et al., 2007; Swann, Keegan, Cropley, & Mitchell, 2018). Poczwardowski et al. (2014) suggested that, "For many, an important step in the process of identifying core values and beliefs is a curiosity and openness to considering alternative explanations" (p. 900). Furthermore, Swann et al. (2018) provided evidence for the transitioning of philosophies through career progressions, whilst emphasising what factors are influential for this process to occur. Indeed, a common theme across the emerging literature is that of reflective practice. This is perhaps not surprising given the purported principles that reflective practice engenders, including openness and self-awareness. These principles allow users opportunities to bring into focus their approaches to applied practice and elevates alternative courses of action into

consciousness that can be reviewed and explored (Knowles, Gilbourne, Cropley, & Dugdill, 2014).

The link between reflective practice and development of professional philosophy has typically been expressed within personal accounts of trainee and neophyte practitioners (e.g., (Collins, Evans, & O'Connor, 2013; Lindsay et al., 2007; McEwan & Tod, 2015). More recently, McDougall, Nesti, and Richardson (2015) identified challenges to establishing a congruent philosophy and service delivery approach when they interviewed experienced practitioners. Findings suggested that all participants found the reflective practice to be a worthwhile learning endeavour as part of their professional development as it allows them to enhance self-awareness, leading them to question "how" and "why" they operate the way they do. Indeed, this line of self-evaluation and questioning allowed the practitioners to reflect on their firmly held values and beliefs, where these originated from, how they informed practice and whether adopted approaches with clients were effective. According to Poczwardowski et al. (2014) this type of careful consideration to ones work is crucial for allowing applied practitioners to develop their philosophy and is fundamental for allowing them to maximise their professional growth and development (Poczwardowski et al., 1998). Whilst initial accounts regarding the links between reflective practice and the development of congruent professional philosophies are promising, advocates need to be careful not to overemphasise expected outcomes of engaging in the process. Indeed, much of the literature reporting this link highlight participants move away from the dominant theoretical orientation of the profession (e.g., CBT) towards approaches more closely aligned with humanistic therapeutic principles (Collins et al., 2013; Faull & Cropley, 2009; Lindsay et al., 2007; Tod & Bond, 2010). This shift in service delivery approaches is masqueraded as an indicator of progression towards enhanced effectiveness. The concern is that the unintended implicit message suggests more traditional approaches to applied sport psychology consultancy are

somewhat inferior to those viewed as contemporary. The purpose of utilising reflective practice to self-evaluate one's role as an applied practitioner should not be to initiate the replacing of one dogma with another. Instead, practitioners should be encouraged to use reflective practice as a means to exploring a more holistic approach to applied sport psychology whereby interactions, techniques and interventions are adapted and suitably flexible to support the multitude of characters, situations and issues faced within the sporting context (Aoyagi et al., 2012; Keegan, 2014; Swann et al., 2018).

Support for the notion that being adaptable and flexible when operating in practice is a developmental process that reflective practice may be able to nurture is well documented within the counselling literature, where researchers have been keen to explore the maturation of practitioners throughout their careers (e.g., Rønnestad & Skovholt, 2012). A key concept adopted from the counselling literature that has received initial interest within applied sport psychology is that of *individuation,* which refers to the increasing levels of coherence between therapists' ideologies (e.g., values, beliefs) and the methods they use with clients. According to Rønnestad and Skovholt (2012), individuation is achieved when therapists rely less on external sources of information to guide their cognitions and behaviours and instead operate in a more autonomous manner to meet clients' needs. In doing so, service delivery and associated professional philosophies are less constrained by one particular theoretical orientation. The reference to operating autonomously has connotations with Schön's (1983) conceptualisation of *knowledge-in-action* (referred to elsewhere as *craft knowledge*, Knowles, Gilbourne, Borrie, & Nevill, 2001; or *tacit knowledge*, Martens, 1987). Knowledge-in-action is considered a product of reconstructing professional knowledge with the integration of beliefs, values, prejudices and social norms with theory and practice (Knowles, Gilbourne, Cropley, & Dugdill, 2014b). Indeed, Schön detailed how knowledge-in-action is an automatic feature of repetitive professional practice, yet emphasised merely

being exposed to experiences does not directly lead to improved knowing. Rather, engagement with learning processes; namely, reflection-on-action (reflection that takes place following an event) and reflection-in-action (reflection that takes place during the situation) are fundamental for facilitating the pathway towards achieving professional artistry. However, it is important to recognise that being able to reflect meaningfully, regardless of whether it occurs during or after an experience, is a developmental process that needs to be harnessed and nurtured (Knowles et al., 2014). Arguably, reflective practice is the best available means for practitioners to develop their ability to reflect, with the intention of leading to enhanced knowledge-in-action (Anderson, Knowles, & Gilbourne, 2004). In support of this point, and to delineate from other forms of learning, Knowles et al. (2014) defined reflective practice as:

> A purposeful and complex process that facilitates the examination of experience by questioning the whole self and our agency within the context of practice. This examination transforms experience into learning, which helps us to access, make sense of and develop our knowledge-in-action in order to better understand and/or improve practice and the situation in which it occurs (p. 10)

The value of reflective practice is well documented in the professional development literature and is regarded by many as an essential characteristic of professional competence (Mann et al., 2009; McEwan & Tod, 2015). Given the information presented in the preceding sections of this chapter, reflective practice may act as a conduit between professional philosophy and competence. Indeed, learning as a result of reflective practice facilitates the generation of meaningful information from experiences, which can be assimilated with existing knowledge and used to inform future service delivery practices (Devonport & Lane, 2014; McEwan & Tod, 2015; Richards, Mascarenhas, & Collins, 2009). With reference to applied sport psychology, much of the interest surrounding reflective practice has focused on

practitioners engagement with the learning process for enhancing self-awareness and honing psychological support skills, all of which are considered integral developmental components of effective practice (Cropley, Hanton, Miles, & Niven, 2010). The aim of the present study was to supplement the existing literature and add to the emerging interest within the field relating to reflective practice as a method for developing professional philosophy and aligning this to techniques and approaches to service delivery. The importance of addressing this aim shouldn't be understated. This is especially poignant given the links noted elsewhere between congruent service delivery and philosophical worldviews, with practitioners' enhanced satisfaction and competence (Assouline & Meir, 1987; Lachterman & Meir, 2004; Spokane, 1985). Furthermore, incongruent service delivery has been linked to ineffective applied practice and an increased risk of burnout and career abandonment (Fear & Woolfe, 1999; Vasco, Garcia-Marques, & Dryden, 1993). Addressing the aim of this study will allow the author to truly examine the personal benefit of utilising reflective practice, knowledge that may be profound in the development of reflective practice interventions for professionals seeking to align their applied practice with their professional worldviews.

Method

Research Design

To achieve the aim of this study, presented herein is my professional practitioner development journey, which I believe has contributed to an evolving practice philosophy. In addition, I believe the journey has also contributed to my development as a researcher, which is why the research I engage with is pragmatic and focuses on practitioner development. This process was initiated by an acceptance of diverse epistemologies (i.e., what constitutes knowledge and how knowledge of phenomena is acquired; Jones, 2014) and associated research methods. For example, as an undergraduate student, my epistemological assumptions were closely aligned with positivism / post-positivism, resulting in me being

more accepting of principles (i.e., objective) and methods (i.e., quantitative inquiry) of the natural sciences in order to understand human behaviour. Whereas, more recently I have grown to appreciate the value of other modes of inquiry (i.e., qualitative) for informing practice (e.g., humanistic support frameworks). To achieve this, and as a result of the highly personalised nature of my development over the past ten years, methods for extracting meaningful information from experiences were considered appropriate. Indeed, the ability to impart information through personalised accounts can reveal a great deal about the complexities of lived experiences, including associated emotions, feelings, behaviours and motivations as they change through time (Smith & Sparkes, 2009). Therefore, the dominant research method utilised as part of the present study was qualitative in nature and presented as an autoethnography.

Autoethnography as Narrative Inquiry

The method of inquiry in this study, consisted mainly of individual narratives that were collected through detailed reflective diaries. Such narratives were considered useful for allowing the reader to gain a deeper appreciation of my complex, subjective perceptions, as well as intentions, patterns of reasoning, and attempts by me to find meaning in my personal experiences (Woike, 2008). The justification of using methods underpinned by narrative psychology for illuminating the impact of personal experiences is further supported by Polkinghorne (1988) who suggested that, "Experiences are meaningful and human behaviour is generated from and informed by this meaningfulness. Thus, the study of human behaviour needs to include an exploration of the meaning systems that form human experience" (p. 1).

Whilst still a relatively novel form of enquiry, narrative research methods, and specifically autoethnographies, have been used by a number of scholars to investigate the multitude of issues relating to professional practice in sport psychology (Gilbourne, 2002; Gilbourne & Richardson, 2006; Holt & Strean, 2001; Lindsay et al., 2007; Tonn & Harmison,

2004). This acceptance of alternative forms of qualitative inquiry appears to be a result of calls for researchers to expand the methodological repertoire within the field (Carless & Sparkes, 2008; Smith & Sparkes, 2009; Sparkes & Douglas, 2007). However, Smith and Sparkes explicitly acknowledged that it is not intended to be used at the expense of positivistic, post-positivistic or neorealist research approaches that dominate applied sport psychology research, but instead alongside these more traditional paradigms to allow for elaboration of certain issues and stimulating further thought on the topic under investigation. Finally, as applied sport psychology consists of a series of interactions between clients and practitioner, both of whom are considered relational beings, this research method encourages a focus on the ways that these relations shape, enable and constrain lives. Indeed, Smith and Sparkes (2009) emphasise that using autoenthnography affords researchers the opportunity to closely examine such issues of relatedness.

As with any research methodology, issues pertaining to rigor need to be considered so that the trustworthiness of findings can be ensured. Traditionally, critics of autoethnographies have warned against their suitability as a reputable research method (Le Roux, 2016). Indeed, it has been suggested that they fail to meet appropriate academic criteria, including validity and generalisability (Collinson & Hockey, 2005). Given the qualitative nature of autoethnographies, as utilised within the present study, it seems logical that traditional criteria more widely accepted within qualitative research should be applied. Typically, these criteria of trustworthiness include credibility, dependability, transferability and confirmability (Patton, 2002). However, according to Sparkes (1998), although ethnographies fall under the umbrella of qualitative research, they may emerge from a diverse philosophical standpoint to other modes of inquiry. Therefore, merely applying set criteria appears troublesome and nonsensical. Indeed, Sparkes (1998, p.381) further contended that “there can be no canonical approach to this form of inquiry, no recipes or rigid formulas”. Supporters of

autoethnographies do not suggest that no criteria is applied at all, but rather that researchers should seek to reach agreement via rigorous, free, open and ongoing dialogue (Collinson & Hockey, 2005). In doing so, the key aim of researchers is to avoid engaging in naval-gazing and self-indulgence (Coffey, 1999). In line with suggestions by Ragan (2000), the present study attempted to ensure rigor via four evaluation criteria. These included, "establishing (a) whether the narrative is interestingly and accurately written; (b) whether the fundamental issue addressed in the narrative is important; (c) whether readers will learn anything from reading the narrative; and (d) whether it has the potential to make a contribution to the academic discipline as well as to scholarly enquiry in general" (p. 230). Specifically, methods used included carrying out a comprehensive review of the literature to identify avenues worthy of examination, regular conversations with supervisors regarding protocols for carrying out autoethnographies (peer debriefing), constantly checking and reflecting that narratives accurately present data from numerous sources (e.g., reflective diaries, meeting notes with supervisors, academic assignments).

Narrative Construction: Procedure

The narratives presented herein were constructed following an in-depth review, analysis and reflection of information contained within numerous artefacts, including reflective diaries, structured reflective analysis tasks, academic and professional development assignments, and detailed notes from meetings with supervisors. Utilising contextualised vignettes allowed me draw meaning and links between different aspects of my personal experiences (Mills, 2015). The narratives were organised similarly to approaches adopted elsewhere that combine personal insights linked to reflections, explanations and signposts (academic insights; McMahon & Denin-Thompson, Sparkes, 2004). In doing so, the narratives are intended to provide the reader with relational meaning and understanding between practical accounts and theoretical concepts.

To address the aim of the current paper, whereby I intend to allow the reader to explore the various factors throughout my professional development that shaped my current professional philosophy and how I approach service delivery as an applied practitioner, the autoethnography is presented in four parts and will be organised in accordance with recognised career development models (e.g., Savickas, 2002; Super, 1990). Indeed, Super's (1990) career development model presents five key stages: (a) *Growth* (individual first becomes aware of the a potential career option); (b) *Exploring* (individual begins to crystallize, specify and implement an occupational choice); (c) *Establishment* (efforts are made to secure a long-term place in the chosen career); (d) *Maintenance* (individual seeks continuity and stability; and (e) *Disengagement* (individual begins to decelerate from formal employment). These stages will be used to contextualise my progression so that the reader is able to appreciate at what period in my development each stage occurred. Taking into account how I joined the discipline of applied sport psychology, *transitioning* has been added to the growth stage presented here. Additionally, given that I am actively engaged in a career as an applied practitioner, and believe this will continue for the foreseeable future, the disengagement stage has been purposely excluded.

To allow the reader to easily follow and link my personal journey to Super's (1990) career development model, Table 1 provides a summary of how I progressed, as well as my utilisation of reflective practice at each stage. First, I present a personal background that traces my transition from athlete to sport psychology student. This section will allow the reader to appreciate specific aspects that resulted in the decisions to embark on this transition and provide insights into the motivations for why I wanted to support individuals with their sports careers. Parts two and three map the path of my professional development and explore strategies utilised during my initial training that helped to solidify congruence between the theoretical orientation that continues to inform my practice and professional philosophy,

whilst ensuring that I am cognisant of maintaining effective service delivery. Specifically, part two examines how my education pathway forged the initial approaches used to support athletes and why I believe the techniques I adopted came to be. Part three considers my development during professional training as a neophyte applied sport psychology practitioner and how I facilitated learning opportunities from my experiences, which resulted in me becoming a holistic and hopefully more effective practitioner. The final section explores my subsequent enthusiasm for actively engaging athletes in the support process with the intention that they are able to benefit from learning from their own experiences.

Table 1

Summary of personal development and use of reflective practice mapped against a career development model (Super, 1990).

Career Development Stages	Stage 1: Transitioning	Stage 2: Growth	Stage 3: Exploration	Stage 4: Establishment	Stage 5: Maintenance	Stage 6: Disengagement
Personal Development	Athlete / Student		Undergraduate / Postgraduate Student	Neophyte Practitioner	Advanced Practitioner	Not Applicable
Utilisation of Reflective Practice	Non-existent use of reflective practice due to no knowledge and/or experience of this concept.		Initial introduction to the concept of reflective practice. Appreciation of models, methods and benefits of reflective practice. Minimal use of reflective practice, however, initial attempts were indicative of low level, descriptive reflection skills.	Initial active engagement with reflective practice as a result of BASES Supervised Experience. Rigid structure to reflections and lack of diversification of methods for reflecting on experiences. Use of reflective practice was indicative of basic to intermediate reflection skills.	Ongoing and sustained active engagement with reflective practice. Experimentation with different methods and approaches to reflecting. Use of advanced critical reflection skills. Incorporation of reflective practice elements with clients.	Not Applicable

Collectively, the reader is encouraged to view my experiences presented herein as an *ecology of practice*; that is, all experiences are interdependent, with each influencing and being influenced by one another (Kemmis, Edwards-Groves, Wilkinson, & Hardy, 2012). From this perspective, readers are able to appreciate the interconnections between different

types of interactions and experiences, and how such connectedness leads to an evolving perspective to professional practice (Kemmis, Wilkinson, Hardy, & Edwards-Groves, 2010).

Findings: Autoethnographical Narratives

Transitioning and Growth: Out of the frying pan (as athlete) and into the fire (as student)

Sporting Profile. Prior to pursuing a career as an applied sport psychologist, I competed in a diverse range of sports at various competitive standards. The sport that I excelled most at, having represented teams at amateur and professional levels was association football. During this period as a sportsperson I faced numerous challenges ranging from injury to competitive anxiety to a lack of motivation, and at some points I coped extremely well, whereas at other times I let the demands "get to me" to the point that my performances on the pitch were adversely affected. Coincidentally, my decision to "give up" on the dream of playing football and walk away from the possibility of professional sport was as a result of my inability to cope with a situation that caused me severe distress.

It was at this juncture that I made the decision to attend university, however the process of identifying a course that would interest me, and provide me with career choices was daunting as previously I had never considered anything other than playing professional sport. I reflected on the journey of where I had come from, and how I had arrived at this crossroads in my life. For the first time I considered my sporting ability in more detail than ever before and was struck by how rarely I gave myself credit for my achievements. In addition, during challenging periods I often went "into" myself and became a more introverted performer who played safe instead of striving to demonstrate my ability. Various questions filled my mind. For example, "Were my deficiencies as a player psychological?" or "How do other players seem to cope and perform to the best of their ability when faced with

similar challenges?" The notion that my mind set may have been a contributing factor to my performances had not occurred to me previously. Ordinarily, I turned up, prepared myself and performed. Some days I performed well and on others I was poor. To me, that was sport. Yet, almost never did I reflect on why I performed in the way that I did, or at least not in a way that extracted meaningful and useful information that I could use to ensure that I had learned from mistakes, errors or decisions that I made during performances. Although my ignorance during this period now seems foolhardy, it is perhaps not surprising given the gap that existed between science and football (Brink, Kuyvenhoven, Toering, Jordet, & Frencken, 2018). As was frequently cited within the literature at that time the lack of collaboration between the science and practice was clearly evident (Goldsmith, 2000).

Overview of Higher Education. As a result of my failures as a sportsperson, and due to my growing interest in psychological factors relevant to performance environments I opted to pursue a career in applied sport psychology completing both undergraduate and postgraduate degree programmes in the subject. My studies only served to fuel my desire to progress within the discipline resulting in me subsequently embarking on the British Association of Sport and Exercise Sciences (BASES) Supervised Experience programme in the domain of psychology, following which I applied for and achieved BASES Accreditation in scientific support. During this process I was exposed to, and acquired vast amounts of knowledge (e.g., psychological skills, consultancy frameworks) and gained substantial relevant experiences (e.g., individual athletes, teams, and leadership), that provided the foundations for developing into the practitioner I am today. The landscape during this development was rarely smooth and part of the journey required me to question myself, my practice, and adapt repeatedly along the way.

Exploration: Falling Into the 'Status Quo' Trap

> Sport Psychology – the branch of sport science that seeks to provide answers to questions about human behaviour in sport settings (British Association of Sport and Exercise Science, 2012).

Having successfully enrolled onto a sport psychology undergraduate degree programme, I was introduced to the discipline with the above definition. Indeed, finding the answers that might explain my performances as an athlete was the driving force behind my decision to pursue a career as an applied sport psychologist. If I could understand how and why my thoughts, emotions, feelings and behaviours influenced how I performed, I reasoned I would be able to provide athletes with the kind of support that I never had access to (Thelwell, Greenlees, & Weston, 2006).

From the outset of my higher education pathway I was hooked on the information that was presented by the university lecturers. Of particular interest was the quantity of research interest regarding how various psychological concepts impact on athletic performance (e.g., Hardy, Jones, & Gould, 1996). I absorbed this information as the details resonated with me and I found it exhilarating to be able to relate the meaning I developed to my previous experiences as a performer. Where had this information been when I needed it most? Unfortunately, frustratingly, it had been locked away in academic texts, metaphorically speaking, only for the eyes of those intelligent enough to understand it or those lucky enough to stumble across the literature. Now I had access to this information there was nothing to stop me being an effective applied sport psychology practitioner. Indeed, potential athletes that I may encounter in the future would not have to experience the same frustrations or lack of access to relevant information as I did. In essence, I could be the conduit for them to this much needed information that may be the difference between them receiving adequate support surviving and/or thriving in their chosen sport. What I didn't realise at this stage was

that this empathetic stance I intuitively adopted was saying something about my values and beliefs as an individual (cf. Poczwardowski et al., 2004). It is a pity I didn't realise the significance of these types of views for potentially informing how I might develop as a practitioner (Lindsay et al., 2007).

Initially, it appeared that the primary aim of the lecturers on my course was to develop students' knowledge of psychological concepts and their links to performance. Logically, this underpinning knowledge was required before students could begin *doing* applied sport psychology and so I absorbed the information thinking that soon enough I would be able to help athletes struggling with issues such as dealing with anxiety and enhancing motivation. Indeed, the literature that consumed me for four years presented cause and effect relationships between various psychological concepts, represented by numbers that were interpreted through statistical analysis (cf. Biddle, 1997). I reasoned early on that in order to be an effective sport psychology practitioner it would come down to how I made sense of this information and applied it when confronted with athletes who needed support. What I didn't realise was that how I was learning and acquiring this knowledge during my education was moulding me into a certain type of practitioner. I was following the rules and procedures that I read in academic texts and was taught during my training, which is not uncommon for most novice practitioners in applied sport psychology (Gentner, Fisher, & Wrisberg, 2004). Without a doubt, the CBT perspective to providing applied sport psychology was fervently advocated by my educators. In addition, this approach appeared to reign dominant amongst researchers and practitioners operating within the wider discipline of applied sport psychology at that time (cf. Holt & Strean, 2001). However, this detail caused me no concern, and I cannot remember reflecting or even questioning the approaches, techniques or underlying associated philosophical assumptions that I was being exposed to. There was no need in my mind, as like many other applied sport psychologists, including my lecturers and

supervisors, I could relate to CBT interventions and enjoyed reading and practicing how to break down negative links between cognitions, behaviours, and emotions (Scott & Dryden, 2003).

Advocates of psychological support programmes utilised by applied sport psychology practitioners that are based on CBT models can be easily located in academic texts that line university library shelves (e.g., Hemmings & Holder, 2009; Murphy, 2005). A common feature of these texts is the reliance of practitioners to support athletes by developing their psychological skills in attempts to facilitate change via thought processes and behaviours, with the assumption that there is a direct connection between the two (Hemmings & Holder, 2009). Personally, this connotation rang true and I can recall numerous occasions during my sporting experiences whereby a negative thought or debilitative mind-set resulted in a less than desirable outcome or performance. As a result, understanding psychological skills training became a key element of my early sport psychology education. Whilst my undergraduate programme rarely allowed me to examine the impact of these skills in reality, contrived case studies afforded me ample opportunities to explore the relationship between these skills and various psychological concepts. It would seem that my initial service delivery approach was being formulated, albeit subconsciously (cf. Poczwardowski et al., 2004), which is evidenced below in a quote extracted from the concluding comments of a case study I submitted towards the end of my undergraduate sport psychology degree programme:

> The *key* to psychological support is to educate athletes about the psychological skills needed to train and compete effectively, and to provide sufficient time for them to practice these skills over a period of time.

The adoption of psychological skills training by novice practitioners as the dominant method of service delivery has been recognised elsewhere in the applied sport psychology literature (e.g., Andersen, 2009; Holt & Strean, 2001; Lindsay et al., 2007). Whilst not

uncommon, I was shaping my initial practice that would inform the approaches I would use with prospective athletes. Indeed, without understanding or questioning the philosophical principles associated with CBT orientations that inform psychological skills training, I was restricting the potential effectiveness of my practice (Poczwardowski et al., 2014). What concerns me now, as I reflect on this experience, was why I never questioned these dominant methods. It seems likely that my passive acceptance of approaches to applied sport psychology by significant figures within the discipline was a reflection of my role in sport as an athlete. From my experiences, many of the coaches I encountered were yet to embrace more contemporary athlete-centred approaches advocated presently (Milbrath, 2017). Moreover, coaching-centred approaches were a common feature of the football culture I was involved in, whereby the coach was the central decision maker who guided me as an athlete (Lyle, 2002). As such, I did not have the inclination to query or challenge what I was exposed to when entering the discipline of sport psychology. The issue then, although I did not realise it at the time, was that the narrow philosophy I was developing towards professional practice was only ever likely to result in a disservice to potential clients (cf. Thompson, 1998).

Only now, almost 14 years after completing an undergraduate degree programme in sport psychology am I able to reflect and understand how my applied sport psychology practice was being shaped. I accept that my theoretical orientation (e.g., CBT) during this initial period was being informed and fuelled by the theoretical worldview (e.g., positivist tradition) I was principally exposed to during my time in education. This was not surprising, as professional knowledge within sport psychology and other professions (e.g., health sciences), has traditionally been defined in terms of a positivistic framework (Martens, 1987; Schön, 1987). Schön argued that within this framework, practitioners are seen as instrumental problem solvers who exact solutions by applying theory and techniques derived from systematic scientific knowledge. My propensity to rely on psychological skills as the sole

means to supporting athletes stemmed from the research that I required in order to justify the interventions that I designed. Unsurprisingly, my literature searches often led me directly to what I sought, and what I thought my educators wanted me to unearth. Indeed, the large majority of research studies conducted prior to my enrolment onto an undergraduate programme in 2001 relied heavily on traditional empiricism whereby observation and measurement were at the core of scientific enquiry. To be exact, Biddle (1997) reported that within two major sport psychology journals, traditional quantitative experimental designs accounted for approximately 94% of research studies published.

So this was sport psychology, as I perceived it; a set of theories and models generated by traditional empiricism, informed by a positivistic philosophical worldview, that suggested measurable outputs (e.g., cognitions and/or behaviours) could be predicted or influenced by calculated inputs (e.g., exposure to specific stimuli and/or cognitive processes). As such, my effectiveness as an applied sport psychology practitioner could only be determined by my ability to understand this process and apply the existing theory to issues presented with the clients I encountered. However, according to Römer (2003) this application of theory to practice may be suitable for well-defined and recognisable problems, yet within applied sport psychology problems rarely present themselves in easily definable and resolvable form, thus making the neat application of theory to practice difficult (Anderson et al., 2004).

Early Establishment: Starting Out as a Neophyte Applied Sport Psychology Practitioner

Two modules, undertaken towards the end of my postgraduate qualification, opened my eyes to the wider aspects of service delivery within applied sport psychology. First, a module titled *Counselling Skills for Sport Psychologists* covered in detail various theoretical orientations, which at the time had received less interest in the sport psychology literature (Hemmings & Holder, 2009). I was familiar with these theoretical frameworks (e.g.,

psychodynamic, humanistic, existentialism) from my involvement in more traditional, mainstream psychology modules, however, I had rarely, if ever considered their usefulness for driving my applied sport psychology practice. The postgraduate modules allowed me to consider common sport psychology issues that athletes' experience from a variety of viewpoints. Never before had the expression "there is more than one way to skin a cat" seemed so relevant to me within my prospective career. Indeed, I became more appreciative that applied sport psychology practitioners can offer a multitude of service delivery approaches that are informed by their professional philosophy (Poczwardowski et al., 2004). Yet, to achieve maximum effectiveness they need to release themselves from the shackles of dominant methods within the discipline, and instead, offer a service that is congruent with the situation, environment, and perhaps most importantly, the values, beliefs and behaviours associated with their philosophical standpoint (Lindsay et al., 2007). To be clear, I am not suggesting that these dominant methods are not effective. Indeed, if a CBT framework is in keeping with a practitioner's epistemology, and the adopted techniques and interventions align with the needs of clients they encounter, then their approach to service delivery is likely to be efficacious. However, by being aware of different theoretical frameworks, I felt better placed to make a judgement about the best course of action, and in doing so I was prepared to take a holistic approach to providing psychological support (Poczwardowski et al., 2014).

During the same period a second module, titled *Professional Development and Practice in Sport Psychology* covered contemporary issues pertinent to the profession of sport psychology and it was here that I first considered the importance of utilising one's experiences as opportunities to learn about the practical elements of applied sport psychology. Indeed, I explored the notion that learning is embedded within experiences and that methods for extracting meaningful knowledge needed to be utilised and developed in order to make sense of my role as a practitioner and to drive my future service delivery

(Gibbs, 1988). To achieve this, the module introduced students to the importance of becoming reflective practitioners, which was no coincidence as BASES had recently revised their Supervised Experience programme to place more emphasis on the need for neophyte practitioners to become reflective. It is no surprise that the concept of reflective practice has received growing interest within the sport psychology literature since the early 2000's as researchers advocated its usefulness for developing practitioner self-awareness (Tod et al., 2007) and congruence between professional philosophy and service delivery (Lindsay et al., 2007), with both being recognised as key criteria for ensuring effective practice (Cropley et al., 2010).

Following the completion of these two modules, and armed with both undergraduate and postgraduate degrees it was time to start providing "real life", as opposed to contrived, applied psychology services. I sought direction from various advisors about the best route for progressing with a career in sport psychology, whilst allowing me to provide support services to athletic populations for which there appeared to be two main options: (a) becoming BASES accredited as a Sport and Exercise Scientist, specialising in the discipline of Sport Psychology, or (b) achieving chartered status as a Sport Psychologist with the British Psychological Society (BPS). Due to the BPS's Division of Sport and Exercise Psychology being in its infancy I opted for BASES Accreditation. At the outset, my primary goal for engaging with the BASES Supervised Experience programme was to develop my consultancy skills in order to enhance my effectiveness as an applied practitioner. I assumed that my education in sport psychology already provided me with the requisite knowledge to drive my work forward, and that I merely needed to hone my skills whilst interacting with athletes.

In preparation for undertaking BASES Supervised Experience I focused my attention on the growing body of professional practice literature published in the *Journal of Applied*

Sport Psychology and *The Sport Psychologist* amongst others. However, with the diverse range of skills, approaches, frameworks and philosophies presented within the literature, I was often perplexed about the way in which I should approach my applied practice. It seemed that merely implementing an array of skills (e.g., imagery, self-talk) would not be enough to stand me in good stead for a career as an applied practitioner. Indeed, reviewing work by Hill (2001), Perna, Neyer, Murphy, Ogilvie, and Murphy (1995), Poczwardowski et al. (2004), and Thomas (1990), provided further evidence of my short sightedness and highlighted the importance of framing my professional philosophy in order to inform the technical aspects of my consultancy approach. To this point, any approach that I'd taken to supporting individuals with their issues had been justified from a CBT perspective. The rationales developed were based on sound evidence within the literature and, therefore, in the main I was commended for the approaches I adopted. What was lacking up to this point was a self-evaluation or critique from significant others that challenged my approaches that required me to consider alternative courses of actions (Whitehead, Cropley, Miles, Huntley, & Knowles, 2016). However, looking back, it's not surprising that this didn't happen given the advocacy of CBT within applied sport psychology in the early 2000's (cf. Aoyagi, Cohen, Poczwardowski, Metzler, & Statler, 2017), and the apparent acceptance and propensity for my mentors and supervisors to favour the associated approaches. This conformed with what I had learnt as part of the postgraduate *Counselling Skills for Sport Psychologists* and *Professional Development and Practice in Sport Psychology* modules but still much of the applied examples presented in the literature leaned towards CBT strategies for tackling performance related issues. My unease with this view of athletic support was eventually exacerbated, and brought into focus as a result of a consultation with an athlete whom I had provided support for the best part of four months. For the first time, I realised that having a set of "consultancy

skills" and relying heavily on encouraging the development of psychological skills by athletes would severely limit my ability to become an effective practitioner.

Advanced Establishment: Realising the Importance of Reflective Practice for Shaping my Professional Philosophy

I began working with a 16 year old elite level swimmer at the request of her head coach who was concerned about the athlete as a result of a particularly poor performance at a national qualifying event. Following a series of meetings with the athlete it appeared that her poor performances were associated with her inability to cope with competitive anxiety. Rightly or wrongly, this is what I had been waiting for as a neophyte practitioner, the opportunity to utilise the knowledge and understanding I had acquired through my education to support the athlete, and pleasingly it was with an issue that I was familiar with from a theoretical point of view (cf. Mellalieu, Hanton, & Fletcher, 2006). This was going to be easy, or so I thought. Over a period of four months the service delivery consisted largely of psychological skills training, which the athlete seemed to respond well to. Consultancy sessions during this period were very structured with the content being determined largely by me and as a result of discussions that occurred during previous meetings. This rigid, problem-driven approach has been documented by other neophyte applied sport psychologists elsewhere in the professional development literature (e.g., Cropley et al., 2007; Tod & Bond, 2010), and I was using it as a means of justifying my capabilities to clients, as well as to help me cope with the anxiety I experienced in my new practitioner role. I had often recited the familiar sport psychology mantra, "control the controllables" (Jones, 2012) to athletes who struggled to manage their competitive anxiety symptoms, and here I was allowing the same mantra to drive my service delivery. As long as I directed the session how I had planned, I felt I was in control, which eased the nervousness I was experiencing at the time.

As I developed rapport with the athlete the sessions seemed to play themselves out effortlessly, however, whilst performances in the pool had improved greatly, she still lacked consistency and sporadic unexpected poor performances were not uncommon. Over the course of this period I remained in regular contact with my supervisor who seemed happy with the way that my service delivery was progressing. That said, he continuously encouraged me to reflect on my consultations and to use these experiences to facilitate the learning of, or confirm, existing knowledge. Unexpectedly, I was to realise the importance of my reflections for making sense of situations I had never encountered previously. Following one particularly poor performance the athlete contacted me for an urgent meeting. I planned for the session as I always did and tried to align the meeting with her most recent performance in mind, thinking that the content would be directly linked to her competitive anxiety issues. Notably, the session plan was never utilised as the athlete disclosed information that she was self-harming and had been doing so regularly for over a year. I had never been confronted with this type of issue and never suspected anything like this from the individual who I had spent so much time with. The extract below is taken from a reflection that I completed immediately after the disclosure.

> I was shocked. I knew something was wrong when the meeting started, however, I was confident that if it was down to performance related issues I could at least work through these with the athlete as I had done countless times before. It wasn't. The more the conversation progressed I had a strange sense that something more serious, and possibly out of my comfort zone, was about to be unearthed. I tried not to force the issue, and instead allowed the athlete to direct the session how she wanted. When she disclosed that she was regularly self-harming I was apprehensive about discussing the issue. With performance issues I can usually relate well to them from previous personal sporting experiences or from relevant articles within the literature, however,

> in this moment I could not. I was overwhelmed by my lack of ability to support the athlete in a way that I felt justified my role as an applied sport psychology practitioner. The experience provided me with an insight into real-world issues that are rarely touched upon within sport psychology education programmes or indeed the literature, bar a few notable exceptions. I think perhaps I was seeing my role as an applied practitioner through "rose-tinted lenses" in that I largely thought being a consultant involved supporting athletes with performance issues. I now realise I need to be more sensitive and aware of wider ranging issues that might arise unexpectedly and to use this experience as a learning opportunity for helping me to be better prepared to support athletes with their diverse concerns.

I read over the reflection immediately after writing it and was taken aback by how helpless I felt during the session. My insecurities reared their head and I questioned my ability as a practitioner and whether I was ready to support athletes with real life issues. However, when critiquing the scenario in greater detail with my supervisor, he commended me on how well I coped in the face of such a volatile situation. Reviewing the reflection he focused on one aspect of the entry, which read, "I tried not to force the issue, and instead allowed the athlete to direct the session how she wanted". The significance of this action had passed me by, yet this was the first time I had allowed any athlete to control the session, and it had resulted in her disclosing an issue which I later came to understand had a resounding impact on her swimming performances. It turned out the *athlete* was fine, but the *person* was in turmoil. Had I realised this earlier, she most likely would have disclosed this issue sooner, and thus received appropriate support more readily. Now she had opened up, I needed to determine whether I was equipped to help her receive the support she required.

Clearly, the approaches I tended to advocate were not suitable, and thus I embarked on a journey of self-reflection and re-evaluation about my role as an applied sport psychology

practitioner. This one incident, and subsequent reflection, had set the wheels in motion that facilitated my commitment towards becoming a reflective practitioner, and developing and solidifying a professional philosophy and service delivery that were congruent with my personal values and beliefs. I discussed the notion of client-led support with my supervisor, who encouraged me to review Hill's (2001) *Frameworks for Sport Psychologists* textbook, with particular interest afforded to humanistic approaches to consultancy. This newfound interest in other service delivery approaches had a notable impact on my applied work and as I progressed through the BASES Supervised Experience programme there was a notable difference as to how I supported individuals, and not just merely athletes. I involved clients more in the process as a means to empowering them to identify and challenge issues causing concern, and encouraged them to utilise their coping resources to manage debilitative feelings, thoughts or behaviours. Indeed, supporters of this more client-led approach recognise that empowerment strategies open individual's eyes to their ability to cope with stress, to achieve what they desire and to control their own lives (cf. Maslow, 1970; Rogers, 1974).

The experience with the self-harming swimmer occurred at the outset of my initial professional development. Evidence of my evolving theoretical orientation and professional philosophy are highlighted throughout my personal reflections that I carried out during the BASES Supervised Experience programme. One example comes from support work I conducted with an athlete who had a suspected eating disorder. The quotes below are extracts from my reflections, and feedback from my supervisor, which indicate just how far I had progressed as a more holistic practitioner:

> FIRST AUTHOR: The approach I used to support the athlete felt more akin to counselling, rather than problem solving. Although I had a hunch what the key issue was, I didn't pursue it directly and instead conversed about the athlete's experiences

in general, covering his home life, his school life, and eventually his athletic life. The idea for this approach was that the issue may have been of a sensitive nature for the athlete, and therefore I felt it more appropriate to allow the individual to open up when *he* deemed it necessary.

SUPERVISOR: I agree with the approach you adopted in this situation and your ability to identify the need to take a more counselling stance shows a clear development in your aesthetical knowledge (the ability to appreciate the situation). It would appear that in doing so you made it clear to athlete that he is at the centre of the applied sport psychology process.

The athlete did open up and soon disclosed the main reason why he sought psychological support. Previously, my potential reaction to such a disclosure would have caused me concern, yet in this moment I remained calm and continued to allow the individual to direct the conversation as he wished. It was becoming more obvious to me that my previous experiences, and the knowledge and understanding I gained were helping me to become a more relaxed, flexible, adaptable, and ultimately autonomous in my practice (Cropley et al., 2007; Lindsay et al., 2007; Tod & Bond, 2010).

Perhaps during my initial period as a probationary applied practitioner I might have reacted more overtly in the face of an issue like an eating disorder, which was the issue presented by the individual referred to above. Instead, I allowed him to explore this issue further without jumping to immediate conclusions. Without trying to solve the problem, I was able to remain calm and more focused than I might have previously, which seemed to have the desired effect. Once the individual realised that he was being accepted without judgement, he was more positive about addressing the issues and exploring ways of dealing with it.

Maintenance: Challenging the Status Quo

The information presented in the preceding *Growth*, *Exploring*, *Initial Establishment* and *Advanced Establishment* sections clearly highlights my evolving approach to providing applied support in practice. Whilst, there are too many specific examples to mention throughout my career that will have contributed to this process, general themes have emerged that pinpoint my desire to adapt. Specifically, these can be grouped together under general categories that outline the personal tensions and dilemmas that I have wrestled with, which have shaped who I am today. These include: (a) my inability for coping with performance / sport related issues I encountered; (b) the lack of support and/or access to information for helping me rationalise issues faced; (c) my inability to challenge, and dissatisfaction with authority reflective of autocratic support, rather than athlete-centred approaches; (d) my empathetic nature and keenness to help those in need; and (e) my feelings of inadequacy for supporting individuals with issues unrelated to performance or their role in sport. Although these issues have surfaced at differing stages of my development, they are clearly suggestive of values and beliefs that I hold dear. Most, if not all of these issues were as a result of me being a passive recipient of support (as an athlete) or information (as a student). Had I been empowered, or taken greater ownership of my circumstances challenging the status quo may have happened sooner. The fundamental premise of the humanistic perspective for offering support is that each individual has inbuilt ability to cope with issues, to achieve what they desire and to control their lives (cf. Maslow, 1970; Rogers, 1974). Only now, having developed over many years and reflected on countless experiences do I recognise that I am able to support individuals by encouraging them to take ownership. This isn't to suggest that I have disregarded other frameworks altogether. Instead, I now view the values of alternative perspectives through the prism of humanism for determining how methods and techniques can be integrated into support services based on the individual's request. Indeed, it is an

individual's personal perceptions and assessment of their own abilities, behaviour and personality that equips them with knowledge for altering their circumstances (King, 2007). This approach is being recognised and advocated more regularly within the sporting domain with strategies for incorporating principles of humanistic psychology being explored (e.g., Faull & Cropley, 2009). The intention here is to empower performers to be active participants in their personal and athletic development and for providing them with a holistic skillset for managing issues faced (see Kidman, 2010 for a detailed review).

One such strategy is that of athlete-driven reflective practice, which encourages performers to interact with their learning within a sport-specific environment. According to Richards et al. (2009), this interaction enables athletes to ask more critical questions of themselves and their experiences on the premise that meaningful knowledge can be extracted and learned from for directing future thought patterns, emotions, decisions, behaviours and performances. Whilst reflective practice has enjoyed continued interest over the past decade, less is known about the benefits of developing reflective skills of sports performers. However, preliminary investigations with athletic populations offer positive indications that reflective practice may be useful for enhancing performers self-efficacy (Faull & Cropley, 2009), managing competitive anxiety symptoms (Hanton, Cropley, & Lee, 2009), and empowering self-regulated learning (Cleary & Zimmerman, 2001).

Justification for engaging individuals I support with a reflective framework is underpinned by experiential learning and emanates from Hanton and Jones' (1999) seminal research which emphasised the importance that elite level athletes placed on learning from a range of experiences in order to develop effective strategies for coping with stressful situations. Indeed, by using a problem-based approach to learning, athletes are able to rationalise and deal with various issues effectively without allowing them to fester and thus influence imminent training sessions or competition performances (Faull & Cropley, 2009).

Whilst the initial research focussing on reflective practices with athletic populations is encouraging, practitioners should not assume that all athletes have the requisite skills to reflect effectively. Providing athletes with support about *how* to reflect is paramount, if the aim of engaging them in the reflective process is to allow a greater understanding and exploration of their experiences. Indeed, Barnett and O'Mahoney (2006) emphasised the necessity for experienced reflective practitioners to provide on-going guidance for novices in order to add depth and clarity to reflections. Thus, for us as applied sport psychologists to take full advantage of the reported benefits of incorporating reflective practice with our clients, we need to invest time and effort in becoming effective, reflective practitioners.

General Discussion and Conclusion

This chapter aimed to add to the existing professional practice literature that has examined the developmental processes applied sport psychologists pass through towards becoming potentially effective practitioners. Indeed, previous research has explored the usefulness of incorporating strategies, namely reflective practice, that allow applied sport psychologists to learn from the multitude of experiences they are exposed to within their professional capacity (Cropley, Baldock, Mellalieu, Neil, Wagstaff, & Wadey, 2016; McDougall et al., 2015). A benefit of which, is the congruence that is obtained between professional philosophy and theoretical orientation that allows for practitioners to operate in a way that is closely aligned with their ideologies, values and beliefs (Lindsay et al., 2007; McEwan & Tod, 2015). Where the present study differs from those within the current available literature is that it addresses two key limitations. First, whilst there is acknowledgement of longitudinal examinations in the literature (e.g., Tod & Bond, 2010), these studies have tended to focus on the period during and/or immediately after obtaining professional accreditation or licensure. Whereas, the present paper considers the author's journey over a 15 year period from the decision to embark on studying sport psychology to

committing to a career as an applied sport psychologist. Second, the paper considers how the benefits of reflective practice attributed to the professional development of applied practitioners may be transferable and appropriate for athletes' development, a concept that has received minimal interest currently. The implications of addressing these two limitations will be the focus of this discussion.

Attainment of effectiveness as an applied practitioner, regardless of discipline, is rarely a passive or automatic process (Cropley et al., 2010). Indeed, this study has illustrated the dynamic developmental process, which requires personal exploration and growth, with a commitment to constantly strive for enhanced self-awareness so that flaws in one's service delivery are open to critique for future improvement (Anderson, Knowles & Gilbourne, 2004). This notion is recognised elsewhere within the applied sport psychology literature with researchers examining factors considered relevant to the professional development of practitioners (cf. Cropley & Hanton, 2011). Where the present paper builds on the available literature is that it explores the developmental process over an extended period of time in an attempt to understand how experiences encountered at various phases of the career spectrum contribute to the preference of service delivery approaches and methods (Tod, 2007).

Integral to such career development models, is the acknowledgment that each phase of the development process cannot be considered as mutually exclusive. Rather, the intertwinement of experiences at each phase of the development process should be examined with recognition that knowledge gained from individual situations are likely to impact on practitioners' involvement in future experiences (Savickas, 2002; Super, 1990). Indeed, Tod (2007) suggested that in order to have a greater understanding of how service delivery practices are shaped throughout the professional career-cycle researchers should explore practitioners' early experiences, even those that occurred prior to pursuing applied sport psychology. Herein, the present paper provides this relationship between past experiences

and present practices, whereby the author's discontent with being largely a passive learner as a sportsperson resulted in a sense of frustration that paralleled how he felt as a neophyte practitioner trying to adhere to a professional philosophy that he was not comfortable with. As a result of the negative perceived outcomes of his early experiences and acceptance of not being an empowered learner, subsequent experiences that initiated such emotions and feelings fuelled a period of critical reflection that required the author to explore alternative means to providing a professional service.

By exploring an extended period of the professional development process, it is hoped that the reader is able to determine how factors that impacted on me have influenced my decisions regarding practice choices as an applied sport psychologist (see Table 1). Taking Rønnestad and Skovholt (2012) model into account, it would appear that I have, to date, progressed through five of the six phases from *Lay Helper* (the years before formally enrolling on a degree programme) to *Experienced Professional* (the period where practitioners attempt to develop congruence between their therapeutic roles and personalities). Throughout this period, common issues related to my learning preferences have reared themselves at each phase. For example, my dissatisfaction with taking a passive role as a learner whilst sportsperson was again reignited during my period in higher education and as a novice practitioner, whereby I felt compelled to conform with the applied sport psychology norm of operating within a CBT framework. However, instead of looking back regretfully at what could be different, the former experience provided motivation during the latter period to take control of my personal learning preferences and seek methods that encouraged more active involvement in the process (e.g., reflective practice). Yet, this is not the end of the cycle as decisions in the present are still being influenced by progression through these initial phases of the career spectrum. My present advocacy for engaging clients in the reflective learning process clearly stems from my use of reflective practice. To support

the contentions of Tod (2007) and Tod and Bond (2010), the impact of early life experiences on future practice choices provides an interesting avenue of exploration for researchers, especially as these relationships may enhance practitioners' self-awareness and understanding of why and how certain decisions are brought about (Martindale & Collins, 2013).

Although the insights presented in the paper raise important professional development implications, limitations of the research design used should be considered. Specifically, it is recognised that the qualitative enquiry used, namely autoethonography, for examining uses of reflective practice does not necessarily address the calls within the sport psychology discipline for empirical evidence that the assertions of developing reflective skills actually work (Cropley et al., 2007). To this end, Smith and Sparkes (2009) warned against using such narrative methodologies at the expense of more objective reasoning. Instead they suggest that they should be used in conjunction with empirical investigations to gain a better understanding of phenomena under investigation. Therefore, future research would do well to consider whether reflective practice interventions have an impact on objectively assessed practitioner effectiveness criteria (Cropley et al., 2010), or whether the reported benefits of pursuing congruence between professional philosophies and service delivery methods improves clients' satisfaction with support programmes provided (Tod, 2007). On both accounts, such research would provide practitioners and researchers with a better understanding of *what* and *how* reflective practice improves effectiveness to support the existing literature that has attempted to outline *why* being a reflective practitioner is considered paramount for the modern day applied practitioner.

The knowledge and understanding gained from this study regarding principles related to the effective use and adoption of reflective practice offers interesting avenues of exploration. Indeed, the benefits that reflective practice contributed to my professional development were not expected at the outset of my journey. It was only when I was already

significantly embedded in the process that I initially became aware of reflective practice. Even then, the journey toward becoming a competent reflective practitioner, whereby noticeable changes were evident took a significant amount of time. Essentially, to get to the point where reflective practice was deemed beneficial required a theoretical and operational understanding of the concept, a critique and exploration of methods for using reflective practice, ongoing mentoring, and an evaluation of myself as an applied and reflective practitioner. However, having passed through the process I feel that I am in a position to condense what I have learned into a systematic programme that can be tailored to diverse contexts. As such, the experiences I have gained, as presented in this chapter, provides a foundational platform for supporting applied practitioners with their professional development endeavours. Specifically, Chapter 6 (Study 2) presents an examination of a reflective practice intervention with a specific applied practice population.

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CHAPTER 6

STUDY 2

An investigation into the effectiveness of a reflective practice intervention for facilitating positive change to health professionals' practice behaviours

Abstract

Whilst the value of reflective practice for the development of service-delivery effectiveness has been widely reported, much of the evidence upon which these claims is based is anecdotal in nature. Additionally, this research has largely failed to assess direct changes in factors associated with effective practice. In an attempt to address these issues, this study aimed to empirically examine the impact of a reflective practice intervention on the enhancement of reflective skills and subsequent developments in positive practice behaviours (e.g., communication skills). Utilising a quasi-experimental multiple-baseline crossover design, 20 accredited dieticians were recruited to one of two groups. Both groups were exposed to three reflective practice treatments and three control periods, alternating between these conditions until participants had completed all phases of the intervention across a period of 20 weeks. Baseline and post-intervention measures of reflective (e.g., Reflection Questionnaire & Reflection-in-learning Scale) and communication skills (e.g., DIET-COMMS & Dieticians' Interviewing Rating Scale) were administered to assess the value of the intervention. Separate statistical analyses were conducted for process and outcome measures. Initial analyses of process measures involved a series of 2 (group) x 3 (treatment type) MANOVA's, with repeated measures on the second factor. Outcome measures were analysed using a series of 2 (group) x 2 (time) MANOVA's, with repeated measures on the second factor. For reflective skills results indicated a significant difference between experimental and control reflection scores over the treatment period [Pillai's trace = 0.68, $F(10, 29) = 6.28$, $p < 0.05$]. Follow-up univariate tests indicated that there was a significant intervention effect for Habitual Action [$F(2, 76) = 8.97$, $p < 0.05$], Reflection [$F(2, 76) = 36.71$, $p < 0.05$], Critical Reflection [$F(2, 76) = 51.68$, $p < 0.05$], and Reflection-in-learning [$F(2, 76) = 206.04$, $p < 0.05$]. For communication skills there was a significant intervention effect for Listening and Rapport [$F(1, 18) = 131.11$, $p < 0.05$], Questioning Skills DIRSQS [$F(1, 18) = 158.88$, $p < 0.05$], Comprehensiveness [$F(1, 18) = 44.74$, $p < 0.05$], Organisation [$F(1, 18) = 75.60$, $p < 0.05$], Transitional Statements [$F(1, 18) = 46.66$, $p < 0.05$], and Approach to Planning and Education [$F(1, 18) = 138.84$, $p < 0.05$]. In summary, the findings indicated that the intervention was successful for improving participants' reflective skills, and that such improvements contributed towards more favourable practice behaviours.

An investigation into the effectiveness of a reflective practice intervention for facilitating positive change to health professionals' practice behaviours

Chapter 4 provided a detailed summary of the health related issues facing the United Arab Emirates (UAE). In short, the rapid urbanisation of the (UAE) since the 1960's has resulted in lifestyle transitions that are in stark contrasts to the local populations semi-nomadic traditions. A downside of these changes is that the UAE presently has one of the highest rates of overweight and obesity prevalence globally (Ng, Fleming, Robinson et al., 2014). In attempts to tackle overweight and obesity issues the UAE Government have invested heavily in implementing preventative healthcare services (see Chapter 4 for a full review). As is common across a number of professional domains (e.g., financial services, education), such initiatives have resulted in a situation that has encouraged expatriate professionals to work and reside in country, utilising their expertise to implement and develop infrastructures that contribute to future socioeconomic sustainability and/or growth (Al-Ali, 2008).

One such initiative has seen the emergence of a National Service Physical Readiness (NSPR) initiative, which offers exclusive expert support to achieve the mission of improving the health, fitness, physical performance and wellbeing of individuals enrolled on the compulsory National Service Military Programme. Services are divided across five departments, who work collaboratively within a multidisciplinary framework to provide holistic public health support. The staffing of these departments comprises a mixture of health promoting professionals, including sport and exercise scientists, health promotion and behaviour-change specialists, health educators, nutritionists, dieticians, sports medicine consultants, physiotherapists and exercise therapists. In line with other developing organisations within the region, the staffing structure of the centre consists of a senior management team, made up of predominantly western

educated/trained professionals. Responsibilities include overseeing, managing and training junior staff, constituting primarily of recently qualified UAE Graduates. This structure is in accordance with a government-endorsed initiative; namely Emiratisation, which aims to ensure meaningful employment opportunities for all UAE Nationals (Al-Ali, 2008). It is hoped, that by exposing local workforces to internationally accepted best practices, whereby senior management are a conduit for passing on knowledge, experience and expertise, future generations will be adequately equipped to manage and operate existing sustainable organisations. To this end, there is an ever-growing responsibility for organisations within the UAE to ensure that training opportunities are readily available for all staff, to ensure that professional services within the UAE correlate with those offered/expected globally. In particular, and aligned to the purpose of this research study, continued professional development (CPD) training principles need to consider contemporary professional practice requirements, cemented with a sound and rigorous evidence-base.

The evolving and developing nature of health professions within the UAE has resulted in many higher education academic institutions providing courses that are primarily based on those offered elsewhere internationally (e.g., United Kingdom, United States of America). In addition, relevant authorities within the UAE are readily introducing licensure requirements in attempts to regulate numerous health related professions (e.g., Abu Dhabi Health Authority, Dubai Health Authority). If progress of professional regulations of health professions mimics other industry trends within the UAE, then it is likely that educational and developmental processes accepted globally will be adopted with the local workforce. In preparation for this eventuality, the NSPR has been tasked with ensuring that training needs of local staff are closely aligned with internationally recognised best practices and standards. In doing so, all staff will be provided

with ongoing support to allow them to develop their professional practise ethically, safely and effectively. As such, and in keeping with many health profession-regulating organisations around the world, a competency-based model to training has been employed within the NSPR.

Competency-Based CPD

With respect to CPD, competency-based approaches have been embraced as a process central to the professionalisation of numerous support services, including public health and its related disciplinary groups (Brown, Maryman, & Collins, 2017; Jonsdottir, Hughes, Thorsdottir, & Yngve, 2011). The propensity to base CPD on a competency-based model is in accordance with Knowles's (1990) Lifelong Learning Principles, whereby the purpose of education for adult learners is to facilitate the development of knowledge, understanding and application of skills required for performance in chosen career environments. Further, it is argued that competency standards provide the architecture for workforce development by codifying knowledge, skills and attitudes necessary to practice effectively (Hughes, Shrimpton, Recine, & Margetts, 2011). The utility of competency standards as a tool for workforce development is increasingly recognised worldwide across a multitude of professional disciplines (de Almeida, Oliveira, Monteiro, de Medeiros, & Recine, 2018; Fletcher & Maher, 2014). Indeed, a review of professional requirements for each of the professions operating within the Physical Readiness Centre's (PRC) clearly highlights this.

Health Profession Specific Competencies

Cross-examining the professional requirements of various health professions (e.g., sport and exercise science, nutrition and dietetics, physiotherapy, psychology) indicates numerous commonalities in the competencies required to develop as a competent applied practitioner. This is unsurprising as competency frameworks are primarily adopted as a means to enhance the

professionalism of individuals operating within a specific domain by setting out standards which have to be achieved and adhered to in order to protect members of the public. These standards set out what a trainee must know, understand and be able to do prior to working autonomously with individuals seeking support services (e.g., Health and Care Professions Council [HCPC], 2015; Appendix 1).

Whilst similarities exist regarding competency categories across health professions, the relevant knowledge and application of skills required of practitioners remain profession-specific. However, one area that is consistent, as well as transferable, across domains is the need for professionals to continually review and self-evaluate their practice. For example, the HCPC insists that *Practitioner Psychologists* and *Dieticians* should "be able to reflect on and review practice" as part of their Standards of Proficiency requirements (HCPC, 2013, 2015). In addition, the British Association for Sport and Exercise Sciences (BASES) stipulates that those wishing to become accredited practitioners need to demonstrate competencies for *Development of own Practice – Understanding the value of Reflection on Practice* (BASES, 2019), whilst the Association for Nutrition, under the competency titled Professional Conduct, require individuals to engage with the "evaluation of own practice against best practice standards, guidelines and protocols" (Association for Nutrition, 2013) in order to be admitted onto the United Kingdom Voluntary Register for Nutritionists (UKVRN). Explicit, across all professional requirements for those health professions operating out of the PRCs, is the need for practitioners to develop their critical reflection capabilities in order to effectively and adequately evaluate their practice.

Reflective practice with public health professionals. The importance of reflecting on experiences is frequently noted in the health promotion literature. Indeed, the ability to reflect is regarded by many as an essential characteristic for achieving and maintaining professional

competence (Davy et al., 2015). Advocates assert that the emergence of reflective practice is part of a change that acknowledges the need for health promotion practitioners to act and think professionally as an integral part of their ongoing learning throughout their careers, yet ensuring the integration of theory and practice from the outset (e.g., Asselin, 2011; Bennetts, Elliston, & Maconachie, 2012). However, whilst the requirement for public health professionals to develop as reflective practitioners is viewed as a positive movement towards enhanced professionalism, the evidence-base to support its usefulness in practice is largely theoretical, with limited empirical investigations identified within the literature (Jayatilleke & Mackie, 2013; Mann et al., 2009). Indeed, Fleming (2007) noted that whilst there is a prominent empowerment agenda within the health promotion discipline, which encourages practitioners to take ownership of their self-evaluations, the art of reflection is still largely neglected. As with other domains (e.g., Sport and Exercise Science), the resistance to "buy-in" to reflective practice may be a result of a lack of confidence regarding the benefits for improving practice effectiveness (cf. Picknell, Cropley, Hanton, & Mellalieu, 2014).

The initial evidence, albeit limited, for the benefits of reflective practice by health professionals is promising. Indeed, evidence suggests that reflective skills are developmental (e.g., Duke & Appleton, 2000; Sobral, 2000; Williams & Wessel, 2004), associated with enhanced learning (e.g., Sobral, 2001), and can result in improved cognitions, decisions and behaviours within a practical context (e.g., Mamede, Schmidt, & Penaforte, 2008; Peden-McAlpine, Tomlinson, Forneris, Genck, & Meiers, 2005). Given the lack of empirical investigation into the efficacy of reflective practice for professional development, Mann et al.'s (2009) call for future research appears to maintain its relevance:

The very nature of reflective practice makes its quantification challenging. Yet, as

> understanding of reflection develops and the field matures, there will be a need for studies with rigorous designs that will allow us to evaluate the effect of different educational strategies to promote its development. Creative and disciplined application of a range of study designs and methods will be required to affect this next stage of understanding this element of practice (p. 615).

In support of Mann's (2009) contention, a recent expert statement published by BASES further emphasised the lack of a more encompassing evidence-base as a limitation of the reflective practice literature (Huntley, Cropley, Knowles, & Miles, 2019).

Reflective practice in the UAE. Whilst, the benefits of reflective practice for health practitioners are well documented, the inclusion of this largely "Western" developed concept into the education and professional development of individuals from a primarily Arabic-Islamic background needs to be carefully considered. Indeed, Richardson (2004) issued concern as to whether reflective practices, as incorporated within education programmes across much of the developed world, were appropriately congruent with traditions, namely values and beliefs, related to this culture. Specifically, she argued that cultural values represent powerful constraints on individual behaviour, which could limit the success of reflective practices. Of particular concern for Richardson (2004) were the male-dominated social structures that students she engaged with belonged, which she felt oppressed females' freedom of expression. This point is especially poignant when considering the qualities (e.g., open mindedness) and skills (e.g., problem-solving) that reflective approaches to learning encourage. Indeed, such qualities and skills would appear to be a contradiction to the traditional behaviours expected of females living by Arabic-Islamic principles. When taking into account that over 80% of UAE employees within

the Ministry of Health are female (Salloum, 2003), Richardson's (2004) concerns for the usefulness of reflective practice are worth noting.

Over the past decade, evidence has begun to emerge supporting the inclusion of reflective practice with UAE Nationals (e.g., Clarke & Otaky, 2006; Yassaei, 2012). Indeed, Clarke and Otaky (2006) provide examples of students enrolled on a Bachelor of Education degree in the UAE who have embraced critical thinking and reflective practice, whilst demonstrating self-awareness of their capacity for growth, development and change. In addition, Yassaei (2012) conducted follow-up interviews with post-graduate students previously enrolled on a Masters in Teaching English to Speakers of Other Languages (MATESOL). Anecdotal accounts included within Yessaei's article suggested that all participants who engaged with reflective practices during their studies continued to reflect in order to make sense and new meaning from their experiences as newly qualified teachers. In light of the evidence provided for including reflective practice with UAE Nationals, Richardson's (2004) concerns regarding a potential incongruence between Arabic-Islamic culture and the key principles of reflective practice appear to be unfounded. Indeed, Clarke and Otaky (2006) criticise those who all too easily view culture as a hindering constraint and obstacle to practitioners' engagement with reflective practice. That said, as with any new learning paradigm, reflective practice with this population should not be transferred uncritically from its original roots. Instead, the principles, methods and types of reflective practices incorporated with the local community need to be filtered into the culture by taking into account day-to-day traditions so as to enhance relational meaning.

Research Rationale and Aims

The preceding information acknowledges the need for the training of health professionals in the UAE to be closely aligned with international standards and guidelines. However, methods

for facilitating developmental changes to professional practice should not be "shoe-horned" into training programmes on the assumption that positive outcomes noted elsewhere should be generalisable to all regions, nationalities and cultures. This is especially poignant given the highlighted shortcomings regarding the general lack of empirical evidence within the wider literature relating to reflective practice (e.g., Mann et al., 2009; Picknell et al., 2014; Tod, Hutter, & Eubank, 2017). For local health practitioners to truly embrace changes to professional development initiatives, the benefits of reflective practice will need to be demonstrable and replicable as part of robust research designs. Further, researchers have previously examined the benefits of reflective practice interventions utilising designs that are either *process-oriented* or *outcome-oriented* (Picknell et al., 2014). Process-oriented investigations are concerned with the development of reflective skills amongst participants following their involvement on education programmes, which include activities designed to provoke reflective thinking (e.g., Duke & Appleton, 2000; Sobral, 2000). The intention of this process-orientated research is based on the assumption that enhanced reflexivity will ultimately improve professional practice. Outcome-oriented research typically examines reflective principles as independent variables and their impact on discipline specific dependant variables (e.g., Mamede, van Gog, van den Berge, Rikers, van Saase, van Guldener, & Schmidt, 2010). The purpose of outcome-orientated research has been to provide evidence, by way of improved outcomes in practice, that reflecting-on-practice actually works. A limitation of this body of research has been the lack of consideration for the combining of process- and outcome-oriented designs. Such an approach should extend the present evidence-base and provide practitioners with confidence that reflective skills are not only developmental, but also worthwhile in that improved reflective skills have value in improving the effectiveness of professional practice. As such, the aim of the current study was to utilise an

experimental research design in an attempt to add to the limited empirical evidence-base regarding the benefits of reflective practice for health practitioners. To achieve this, the specific objectives of the study were to determine the effectiveness of a multimodal reflective practice intervention for: (a) facilitating the use and development of more advanced reflective skills by health practitioners; and (b) improving practitioner effectiveness as a result of improved reflective skills. In attending to these objectives, it was hoped that applied practitioners who remain sceptical regarding the value of reflective practice would have access to evidence previously unavailable. In addition, the structure of this study should encourage researchers and training provides to accept that the value of reflective practice is not driven by observable outcomes. Rather, the relationship between process measures and outcomes provides interesting insights into the effectiveness of reflective practice programmes.

Method

Study Design

In an attempt to address the shortcomings identified within the existing reflective practice literature, more rigorous research designs that allow researchers and practitioners to evaluate the effect of different reflective learning strategies have been advocated (Huntley et al., 2019; Mann et al., 2009; Tod et al., 2017). Recently, Cropley, Hanton, Miles, Niven, and Dohme (2020) utilised a multiple baseline single-subject research design to investigate the impact of a reflective practice intervention for improving the effectiveness of applied sport psychologists' service delivery. The justification for the research design employed was based on the assumption that a change in behaviours following a treatment, and not the passage of time or extraneous factors, caused observed changes. In addition, this design allowed participants to act as their own control, which is considered a unique feature amongst the reflective practice literature. Whilst a

promising addition to the reflective practice literature, it is worth noting that this type of research design has previously been labelled as an *effectiveness method* and is considered useful for evaluating practice (Anderson, Miles, Mahoney, & Robinson, 2002). On the other hand, Anderson et al. (2002) argued that such designs need to be combined with *evaluation research* that utilises experimental methods (e.g., control groups) with the intention of examining cause and effect relationships between support programmes (i.e., reflective practice interventions) and measurable outcomes (i.e., enhanced reflective skills).

To that end, the present study utilised a quasi-experimental multiple-baseline crossover design, providing all participants exposure to two or more treatments (Loius, Lavori, Bailar, & Polansky, 1984). Crossover designs allow the response of a participant to an initial treatment to be contrasted with the same individual's response to subsequent treatments (Wellek & Blettner, 2012). Such a design has two potential benefits when taking into consideration the constraints of recruiting participants from a single organisation, which was the case here. First, removing participant variation in this way makes crossover research potentially more efficient than similar sized, parallel group designs in which individuals are exposed to only one treatment (Sibbald & Roberts, 1998). As a result, fewer participants are needed compared to randomised control trials (Jones & Kenward, 2014). Second, involving all participants to identical treatments (reflective practice interventions), albeit at different time periods, rather than being assigned to an experimental or control group, is in accordance with calls for professional development research that does not discriminate by non-exposure to a potentially beneficial intervention (British Educational Research Association, 2018).

A combination of quantitative and qualitative research methods were used for the present study. This pragmatic approach of using more than one line of enquiry is suggested to be

particularly suitable when investigating novel research questions (Giacobbi, Poczwardowski, & Hager, 2005). Due to the limited research attention afforded to the relationship between enhanced reflective skills and outcome measures of professional practice, combining quantitative and qualitative approaches provided the researcher an opportunity to fully explore the topic under investigation and explain the meanings of potential findings (Smith & Sparkes, 2009; Smith, 2010). The quantitative aspect of the study investigated the development of participants' reflective skills (*process*) and alterations to practice variables following their involvement in a reflective practice intervention (*outcome*). The decision to make use of quantitative data within the proposed study was based on calls for more empirically based research methods when examining reflective practice. Indeed, previous research exploring the benefits of reflective practice has been predominantly qualitative in nature. As such, two key limitations have been realised within the existing research. First, Smith and Sparkes (2009) warned against the use of qualitative inquiry at the expense *of*, rather than in conjunction *with*, quantitative methods in order to allow for elaboration of certain issues and stimulating further thought on the topic under investigation. Second, relying predominantly on qualitative research designs may constrain the generalisability of findings without the scrutiny that control groups afford for demonstrating the impact of interventions on dependant variables under investigation (Weinberg & Comar, 1994).

In keeping with Smith and Sparkes' (2009) advice of not separating quantitative and qualitative forms of research inquiry to allow for elaboration of under-researched issues, social validation interviews were also used in the present study. This research method has been used extensively when examining changes to behaviours, thought processes and performance following applied or clinical interventions (e.g., Cropley et al., 2020; Mellalieu, Hanton, & Thomas, 2009). The purpose of using social validation within the present investigation was to

engage with recipients of support services to provide information about the social acceptability of the intervention goals, procedures and outcomes (Kazdin, 1977). Adopting this approach was also considered useful as a means for not only determining participants' satisfaction, but also their perceptions of their client's satisfaction with their services, following their involvement in the reflective practice intervention. Indeed, Milne (1987) contended that social validity assessments offer an appropriate framework for examining satisfaction. Within the context of the study, this is a key consideration when taking into account the client-centred nature of the public health domain, and is in accordance with many official organisations' (e.g., Department of Health) recommendations for evaluating the effectiveness of support services. In addition, Winnett, Moore and Anderson (1991) suggested that interventions that are considered socially valid and have positive behavioural outcomes are more likely to be disseminated and adopted by researchers and practitioners alike. Further, social validation data has been advocated as a useful manipulation check of the internal validity of research by examining how participants experience implemented interventions (Cropley et al., 2020).

Participants

Participants were public health professionals who, at the time of the investigation, were employed by the PRC. In attempts to generate valuable information specific to this area a key consideration of the study was to enrol participants that had been, or were going through, a similar education process and subsequently had comparable experiences of the demands of training and developments within their profession. As such, criterion-based purposive sampling techniques were utilised for participant selection (Patton, 2002). To be included in the study participants were required to have completed an accredited undergraduate degree in dietetics within the past five years; a postgraduate degree in dietetics, or at least working towards the

qualification; accredited as a dietician by the Abu Dhabi Health Authority; and an International English Language Test System (IELTS) certificate with an overall band descriptor of "good user". Twenty dieticians aged between 24 and 33 years (M = 26.27, SD = 3.28) who met the selection criteria were invited to participate, all of whom agreed. All potential participants were provided with an information sheet that outlined the nature of the study and their participation, and were subsequently required to provide written informed consent prior to commencement.

Measures

Process-oriented measurements. The development of reflective skills has been suggested as an integral part of the process towards facilitating positive change to professional practice and enhancing practitioner effectiveness (Cropley, Hanton, Miles, & Niven, 2010). As such, research that evaluates the effects of reflective practice training on practitioner effectiveness needs to determine whether reflective skills have been developed in the first instance (Cropley et al., 2020). Within the health sciences, support exists for the developmental nature of reflective skills (e.g., Beecher, Lindemann, Morzinski, & Simpson, 1997; Duke & Appleton, 2000; Sobral, 2000; Williams & Wessel, 2004), although it is well documented that more rigorous research designs are needed to further our understanding of this area (Jayatilleke & Mackie, 2012). Indeed, it is worth noting that Sobral's (2000) study was the only one to use a control group for making inferences about intervention effects, whilst Beecher et al. (1997) and Williams and Wessel (2004) utilised only qualitative research methods. In attempts to overcome these shortfalls within the reflective practice literature, assessment tools for determining alterations to reflective skills following participants' involvement in the reflective practice intervention are outlined below.

Reflection Questionnaire (RQ). The RQ (Kember et al., 2000) was developed using

Mezirow's (1981) *theory of transformative learning for adult education*, which distinguishes between non-reflective (i.e., Habitual Action = RQHA; Thoughtful Action = RQTA) and reflective (i.e., Reflection = RQR; Critical Reflection = RQCR) actions in practical settings. Due to the distinguishable features proposed by Mezirow between varying types of actions, numerous studies from a wide range of disciplines have attempted to discern levels of reflective thinking as a method of evaluation (e.g., Chirema, 2007; Cropley et al., 2020; Wong, Kember, Chung, &Yan, 1995). However, the majority of studies examining levels of reflective thinking have relied on researchers' and educators' evaluations of learners' reflective journal writing and/or assignment submissions. As a result of this limitation, Kember et al. (2000) developed their theory-based, self-report RQ to assess individuals' perceptions of their own ability to reflect following involvement in educational programmes that promote reflective learning.

The RQ consists of 16 items and is divided into four scales (for a copy see Appendix 2). Two scales assess non-reflective actions, whilst the other two scales assess reflective actions. Four items for each scale are responded to using a five-point Likert scale (*1 = strongly disagree; 5 = strongly agree*) with cumulative answers ranging between four and 20. Whilst the psychometric properties of the RQ have not been exposed to extensive scrutiny the limited support that does exist encourages its use as a valid and reliable instrument for comparing groups of participants subjected to different treatment conditions, as well as part of repeated measures research designs (Kember et al., 2000; Lethbridge, Andrusyszyn, & Iwasiw, 2013). Indeed, both Kember et al. (2000) and Lethbridge et al. (2013) reported Cronbach alpha reliabilities that approximated 0.70 for each of the questionnaire's scales. These values are widely accepted as indicating adequate internal consistency and assures researchers that each scale of the questionnaire measures the dimension of reflective thinking it was developed to depict (Kline,

1999). Secondly, both studies used confirmatory factor analyses and concluded that the four-factor model was a good fit of the four scales to the theoretically derived dimensions of reflective thinking proposed by Mezirow (1981).

Reflection-in-learning Scale (RLS). The RLS was developed based on concerns that without appropriate self-assessments of reflective learning, practitioners may resist the values often espoused of reflective practice (Mann et al., 2009). The first version of the RLS allowed participants to report their appraisals of reflective learning based on the concept of reflection as a cognitive regulation strategy. Initial investigations with medical students utilised the RLS as a measure of reflective learning as a product of involvement in an educational programme (Sobral, 2000; 2001). However, later studies considered reflective learning as a process, that if harnessed well, could lead to positive performance outcomes (i.e., academic achievement; Sobral, 2005).

The questionnaire consists of 14 items and is appraised via a seven-point response scale ranging from *never* = 1 to *always* = 7 (for a copy see Appendix 3). The instrument also includes a four-point global scale designed to assess personal efficacy for reflection in learning. In two validation studies, with over 450 participants, support was provided for the construct validity of the RLS scale (Sobral, 2001; 2005). Reliability analysis indicated good internal consistency for both start and end-of-programme measures, with Cronbach alpha values noted as 0.84 and 0.86 respectively.

Outcome-oriented measurements. Previously, Mann et al. (2009) noted that few, if any, studies have attempted to determine whether clinical behaviours could be altered as a result of, or associated with, reflection**.** However, within the sport and exercise sciences domain, Knowles and Saxton (2010) suggested that improved effectiveness to practice can be represented by three aspects (e.g., changes in values, beliefs, or behaviours; confirmation or rejection of particular

theories or practices; changes in knowledge of the self, the context of practice, or the environment in which individuals operate). Specific to the present study is the aspect relating to changes in values, beliefs, or behaviours. Even with this in mind, there still remains a dearth of research that empirically validates whether such changes are realistic. The need for evidence that supports the notion that enhanced reflective skills leads to positive changes in practice is key for convincing professional development training providers and profession regulating organisations that reflective practice is a worthwhile endeavour (Picknell et al., 2014).

The measurements used for assessing alterations to professional practice within the proposed study focused on *communication skills* used by dieticians. Interpersonal communication skills of dieticians have received large amounts of attention and are considered a pertinent competency that can greatly influence the effectiveness of services provided (cf. Cant & Aroni, 2008). Indeed, appropriate use of communication skills has been found to be positively associated to treatment adherence and client satisfaction. Recognising the importance of developing competence in this area, organisations regulating the dietetic profession have included the ability to communicate effectively in their standards of proficiencies (e.g., HCPC, 2013).

DIET-COMMS. The DIET-COMMS measures communication skills used during patient consultations by pre- and post-registered dieticians. The measure was constructed based on calls for healthcare practitioners to develop competencies that facilitate a patient-centred approach to support-provision (National Institute for Health and Clinical Excellence, 2012). Communication skills are considered to be essential for dieticians as part of their responsibilities for assessing, diagnosing and treating diet and nutrition related issues (HCPC, 2013). In a recent study that attempted to develop the reliability and validity of the DIET-COMMS, it was deemed a useful

assessment tool following individuals' involvement in a training course that focused on enhancing the use of communication skills (Whitehead, Langley-Evans, Tischler, & Swift, 2014).

The questionnaire consists of 20 items that require individuals to rate their responses on a scale where 0 = *not done or not achieved*, 1 = *partly achieved or attempted*, and 2 = *fully achieved* (for a copy see Appendix 4). A global communication score is calculated by summing together the responses for each item, with higher scores representing better usage of communication skills. Although the psychometric properties of the DIET-COMMS have only been reported in one research article, it was found to have face, content, construct, and predictive validity, as well as acceptable intra- ($r = 0.90$), and moderate inter-rater reliability ($r = 0.49$; Whitehead et al., 2014).

Dieticians' Interviewing Rating Scale (DIRS). An adapted version of the DIRS (Horacek, Salomón, & Nelsen, 2007) was used to examine perceptions of clients receiving support services from the participants under investigation. Specifically, clients were asked to evaluate the interviewing skills used by professionally qualified dieticians. Interviewing skills are considered important for dieticians because the clients' goals, lifestyle, eating habits, cultural values, knowledge and attitudes, and other characteristics must be defined accurately through interviews in order to develop successful treatment plans (Gregory, Pichert, Lorenz, & Antony, 1995). In addition, evidence exists to support an association between appropriately applied interviewing skills and patient satisfaction and compliance with clinical advice (e.g., Roter & Hall, 1989; Trudeau & Dube, 1995). As such, the assessment of practitioner skills following their involvement in a reflective practice intervention was deemed as an appropriate outcome measure for determining whether changes to behaviour were as a result of engaging with the reflective

process.

The DIRS consists of 16 items which can be grouped into five core interviewing skills categories, including: (i) *comprehensiveness* (DIRSCO), (ii) *organisation* (DIRSOR), (iii) *transitional statements* (DIRSTR), (iv) *questioning skills* (DIRSQS), (v) *listening / rapport* (DIRSRA), and (vi) *approach to planning and education* (DIRSPlEd). Respondents answer each of the items on a five-point Likert scale anchored with statements that describe poor (e.g., 1), average (e.g., 3), and excellent (e.g., 5) use of the skill (for a copy see Appendix 5). The psychometric properties reported within the literature indicate that the DIRS is a valid and reliable tool for assessing dieticians interviewing skills. Indeed, Gregory et al. (1995) supported the questionnaire's inter-rater reliability with a reported kappa coefficient of 0.67, which is generally considered as acceptable (Cohen, 1968). In addition, the authors reported that following rigorous procedural checks regarding the content (i.e., the DIRS accurately reflects current understanding of interviewing process skills), concurrent (i.e., comparable ratings were demonstrated between two expert panels), and discriminant validity (i.e., detection of differences between groups' performances when there are *a priori* reasons to expect differences), the DIRS was deemed suitably valid as a measure of dietician's interviewing skills in clinical settings.

Social Validation. Social validation for confirming the accuracy of findings from the quantitative aspect of the study was examined through semi-structured interviews. Traditionally, the process of acquiring social validation has been met through the adoption of appropriate scales and open-ended questions (e.g., Freeman, Rees, & Hardy, 2009; Mellalieu, Hanton, & Thomas, 2009). Social validation interviews were used to supplement statistical analyses of objective data and allowed the opportunity to qualitatively assess potential links between the intervention and socially important outcomes (e.g., behaviour change; Dempsey & Matson, 2009). An interview

guide was developed in order to fully investigate participants' experiences during the total study period and focused on the way in which their engagement with reflective practice affected their applied work as a direct result of participation in the research process (for a copy of the guide see Appendix 6). The guide was semi-structured in nature, maintaining a set of standardised questions but affording the interviewer the opportunity to probe any issues where necessary (Patton, 2002).

Intervention

The reflective practice intervention was divided into three phases with each phase including a treatment and control period (see Figure 1). In total, both groups were exposed to three reflective practice treatments and three control periods, alternating between the conditions until they had completed all phases of the intervention. The three reflective practice treatments adopted numerous approaches as part of a multi-modal approach to developing reflective skills. The rationale for the multi-modal approach emanated from the reflective practice literature (e.g., Cropley et al., 2020; Jayatilleke & Mackie 2012; Mann et al., 2009), which has consistently identified various factors associated with enhancing the learning of more advanced reflective skills. Specifically, (a) supportive environments; (b) authentic contexts; (c) accommodation for individual differences in learning styles; (d) mentoring; (e) group discussion; and (f) free expression of opinions (Mann et al., 2009). However, Mann et al. emphasised that more research is needed into what strategies work well for promoting, teaching and learning reflective practice. Taking this information into consideration the present reflective practice intervention was progressive in nature and allowed the inclusion of additional enabling elements without overwhelming the participants with an all-encompassing inception to the training programme.

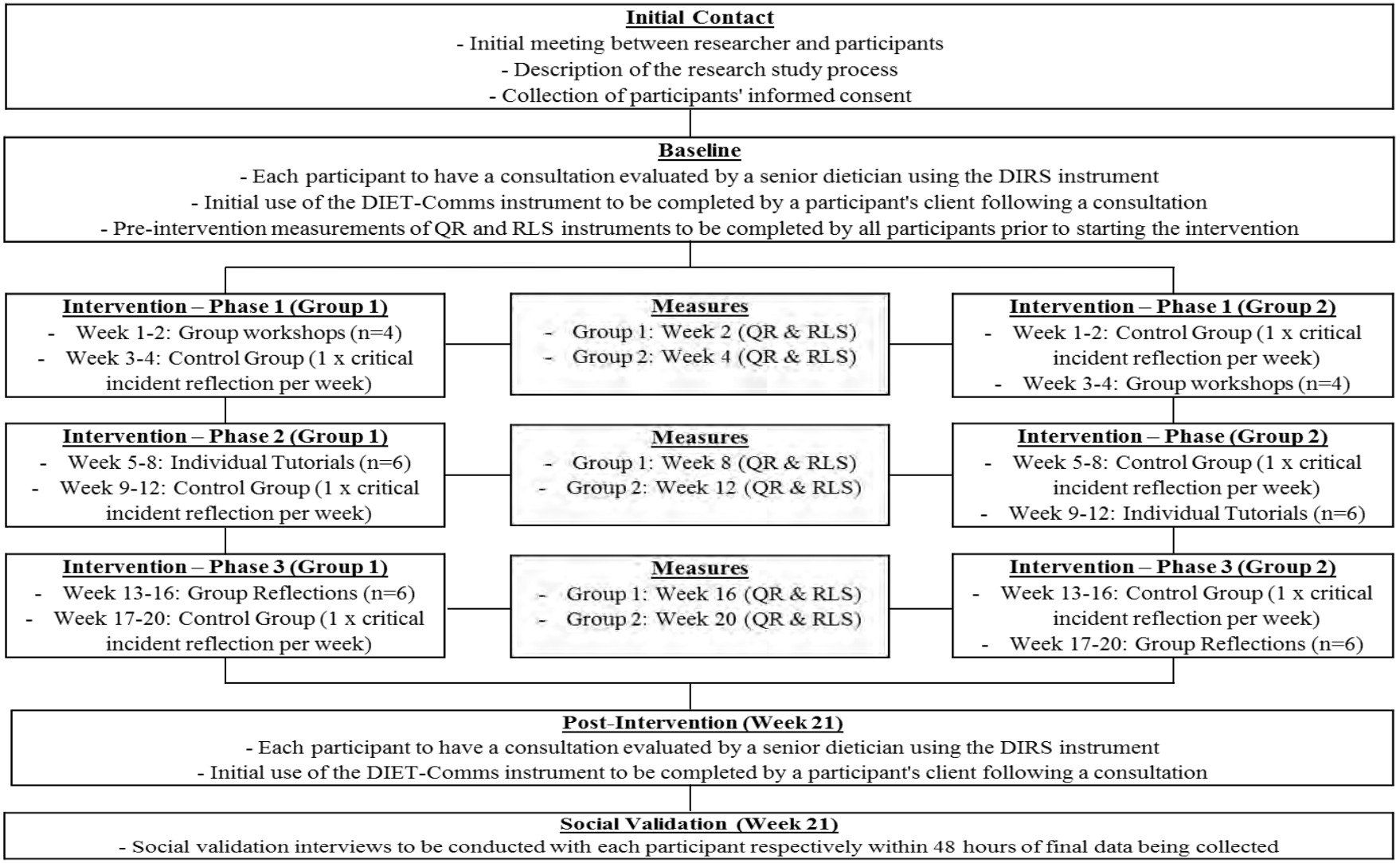

Figure 1. Summary of methodological procedures

Phase 1. The reflective practice treatment during Phase 1 of the study included four educational workshops over a two-week period. The purpose of these workshops was to introduce participants to the concept, benefits and models of reflective practice, as well as methods and guidance for structuring personal reflections. During this phase, individuals were encouraged to engage with reflective practice relating to previous experiences and seek support from the researcher who was on hand to provide regular feedback and advice. The value of initially educating individuals about reflective practice was that they were more likely to understand how, why and when to reflect, and thus be more motivated to engage with the process (Cropley, Neil, Wilson, & Faull, 2011). Indeed, in a recent study examining the effectiveness of a reflective practice intervention, Cropley et al. (2020) found that participants appreciated being involved in educational workshops as they added clarity to the concept and provided opportunities to develop a deeper knowledge and understanding of reflective practice in a safe and supportive environment.

Phase 2. Phase 2 of the reflective practice intervention was four weeks in duration and aimed to facilitate the acquirement of more advanced, critical reflective skills by removing participants from the group environment, instead, incorporating individual tutorials and personal mentoring from the researcher (cf. Cropley et al., 2020; Larrivee, 2008). The calls for utilising mentoring to support the development of reflective skills is well documented (e.g., Duke & Appleton, 2000; Jayatilleke & Mackie 2012; Mann et al., 2009), with authors suggesting that merely using individual approaches to reflective practice makes the journey towards becoming a reflective practitioner an uncomfortable one (Knowles & Gilbourne, 2010). Additionally, not only does mentoring allow for support during the reflective process but also allows for open

dialogue between mentor and mentee that may develop professional practice and tacit knowledge required to meet the demands of dynamic service delivery environments (Cropley et al., 2020).

Phase 3. The final phase of the reflective practice intervention continued the mentoring element, however, participants were also involved in regular group workshops over the course of a four week period. This action learning group approach intended to provide participants with valuable access to peer support, so that they could share their experiences of incidents that arose during practice, and together, explore the situations in detail and suggest alternatives for action (Heidari & Galvin, 2003). The structure of action learning groups included a facilitator (i.e., researcher), who provided a safe environment that promoted confidence and trust to share fears and anxieties, thus paving the way for individuals to tap into processes more indicative of critical reflections (Haddock, 1997). Presently, little support exists for the benefits of action learning groups within the health sciences literature, however, there is a longstanding acceptance of such initiatives within other domains (e.g., education). According to Quinn (1995), not only does this method provide academic learning and reflective skills development, but also promotes the attainment of practical and social skills, and confidence in practitioner effectiveness, which are important attributes regardless of profession.

Procedure

Prior to the commencement, the study experimental procedures were reviewed and approved by the Cardiff Metropolitan University Research Ethics Committee (ethics code: 15/12/02R; Appendix 7). Consent was also obtained from the appropriate consenting authority (i.e., participants' employer), to ensure participation did not contravene contractual obligations (Appendix 8). Participants were then randomly assigned to one of two groups (i.e., Group 1 or Group 2). Both groups were involved for the entire duration of the 22-week data collection

period.

The DIET-COMMS and DIRS, which were intended to assess alterations to participants' practice behaviours (i.e., *outcome-oriented measure*), were administered and collected prior to the delivery of any treatment (e.g., Week 1) and following participants' involvement in all of the three intervention phases (e.g., Week 21). The RQ and the RLS, which were intended to assess differences in participants' perceptions of their ability to reflect following reflective practice training programmes (i.e., *process-oriented measure*), were administered and collected before and after participants' exposure to each reflective practice treatment. For Group 1, process-oriented measures were obtained at Weeks 1, 3, 6, 9, 14, 17 and 21, whereas Group 2, the same measures were obtained at Weeks 1, 4, 5, 10, 13, 18 and 21. Both groups also completed the RQ and RLS a final time following their social validation interview.

Social validation interviews were conducted by the researcher within one week after Group 2 had completed Phase 3 of the intervention. In an attempt to facilitate retrieval of in-depth data and aid recall, each participant was sent an interview preparation booklet prior to the interview (see a copy see Appendix 9) and asked to consider their answers (James & Collins, 1997). Interviews were conducted within the working organisation of the researcher and participants, and were face-to-face in order to aid the flow of conversation. Each interview lasted approximately 60 minutes, were audiotape recorded, and subsequently transcribed verbatim (an example transcript can be seen in Appendix 10).

Treatment of the data

Quantitative data were analysed using IBM Statistical Package for the Social Sciences (SPSS) version 22.0. All quantitative data were checked for the assumptions for parametric statistical analysis. On the basis that data met the criteria for parametric procedures, separate

statistical analyses were conducted for process-oriented (i.e., RLS, RQ) and outcome-oriented measures (i.e., DIET-COMMS, DIRS). For process-oriented data, initial analyses examined differences between group scores over the course of the research period and whether these differences were attributable to the various reflective practice treatments. To achieve this a series of 2 (group) x 3 (treatment type) MANOVA's, with repeated measures on the second factor, were performed. With regards to outcome-oriented data, in order to determine whether changes in outcome measures were achievable, regardless of the time that participants received the reflective practice interventions, the experimental group were sub-divided into Group 1 (immediate treatment) and Group 2 (delayed treatment). A series of 2 (group) x 2 (time) MANOVA, with repeated measures on the second factor were performed.

Social validation interviews required participants to reflect on their participation in the intervention and consider: (a) aspects that contributed to the development of their reflective skills; (b) whether they perceived that these improvements affected their professional practice; and (c) the overall value of the intervention, as well as each individual phase, for facilitating change. These three areas were in accordance with the core aims of the research study, and through the utilisation of qualitative content analysis, generated three causal networks (Figures 2-4) that summarised participants' perceptions of their experiences (Miles, Huberman, & Saldana, 2014). Causal networks are illustrations for organising complex qualitative data coherently and are advocated when the purpose of the study is to represent relationships between variables and how they are linked by interwoven patterns (Neil & Mellalieu, 2014). Such an approach, especially when presenting information from multiple data sources, are encouraged as "causal networks build progressively integrated maps of case phenomena and, for multiple cases, aligns their maps to make a cross-case map that contains more generalisable causal explanations"

(Miles et al., 2014, p. 237). In doing so, the networks assembled and grouped together all the stories of individual cases into three thematic displays.

In order to develop the causal networks, a process recommended by Page and Thelwell (2013), for content analysis was adopted. Specifically, directed (e.g., "a deductive use of theory based on their distinctions on the role of theory"; Hsieh & Shannon, 2005, p. 1281) and conventional (e.g., "inductively allowing the categories and names for categories to flow from the data"; Hsieh & Shannon, 2005, p. 1279) approaches to content analysis were utilised. The process for the content analysis consisted of four distinct phases: (1) all interviews were transcribed verbatim with transcripts being reviewed by participants to ensure their accuracy; (2) the researcher familiarised himself with the transcripts by reading them multiple times to better appreciate the nature of the participants' reported experiences; (3) an initial directed coding procedure which used the aims of the study to structure this process; and (4) the transcripts were re-analysed using a conventional approach with the aim of uncovering emergent information that had been overlooked during the directed approach. Both content analysis types were completed by highlighting and making notes within the transcripts, transferring data into an Excel spreadsheet to allow for the organisation of initial codes, and subsequently ordering emergent themes into lower and higher order categories.

Including a qualitative element to the present study brought into focus issues related to trustworthiness (e.g., credibility, transferability, dependability, and confirmability) of the data collected through the methods employed (Patton, 2002). Here, trustworthiness refers to the quality, authenticity and truthfulness of findings. As such, strategies advocated for determining trustworthiness, in order to ensure rigour, were considered as part of the research design and implemented throughout the collection and treatment of the social validation (i.e., qualitative)

data (Lincoln & Guba, 1985). According to Morse, Barrett, Mayan, Olsen, & Spiers (2003; p. 3), without considering trustworthiness, "research is worthless, becomes fiction, and loses its utility". In light of recommendations by Cypress (2017), regarding methods for ensuring rigor in qualitative research, the forthcoming section outlines how the author strived to achieve trustworthiness. First, credibility, which refers to the true and accurate account of individual's experiences, was enhanced through regular conversations with supervisors (peer debriefing), constantly checking the data and interpretations with participants (member checking), and cross checking data analyses protocols and findings with an experienced qualitative researcher (triangulation). Second, transferability was enhanced through the use of purposive sampling and by providing thick descriptions of the methodology and results so that others can determine the transferability of the research to their own contexts. Third, Dependability, which refers to the consistency and repeatability of the study's findings, was established using an external researcher to review the processes of data collection, data analysis, and data presentation (inquiry audit). Lastly, confirmability, which relates to the likelihood that findings are representative of the collected data, was achieved through verbatim transcriptions that allowed identified themes to be traced back to the raw data. In addition, confirmability was enhanced with the maintenance of a reflexive journal that allowed me to remain self-aware of my own biases, assumptions and beliefs that could potently cloud my judgement.

Results

Data pre-screening. Data were tested for missing cases, distributions and assumptions of univariate and multivariate analyses (Field, 2005; Tabachnick & Fidell, 2014). No missing cases and no univariate or multivariate outlying cases ($p < 0.001$) within each dependent variable (Mahalanobis distance test) were identified. Following the guidelines of Field (2005), normality

assumptions were tested at the univariate level along with assessments of linearity, multicollinearity and singularity, with all deemed to be satisfactory. The assumption of equality of covariance matrices, although satisfactory at the univariate level (Levene's test and Fmax ratios), was violated in some cases at the multivariate level (Box's test). Therefore, Pillai's trace was chosen as the appropriate multivariate test statistic due to its robustness over test violations (Tabachnick & Fidell, 2014).

Analysis of questionnaire data was divided into two sections, one for process measures, and one for outcome measures. For each analyses multivariate analysis of variance (MANOVA) tests were used for testing interaction and main effects of experimental group by treatment type for each process inventory construct and outcome measure. Bonferonni corrected *t* tests (alpha divided by number of tests) followed any significant within-subject effects to determine where increases or decreases of scores from one reflective practice treatment to the next were observed.

Process measures. The initial analyses examined whether the experimental group's process measures increased over the course of the research period and whether these improvements were attributable to the various reflective practice treatments (Table 1). To achieve this a series of 2 (group) x 3 (treatment type) MANOVA's, with repeated measures on the second factor, were performed. Results indicated that there was a significant difference between experimental and control reflection scores over the treatment period [Pillai's trace = 0.68, $F(10, 29) = 6.28$, $p < 0.05$, $\eta_p^2 = 0.68$]. Follow-up univariate tests indicated that there was a significant intervention effect for RQHA [$F(2, 76) = 8.97$, $p < 0.05$, $\eta_p^2 = 0.19$], RQR [$F(2, 76) = 36.71$, $p < 0.05$, $\eta_p^2 = 0.49$], RQCR [$F(2, 76) = 51.68$, $p < 0.05$, 0.58], RLS [$F(2, 76) = 206.04$, $p < 0.05$, $\eta_p^2 = 0.84$], whereas for RQTA [$F(2, 76) = 2.62$, $p > 0.05$, $\eta_p^2 = 0.64$], there was no significant difference across the intervention period (Table 2).

Phase 1 treatment. *C*orrected *t* tests indicated no significant improvements in process measure scores from baseline to post-phase 1 treatment. There was a significant decrease for RLS scores from baseline to post-phase 1 treatment ($t = 4.52$, $p < 0.0125$)

Phase 2 treatment. Corrected *t* tests indicated significant improvements for RQHA ($t = 9.47$, $p < 0.0125$), RQR ($t = 2.48$, $p < 0.0125$), RQCR ($t = 11.93$, $p < 0.0125$), and RLS ($t = 3.79$, $p < 0.0125$) from post-phase 1 to post-phase 2 treatment.

Phase 3 treatment. *C*orrected *t* tests indicated significant improvements for RQHA ($t = 42.27$, $p < 0.0125$), RQR ($t = 6.55$, $p < 0.0125$), RQCR ($t = 2.31$, $p < 0.0125$), and RLS ($t = 9.17$, $p < 0.0125$) from post-phase 2 to post-phase 3 treatment.

Table 1

Mean and standard deviations of process measures for each data collection time point

	Baseline (T1)	Phase A Treatment (T2)	Phase B Treatment (T3)	Phase C Treatment (T4)	Post Intervention (T5)
Scale	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*
RLS	45.85 (14.60)	41.40 (41.40)	53.85 (3.23)	56.00 (2.32)	63.00 (4.69)
RQHA	10.40 (2.84)	10.60 (2.74)	11.60 (2.01)	12.95 (1.85)	12.30 (2.39)
RQTA	12.75 (3.61)	12.30 (2.85)	11.45 (1.50)	11.35 (1.04)	12.95 (2.26)
RQR	11.30 (3.54)	11.85 (3.10)	12.90 (2.49)	15.05 (2.01)	14.40 (2.89)
RQCR	10.25 (3.48)	10.30 (2.49)	12.20 (2.24)	14.55 (2.46)	14.05 (2.68)

Table 2

Comparison of process measures scores between data collection time points

	T1-T2	T2-T3	T3-T4	T4-T5
Scale	*t (df)*	*t (df)*	*t (df)*	*t (df)*
RLS	-4.52 (3.24)*	3.79 (2.86)*	9.17 (4.57)*	5.13 (3.21)
RQHA	2.56 (1.32)	9.47 (4.83)*	42.27 (18.19)*	-3.81 (1.24)
RQTA	-1.89 (1.22)	-2.99 (1.31)	-1.36 (0.84)	5.95 (3.26)*
RQR	3.65 (2.44)	2.48 (1.41)*	6.55 (2.85)*	-6.16 (2.86)*
RQCR	0.39 (1.94)	11.93 (8.52)*	2.31 (1.64)*	-8.11 (3.11)*

Note. t = t-test value; df = degrees of freedom; * = significant difference ($p < 0.01$)

Follow-up. Corrected t tests indicated significant improvements for RQTA ($t = 5.95$, $p < 0.0125$) from post-phase C treatment to follow-up. There were significant decreases for RQR ($t = -6.16$, $p < 0.0125$) and RQCR ($t = -8.11$, $p < 0.0125$) between post-phase 3 and follow-up scores.

Outcome measures. In order to determine whether changes in outcome measures were achievable, regardless of the time that participants received the reflective practice interventions, the experimental group was sub-divided into Group 1 (immediate treatment) and Group 2 (delayed treatment). A series of 2 (group) x 2 (time) MANOVA's, with repeated measures on the second factor were performed. Results indicated that there was no significant difference between

Group 1 and 2's outcome scores over the treatment period [Pillai's trace = 0.22, $F(7, 12) = 0.49$, $p > 0.05$, $\eta_p^2 = 0.22$] (Table 3). Follow-up univariate tests indicated that, regardless of the intervention start point, there was a significant intervention effect for DIRSRA [$F(1, 18) = 131.11$, $p < 0.05$, $\eta_p^2 = 0.88$], DIRSQS [$F(1, 18) = 158.88$, $p < 0.05$, $\eta_p^2 = 0.90$], DIRSCO [$F(1, 18) = 44.74$, $p < 0.05$, $\eta_p^2 = 0.71$], DIRSOR [$F(1, 18) = 75.60$, $p < 0.05$, $\eta_p^2 = 0.81$], DIRSTR [$F(1, 18) = 46.66$, $p < 0.05$, $\eta_p^2 = 0.72$], DIRSPlEd [$F(1, 18) = 138.84$, $p < 0.05$, 0.89], whereas for scores of the DIET-Comms [$F(1, 18) = 5.45$, $p > 0.05$], there was no significant difference across the intervention period.

Table 3

Means and standard deviations of outcome measures pre to post intervention.

	Baseline (T1)	Post Intervention (T5)
Scale	*M (SD)*	*M (SD)*
DIET-Comms	22.85 (5.83)	23.47 (3.44)
DIRSRA	1.76 (0.44)	3.28 (0.48)*
DIRSQS	2.19 (0.38)	3.68 (0.38)*
DIRSCO	2.05 (0.60)	3.65 (0.81)*
DIRSOR	2.00 (0.67)	3.85 (0.57)*
DIRSTR	2.15 (0.75)	3.95 (0.83)*
DIRSPlEd	2.46 (0.61)	3.80 (0.33)*

Note. *p < 0.05

Social validation. In line with other research studies that have utilised causal networks (e.g., Hanton, Cropley, Neil, Mellalieu, & Miles, 2008; Wadey, Evans, Evans, & Mitchell, 2011), the networks comprised two major elements: (1) emergent categories and themes linked together by a series of arrows that illustrated relationships between perceived processes and their contribution to the attainment of reported outcomes; and (2) numbers, which represent occurrences where participants identified specific links between processes and outcomes as a result of their involvement in the reflective practice intervention. The networks should be

interpreted from left to right. On the left hand side of the diagram are the initial codes, which were used to deductively reduce the interview transcripts into more manageable categories (i.e., lower order themes). These lower order themes were subsequently further sub-categorised into higher order themes, and provide an illustration of factors and required conditions that contributed to achievable outcomes. The causal networks are supplemented by descriptive summaries and verbatim quotations to further illuminate the findings and help the reader understand relationships between relevant variables.

Value of reflective practice intervention (Figure 2). All participants reported that they found the reflective practice intervention useful. The multi-modal training programme: (a) improved knowledge and understanding about how to reflect and why reflective practice may be useful as a key professional practice competency (e.g., Participant J stated, "I feel that now I am better able to judge my ability as a dietician rather than just thinking on whether a session was good or bad"); (b) promoted a sense of self-confidence amongst participants as the support received at each phase of the intervention helped to validate their approaches to reflecting on experiences (e.g., Participant A stated, "For me this gave me a lot of confidence especially when my views were well liked by the other dieticians"); (c) illustrated a multitude of methods for reflecting, and that methods should be adopted and adapted based on personal needs and circumstances (e.g., Participant E proposed, "The different types of training has allowed me to think about when to use certain types of reflections based on the situation or based on what it is that I'm trying to get out of my reflections"); and (d) provided a learning framework whereby knowledge and skills acquired at each phase of the intervention could be built upon in subsequent phases for enhancing opportunities for maximising learning potential. For example, Participant B detailed:

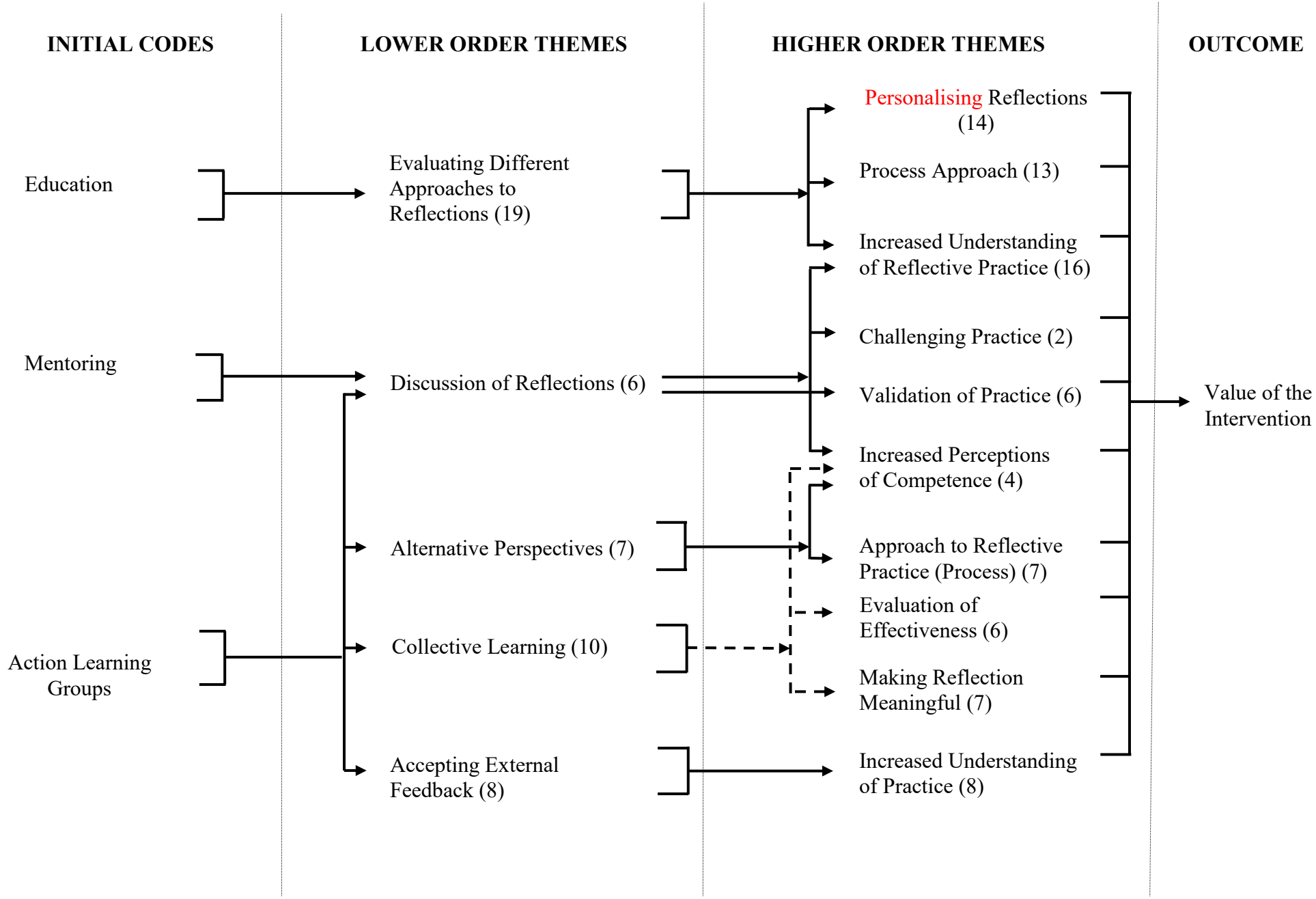

Figure 2: Causal network highlighting perceptions regarding the value of the reflective practice intervention (Participants = 20)

> The very early part of the training programme required us to keep a reflective diary… I needed to go through that process of writing down all of my thoughts in a very structured way to become a more competent reflective thinker.

Educational workshops. The educational workshops were deemed useful in that they provided participants with the tools for evaluating different approaches to reflection. For example, Participant K suggested:

> I'd never been introduced to reflective practice before, but thought that there was a way to do it. But the workshops showed me that there isn't one way to reflect. In fact, there are a lot of ways to use reflective practice but finding the approach that suits your needs is what is going to make it useful and worthwhile.

However, for such critical thought processes to occur there appeared to be a requirement for certain prerequisite foundation components, which the workshops provided. Specifically, the workshops contributed to increasing participants' understanding of reflective practice (e.g., Participant D stated, "The tutorials allowed me to better understand what reflective practice is and different approaches to thinking about my experiences"), encouraged individuals to personalise their reflections (e.g., Participant K indicated, "By being introduced to different types of reflecting I think I was able to adapt how I reflected in a way that was much more meaningful to my own experiences"), and emphasised the need for practitioners to be open to exploring the processes that led to experienced outcomes. For example, Participant D reported:

> The education part was really useful for helping me understand that there was no right or wrong way to reflect but rather that going through a process would allow me to take my reflections in their own direction and understand why things happened as they did.

Mentoring support. Out of the three phases of the training programme, the mentoring support received the least uptake. This statement is based on the fact that 37% of the scheduled mentoring sessions were not attended, and is also reflected by the low number of participants (*n* = 3) who credited its usefulness. Those individuals who found the mentoring support beneficial shared a common consensus that this phase of the training programme provided an initial platform for discussing their reflections in greater detail with an external member. For example, Participant R suggested, "Once I began to receive feedback from you I had a baseline which I could refer back to if you triggered something I hadn't considered", whilst Participant E stated, "Having that open dialogue with you allowed me to go back and forth with certain issues instead of me just accepting my early thoughts." The benefits of being able to discuss their reflections appeared to afford the participants opportunities to validate their practice decisions and actions (e.g., Participant R reported, "I gained more confidence in realising that what I was doing wasn't necessarily wrong but that it may well have just been different to what other people are doing"), allowed them to challenge their routine approaches to practice (e.g., Participant E stated, "It was still difficult to think about how you would approach your work differently. It was only when you gave a different perspective did I start to think in a different way"), and further enhanced their understanding of how reflective practice can contribute to generating learning opportunities for future practice (e.g., Participant G indicated, "Having that different view from somebody else almost allows you to re-review your session and look at factors that maybe you hadn't considered before. So the feedback to a certain extent provides further opportunities for self-exploration").

Of the remaining participants, 11 did not refer to the mentoring phase of the training programme at all during the interviews, whilst three individuals found this aspect of the training least useful. Reasons posited for this lack of enthusiasm generally indicated that it was not

necessarily mentoring that was the issue *per se,* but rather, when compared to the Action Learning Groups, they felt this aspect of the training programme facilitated deeper reflections. For example, Participant L stated:

> I wouldn't necessarily say that I have found either or any of the different aspects of the training programme more beneficial than another. In fact I felt that the order of the training programme was necessary. But being in a room with other like-minded practitioners, with everyone offering their thoughts and opinions was really useful. We had already begun to think differently following our (mentoring) sessions with you, but the group sessions took this to another level.

One of the participants (Participant J) who discussed the mentoring aspect of the training programme also raised an issue related to her ability or desire to discuss her thoughts and practices in a more intimate setting:

> The one on one sessions with you were the most daunting. I think we all felt like our understanding of reflective practice had improved after your presentations, but then to put our reflections in front of you for discussion felt almost like a test. For me personally I felt nervous beforehand. However, once I had forced myself to come to the meetings I felt like gained more of an understanding of what reflective practice was and how I should be doing it.

Action learning group (ALG). The ALG was considered the most beneficial phase of the reflective practice intervention, with all participants reporting this mode of reflection as useful for improving their ability to reflect and generating meaningful information that they could use to bring about positive changes to their practice. For example, Participant Q commented:

> The thing that has really changed my ability to reflect was the experiences I had with other dieticians who had also been introduced to reflective practice. It feels like we are in this together. And that feeling almost feels like we are collectively trying to improve, not just the services that we provide, but our profession as a whole.

Participants reported enjoying the opportunity to engage with other practitioners during the ALGs who they could relate to in order to share experiences. For example, Participant D mentioned, "If you were to ask me what was my favourite element of the training I think it would be the group sessions… it was really comforting to get different opinions from similar people on how things could be viewed." However, merely bringing people together may not be enough. Instead, the sessions needed to foster collective learning opportunities where individuals were encouraged to contribute their perspectives and provide feedback to others on their reflections. When these conditions were achieved, the benefits of ALGs included: (a) perceptions of increased competence regarding how to reflect (e.g., Participant J stated, "I gained confidence by realising that what I was doing was not necessarily wrong but that it may well have just been different to what other people were doing, however because it was meaningful to me it was relevant"); (b) provided opportunities for examining a variety of perspectives about how to deal with similar scenarios (e.g., Participant D suggested, "I think it would be the group sessions with the other dieticians as this allowed us to explore each other's issues but from various different angles so that it gave us an insight into how each other interpret situations and how we deal with those"); and (c) promoted a culture where evaluation of practice or effectiveness was encouraged. The following quotation from Participant P provides a useful example of how the group dynamics influenced individual's perceptions about what they could be doing differently:

> When you get information and different opinions from your colleagues or you see the way that they judge their sessions or make changes to their practice you can only help but want to do it yourself. So in those group sessions I think I was gaining knowledge of how other people practice, and how they judge the success or failure of their practice, and that I could compare that to the way I typically do these things, which could be used as a yardstick for determining whether I needed to change certain elements of what I did.

Impact of reflective practice intervention on reflective skills (Figure 3). The majority of participants (n = 15) demonstrated an ability to be reflective. Indeed, only two individuals used merely descriptive accounts of their experiences, whereas only two other individuals achieved more critical levels of reflections. A common theme across reflection levels (e.g., descriptive through to critical reflection) were participants' reports that in order to progress they needed to *change their focus* when reflecting on their experiences. For example, at the descriptive level, Participant B suggested, "To begin with I struggled to think about what to reflect on. In hindsight I was probably focusing on trivial elements of my sessions and missing some of the real key aspects that would contribute to my future learning." In contrast, individuals who were noted as having more advanced abilities to reflect at higher levels found that being involved in the reflective practice intervention gave them the skills to challenge their thought processes. By having greater structure, and understanding how to engage in reflective practice allowed them to shift their focus, and develop an awareness that previous reflective routines (pre-intervention) were not adequate for bringing about meaningful change to their practice. For example, Participant I explained:

Sometimes my reflections focused on technical knowledge and at other times it focused on my professional practice ability. Before, I think I would've just focused more on technical knowledge. But it wasn't as if I just arrived at this type of information. I think

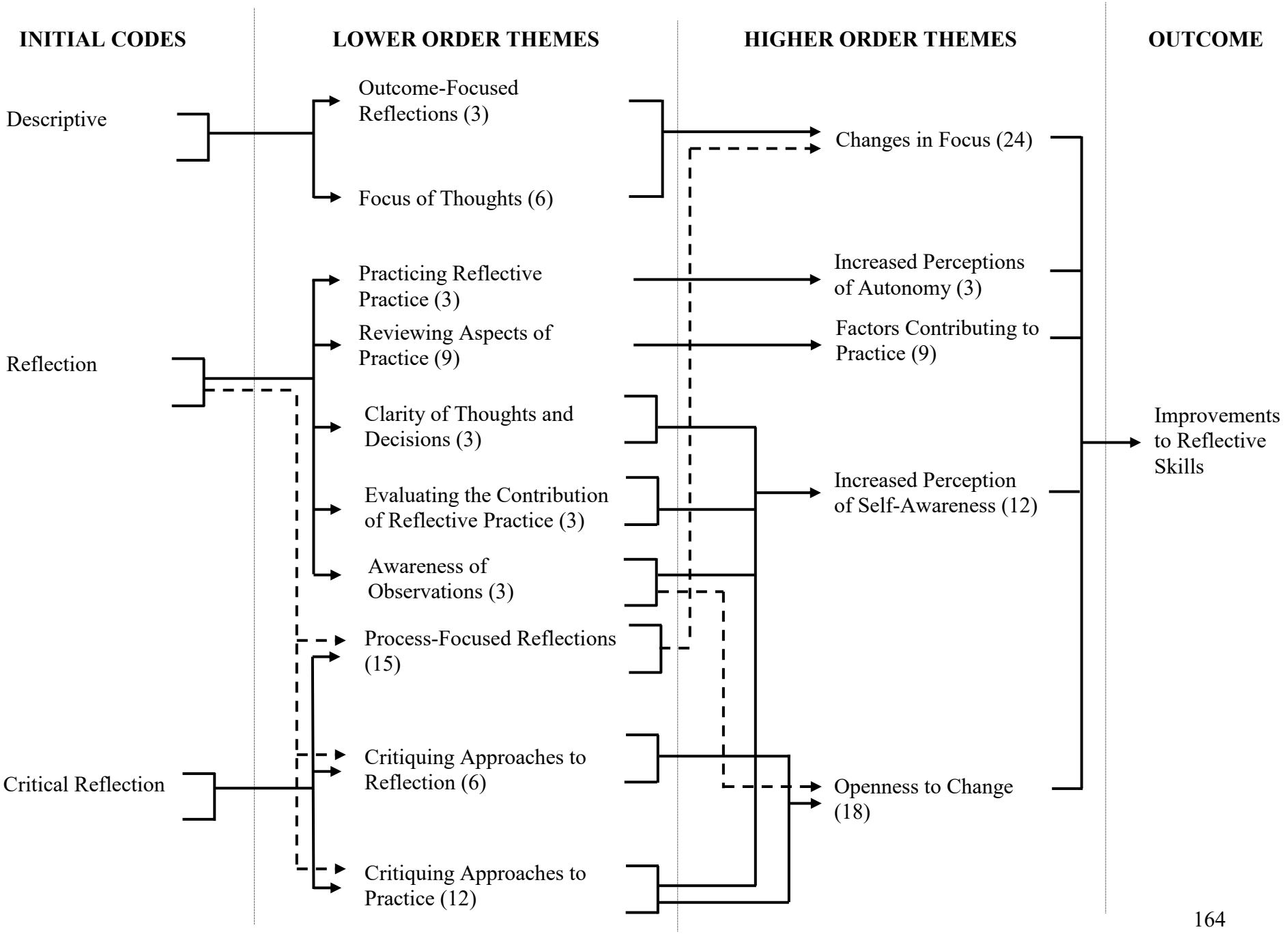

Figure 3: Causal network highlighting factors contributing to improvements of reflective skills (Participants = 20)

> this was based on my approach to questioning why things happened, and in asking myself that type of question allowed me to unravel information that previously I may not have considered.

A further theme that was apparent when individuals reflected at more advanced levels was that of *openness to change.* For example, Participant Q stated:

> Before, when I reviewed the work I was doing, it was the clients I always had in mind and I was thinking about how we interacted affected them as an individual. I never really paid attention to how the session affected me and I guess to really understand how the interaction affects the client I also need to think about how my emotions and thought processes influenced my behaviour during the session, which would no doubt impact the individual's attitudes.

With respect to the 18 out of 21 references made regarding 'openness to change', this ability required individuals to not only critique their approaches to practice, but also to reflecting. For example, Participant H stated, "To begin with I rigidly stuck with a reflective model. However with the different elements of the training coming into play I felt that how I reflected became much more flexible and adaptable", whilst Participant D explained, "Reflecting in various different ways… it didn't really matter as long as the method was fit for purpose and helped me to draw out some meaning that was useful for the future." In essence, without reviewing personal abilities to use reflective practice, or indeed to find a method of reflecting that is individual specific, it is less likely that discovering opportunities for change will occur.

Professional practice changes as a result of enhanced reflective skills (Figure 4). When the majority of participating dieticians allowed alterations to their thought processes to affect

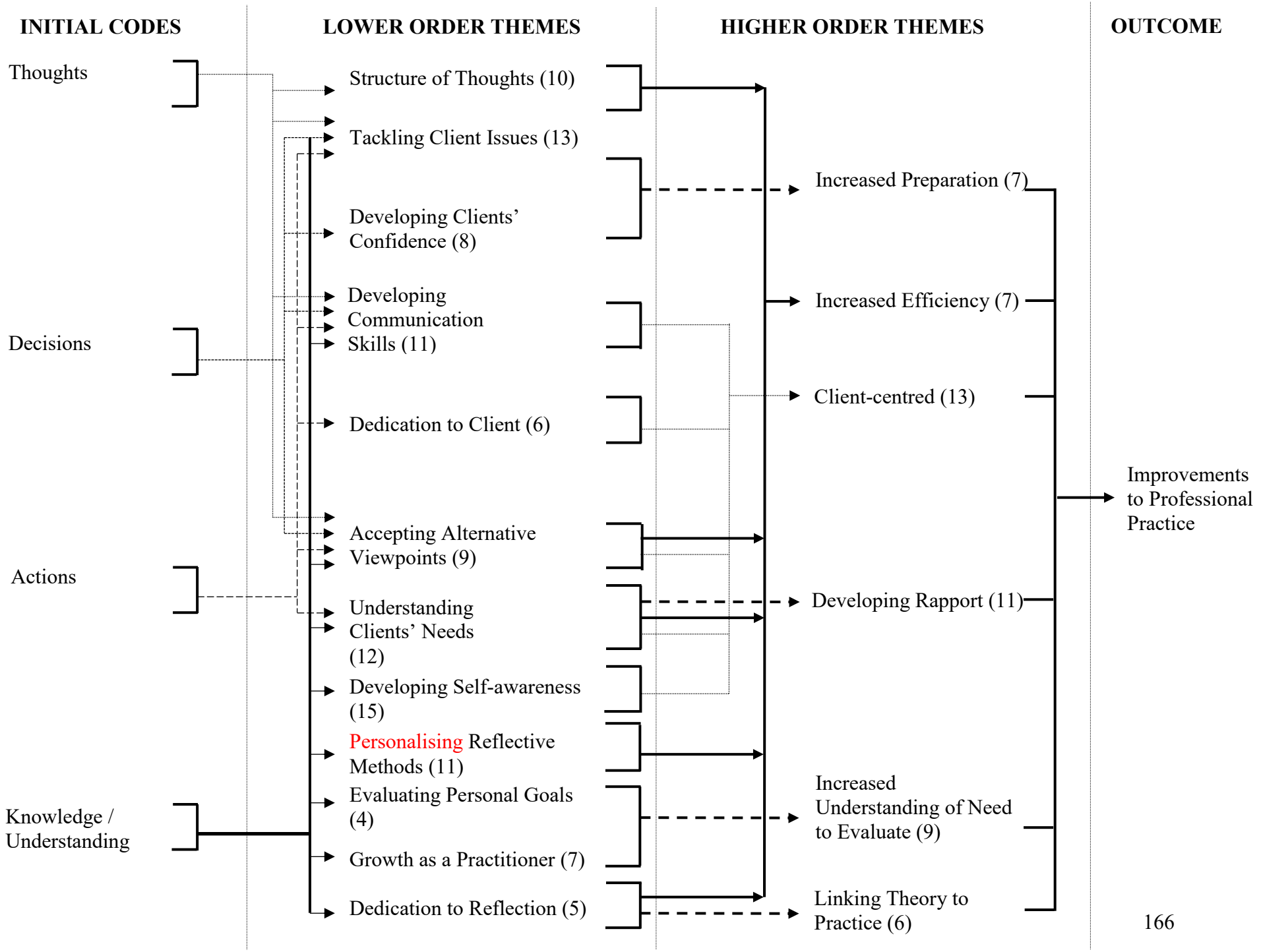

Figure 4: Causal network highlighting factors contributing to improvements to professional practice (Participants = 20)

their decisions and actions, typically as a result of improved knowledge and understanding gained from reflecting on their experiences, this shift in professional practice resulted in more client-centred approaches during consultations. For example, Participant C explained:

> It's difficult to verbalise, but I noticed that when I reflected on an experience I felt as though I better understood the problems the clients were facing. This added understanding gave me a more caring mind-set and when it came to follow-up appointments the interactions I had seemed different to what I experienced before. I felt like I cared more about the individual and therefore was more determined to help them with their issues.

Due to the context that the participants operate in, often they feel like they are merely "problem solving" or "fire-fighting" diet related issues during time constrained consultations with clients. For example, Participant P explained:

> Unfortunately, the military programme dictates how much time we get to spend with clients. I think when you're studying you have this idealistic view that basically the support you provide will be on going until you or the client reaches the end goals. So, from that point of view I sometimes feel underwhelmed by the services I am providing.

However, as a result of reflecting on their sessions with clients, some reported that altering their focus and expectations, and adjusting their approaches accordingly, gave them a sense that they were better able to understand clients' needs. For example, Participant H mentioned, "Spending time to reflect on your experiences gives you a sense that you are spending more time on the issues of the client", and that dedicating this additional *time* to clients' issues has resulted in dieticians "becoming more empathetic." This is further highlighted with the below example from Participant A, who stated:

> I feel that I am a more empathetic dietician. I feel that because I've taken the time to understand clients' issues from a more detailed perspective or from an alternative perspective that I am much better able to understand the seriousness of the issues that they may be facing.

Allied to the perception that they began to offer a more client-centred service that aimed to cater for clients specific needs, several of the participants (n = 6) suggested that aspects of the reflective practice intervention contributed towards a sense of greater preparedness for follow-up consultations and greater efficiency during support sessions. This is best supported by the following statement from Participant E:

> I think as a result of understanding my sessions better, I am better able to be prepared for forthcoming sessions with my clients. To me, the key to a successful working relationship is being prepared as it allows sessions to flow much easier and it allows me to tackle certain issues which I may have missed if I hadn't thought about it following the previous session… By reflecting on sessions gave me a bit more focus towards how I should be dealing with clients' issues and meant that the delivery of my sessions became more efficient.

Discussion

This study aimed to generate empirical evidence of the benefits of reflective practice for health practitioners by assessing alterations to reflective skills and practice behaviours following involvement in a multi-modal intervention. In addition, the social validation element of the study further explored the mechanisms that bring about changes to professional practice and put into context the applied significance of the beneficial effects of engaging in reflective practice. In doing so, this study has overcome limitations within the reflective practice literature (e.g.,

Fleming, 2007; Huntley, Cropley, Gilbourne, Sparkes, & Knowles, 2014; Huntley, Cropley, Knowles, & Miles, 2019; Jayatilleke & Mackie, 2012; Mann et al., 2009), where concerns have been raised about the tendency for researchers to use theoretical debate and anecdotal reasoning, rather than more robust experimental research designs, to champion purported benefits for practitioners. In summary, the findings presented within this chapter suggest that developing the ability to reflect on one's practice has distinct benefits associated with improving the perceived effectiveness of subsequent service delivery. Indeed, the general trend indicated that the reflective practice intervention was successful for improving participants' reflective skills, and that such improvements directly contributed towards more favourable practice behaviours (e.g., communication skills).

The developmental nature of reflective skills identified in the current study appears to support previous findings (cf. Mann et al., 2009). Indeed, the questionnaire data, which assessed individual's perceptions of their ability to reflect following their involvement in the intervention, improved at each phase of the intervention for both aspects of reflective actions; namely, reflection and critical reflection. When interpreting the results, it is worth noting the distinction between these two levels of reflective action. The differentiation between reflection and critical reflection can be traced back to Dewey's (1933) seminal work on reflective thinking in education and adopted in both Mezirow's (1981) and Kember et al.'s (2000) more recent conceptualisations. In summary, critical reflection is considered to be a deeper, more thoughtful and more profound level of reflection that requires a major change of perspective and alteration to deep-seated beliefs. With this understanding it is interesting that the present findings indicated that in all instances, scores for reflection were greater than those of critical reflection. This is not surprising as being critically self-aware is considered an acquired skill that comes with

experience and great intellect (Moran & Dallat, 1995; Hockly, 2000), and this being the case, not every individual is necessarily capable of engaging in critical reflection (Hobbs, 2007). Indeed, this may indicate the lower scores achieved on the RQCR scale. It might also be argued that improved scores on the reflection scale do not necessarily indicate deeper levels of reflection, but rather that individuals were more aware of their ability to reflect at the descriptive level. However, on the basis that critical reflection scores also improved (e.g., given the significance of the scores emanating from the RLS scale), albeit to a lesser degree, suggests that individuals felt they were achieving more advanced levels of reflective thinking. According to Larrivee (2008), to achieve these advanced levels of reflection, an individual must alter their focus, content, and quality of reflections from trivial to potentially profound. In addition, Mezirow (1981) suggested that critical reflection is a process that includes awareness that routine actions are not adequate and thus a change in perspective is required. In support of both Larrivee's and Mezirow's contentions, the social validation data emphasised that in order to improve the ability to reflect requires: (a) an increased self-awareness; (b) increased autonomy for reflection; (c) an openness to change; and (d) a change in focus from appraising situations to considering the self and the client.

Whilst this information contributes to an understanding of the mechanisms that facilitate reflective skills development, researchers and practitioners are likely to be interested in how these elements may be fostered. To that end, there appears to be numerous commonalities between suggestions proffered by Mann et al. (2009), regarding enabling features for developing reflective skills, and findings noted within the present research study. Indeed, Mann et al. listed supportive environments, an authentic context, accommodation for individual differences in learning style, group discussions, on-going support, and free expression of opinions, as important

elements of reflective practice interventions. Similarly, the participants in the current study emphasised the importance of being able to discuss their reflections with mentors and peers, evaluating and exploring alternative approaches to reflective practice, gaining new insights into alternative reflective perspectives, discussion of personal reflections, and acceptance of external feedback. As such, advocates of reflective practice, and training providers, would do well to be mindful of these components when devising effective applied interventions and support programmes aimed at facilitating individuals' abilities to reflect at more advanced levels.

A further point of consideration for researchers and practitioners interested in understanding the developmental nature of reflective skills is that improvements appeared to accelerate during the latter phases of the intervention. Conversely, minimal improvements were noted following the initial series of educational workshops that aimed to introduce participants to the concept, benefits and models of reflective practice, as well as methods and guidance for structuring personal reflections. This finding corroborates with those noted elsewhere within the applied reflective practice literature (e.g., Cropley et al., 2020; Cropley, Miles, & Peel, 2012; Knowles, Gilbourne, Borrie, & Nevill, 2001). Indeed, in a recent study examining reflective skills with sports coaches, Cropley, Adams, Mullen and Rainer (under review) noted that although general improvements to reflective skills occurred after each phase of the intervention, it was not until after the educational part of their intervention that participants were able to reflect at their highest levels. Potential explanations for this are twofold. First, knowledge and understanding gained from educational workshops takes time to influence the ways in which individuals engage with reflective practice (Cropley et al., under review). However, this should not downplay the importance of the educational aspect of support programmes as this stage of the developmental process has been advocated as foundational for adding clarity to the concept

of reflective practice and should allow individuals to explore the core principles in a safe and supportive environment (Cropley, Neil, Wilson, & Faull, 2011). Second, the development of reflective skills appears to be facilitated when relational meaning can be ascribed to reflective practices. For example, Lethbridge et al. (2013) found that individuals tend to perceive greater engagement with dimensions of reflective thinking when they can relate their immediate reflections to lived experiences. Indeed, this was more likely to be the case during the latter phases of the intervention where participants were encouraged to reflect on critical incidents relating to their professional practice that they were exposed whilst participating in the study. It appeared that their engagement with their reflections was as a result of their utilisation of a more structured approach to reflective practice, as well as their regular interactions with mentors, peers and clients that promoted self-appraisal of practices and outcomes, discussion of practice strategies and decisions, and attainment of feedback aligned to their goal-directed behaviours (Duke & Appleton, 2000; Sobral, 2000).

In order to determine whether participants' professional practice improved as a result of being involved with the study, Cropley and Hanton's (2010) conceptualisation of effective reflective practice was used, which stipulates that the purposeful learning activity (reflective practice intervention) results in positive changes to practice. In addition, Knowles and Saxton's (2010) criteria for what constitutes "change" when referring to professional practice were also considered (i.e., changes in values, beliefs, or behaviours; confirmation or rejection of particular theories or practices; and/or changes in knowledge of the self, the context of practice, or the environment in which individuals operate). With specific focus on the quantitative element of the study, the changes to practice behaviours (i.e., communication skills) following the reflective practice intervention were associated with enhanced reflective skills. Whilst this relationship has

always been intuitively appealing, until now there has been a lack of support within the health, sport and exercise literature (cf. Picknell et al. 2014). Indeed, Mann et al.'s (2009) systematic review of reflective practice research in the health professions domain, found no evidence to support the link between reflective practice and clinical behaviour or patient care. The mechanisms for this direct link, identified within the social validation interviews, indicated that the dependent variable in this study (i.e., communication skills) was positively affected as a result of practitioners' tendencies to adopt more client-centred approaches to working with clients. However, why these changes occurred can be linked to a variety of interwoven variables that contributed to individuals becoming more self-aware, accepting of alternative viewpoints, and being better prepared and willing to link both clients' personal needs and theoretical concepts into practice decisions and behaviours.

The above process towards changing professional practice appears to be in alignment with anecdotal accounts in other professional domains (e.g., coaching; applied sport psychology) where researchers have intimated that these changes are likely to occur when practitioners are motivated to associate what they do in practice with their preferred professional philosophy (e.g., Peel, Cropley, Hanton, & Fleming, 2013; Tod & Bond, 2010). Taken together with the results of the present study, this perspective has interesting implications for deliverers of reflective practice support programmes and researchers alike, in that focussing on bringing about specific changes to practice may be somewhat short-sighted. Rather the purpose of reflective practice interventions may be better suited to providing a framework that allows practitioners to explore and harness their professional congruence; that is, a professional philosophy underpinned by their core beliefs and values (Lindsay, Breckon, Thomas, & Maynard, 2007; McEwan & Tod, 2015; Swann, Keegan, Cropley, Mitchell, 2018). Indeed, Swann et al. (2018; p. 21) suggest that,

"In order to develop a thorough understanding of one's beliefs, values, prejudices and personal agendas regarding applied practice…practitioners have been advised to engage in systematic and ongoing reflective practice". Further, it is this congruence that is considered a critical feature of effective practice (Poczwardowski, Sherman, & Ravizza, 2004) and is more likely to lead to desirable practice behaviours.

Limitations and Applied Implications

With respect to the primary aim of the present research study (to empirically investigate the benefits of reflective practice for applied practitioners), it was important that the research design and associated methods were considered scientifically rigorous. In light of the research context (i.e., environment and access to applied practitioners) that provided ideal conditions (e.g., intervention timeframe, applied consultancy opportunities) for implementing reflective practice principles with multiple applied practitioners across comparable circumstances (i.e., predetermined military training programme), careful consideration was given towards appropriate research design. The decision for using a crossover design was based on the notion that they reduce the influence of confounding covariates as each participant serves as their own control, and because they are considered statistically efficient, meaning fewer participants were required to determine meaningful differences and effects (Comer & Kendall, 2013). Although crossover research is well established and accepted across a range of disciplines (e.g., clinical psychology and pharmaceutical studies) limitations regarding these designs mean that researchers and applied practitioners need to be mindful when interpreting findings. Specifically, when utilising this type of research design there are two potential limitations; namely, *period* or o*rder effects* and *carry-over* (Jones & Kenward, 2014). First, order effects imply that changes over time may be a function of the order that treatments are applied rather than as a result of the

specific elements of a treatment (Comer & Kendall, 2013). To overcome this limitation within the present study, whilst all participants took part in both the control and treatment phases during the research period, the order of these phases were differentiated by randomly assigning individuals into one of two groups (e.g., control first, treatment second versus treatment first, control second; Kenward, 2014). Second, carry-over refers to the confounding of an estimate related to a treatment effect. That is, an effect noticed during a treatment period, will impact further effects as a result of subsequent treatments (Jones & Kenward, 2014).

In traditional crossover research designs, particularly when investigating effects of pharmaceuticals, a wash-out period is required, during which time changes in biochemistry markers regress back to baseline levels before future treatments are applied. Within the present study, it was implausible to expect improved reflection skills achieved during a treatment period to reduce back to pre-treatment levels. Instead, the wash-out, or referred to herein as the control period, was a period whereby pre-control phase reflection skills and pre-subsequent treatment phases were required to be stable before future treatments could be delivered. This point is worthy of consideration when taking into account the developmental nature of reflection skills. Indeed, advocates of reflective practice interventions suggest that multimodal programmes should be progressive in nature with each phase allowing the inclusion of additional enabling elements without overwhelming participants (Cropley et al., 2020). As such, the efficacy of the crossover design employed within the present study was evident given that both groups of participants, regardless of treatment sequences, demonstrated improvements to reflection skills during treatment phases followed by plateaus during control phases.

Another potential limitation of the present study is the generalisability of results obtained when accounting for the cultural make-up of participants. Indeed, calls for empirical evidence

that supports the effectiveness of enhancing reflection capabilities are typically by academics and applied practitioners from countries where reflective practice has an established history within education and training programmes (e.g., Huntley et al., 2014; Picknell et al., 2014). As such, interpretation of results should respect the traditions, values and beliefs, associated with the relevant culture (Richardson, 2004). However, to limit the potential negative influence of cultural differences for determining the effectiveness of reflective practice, careful consideration by the researcher was given to the development of a training programme that accounted for learning preferences of the local population (Clarke & Otaky, 2006). The question here was not how or why reflective practice worked, but rather was it effective for bringing about meaningful changes to health practitioners applied practice. The results obtained provided resounding support for this relationship, and therefore, it should be assumed that the same would be noticed with other samples as long as the reflective practice training programme was tailored to the specific needs and requirements of the participants. By heeding Cropley et al's. (2020) advice, as long as reflective practice interventions are delivered within supporting environments and authentic contexts, whereby individual preferences are accommodated, and freedom of expression is allowed, potential issues relating to cultural differences should be minimised (Clarke & Otaky, 2006).

Summary and Conclusion

The findings of the present study add valuable empirical evidence to the existing literature promoting the contribution of reflective practice for developing practitioners' reflection skills and improving professional characteristics linked to effective practice. The timing of this evidence is welcome given the juxtaposition that currently exists across allied health professions. Specifically, the need to be a reflective practitioner is viewed by profession regulating

organisations as a requirement of competent and effective practice, yet resistance to engage with reflective practice beyond education and training appears to still exist. It is hoped that the present study goes some way to overcoming at least one of the reasons for this resistance; that is, the lack of empirical evidence within the professional development literature. The findings presented herein provide illuminating evidence that reflective practice works in a real-world setting and should be considered as a potential buy-in for sceptical practitioners. Furthermore, the outcomes of the present study justified the means. To that end, training providers and/or individuals keen to utilise reflective practice need to appreciate that a one size fits all approach is likely to prove ineffective. Instead, careful consideration of the context that practitioners are operating within, and their specific needs, need to be taken into account. In doing so, the development of tailored training programmes that initially facilitate foundation skills can be progressed over time and experiences for the enhancement of more advanced levels of critical reflection. It appears that only once more advanced reflection levels are obtained can users' thoughts, decision and actions be facilitated. Indeed, both Study 1 and Study 2 of this research programme point towards the likelihood that reflective practice is able to influence future behaviours. Examining whether this positive transitional process is also translatable to end users (e.g., clients) for bringing about positive changes to their circumstances is a potentially profound area for consideration.

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CHAPTER 7

STUDY 3

Who is it good for? Examining the relationship between reflective practice and mindfulness for promoting healthy lifestyles

Abstract

A common theme emerging from the literature relates to the role that reflective practice plays in altering users' thoughts, decisions and actions. The possibility that reflective practice is able to influence future behaviours is interesting, especially when considering that a key aspect of effective applied practice is to bring about positive changes to client's circumstances. As such, the current study aimed to: (a) examine the beneficial effects of a multimodal training programme for facilitating health support seeking clients' lifestyle behaviours and health related outcomes; and (b) generate empirical evidence of the benefits of reflective practice with this population. 150 participants (*M* age = 17.7 years; *M* Body Mass Index = 44.2 kg/m^2) were assigned to one of three intervention groups: (1) generic health and fitness; (2) generic health and fitness plus mindfulness training; and (3) generic health and fitness plus mindfulness and reflective practice training. Outcome measures (e.g., body composition and cardiorespiratory fitness) were collected at baseline and post-intervention, whereas process measures (e.g., mindfulness and reflection skills) were collected four times during the intervention process. Interaction effects were noted for mindfulness and reflection skills, indicating divergent trends between treatment groups, with post-hoc analysis revealing no differences between Group 2 and Group 3 but lower scores for Group 1. Both body composition and cardiorespiratory fitness improved from pre- to post-intervention for each group, with Group 3 achieving better improvements than the other groups for waist circumference, waist-to-height ratio and body fat percentage. The mindfulness and reflective practice interventions appeared beneficial in terms of helping participants to improve their related skills, which facilitated the adoption of healthier lifestyles. These findings offer empirical support regarding the benefits of reflective practice for health-seeking clients and add to the already extensive purported benefits for practitioners and end users alike.

Who is it good for? Examining the relationship between reflective practice and mindfulness for promoting healthy lifestyles

The rising prevalence of obesity is a global concern, with some countries considering it a pandemic threat to their nation's health (Popkin, Adair, & Ng, 2012). At present, the global estimate for obesity prevalence is 5% for children (< 20 years old) and 12% for adults (≥ 20 years old), which are increases from 2% and 6% respectively, as noted in 1980 (The Global Burden Disease 2015 Obesity Collaborators, 2017). Further, in more than 70 countries the prevalence of obesity has doubled and has continuously increased in most other countries. Reasons to be concerned about these statistics is that whilst knowledge and understanding regarding the causes and consequences of obesity has improved over this period the issues surrounding obesity are unabating (Friedrich, 2017). Obesity is considered to be related to multiple physical and mental comorbidities and is an incontrovertible risk factor for all-cause and cardiovascular disease mortality (Ortega, Lavie, & Blair, 2016). Therefore, if left to progress along its current path, more and more individuals will die younger and treatment of obesity, and its associated health problems, will have severe detrimental economic consequences on national health care systems and societal resources (Tremmel, Gerdtham, Nilsson, & Saha, 2017).

At the individual level the solution for tackling global obesity appears straightforward, consume fewer calories through healthier food choices and increase daily physical activity. Yet, there is considerable evidence globally that transitions towards unhealthier dietary and physical activity patterns are often the manifestations of societal and environmental changes that emerge as a result of a lack of supportive policies in health, agricultural, transport, urban planning, food processing, distribution, marketing, and educational sectors (World Health Organisation, 2017b).

Specifically, changes in the food environment and food systems are major drivers, with increased availability, accessibility, and affordability of energy-dense foods, along with intense marketing of such foods, explaining behaviours that lead to excess energy intake (Swinburn, Sacks, Hall et. al., 2011). Further, the reduced opportunities for physical activity that have followed urbanisation and other changes in the built environment are also considered to be significant drivers.

Development of Unhealthy Habits

In the absence of supportive policies that drive positive actions, unhealthy decisions and behaviours are more likely to become largely habitual (Gardner, 2015). When unhealthy eating and sedentary behaviours are understood as "habits", Verhoeven, Adriaanse, Evers, and De Ridder's (2012) conceptualisation is worth noting. These authors suggest that "habits develop when a specific action to achieve a particular goal is performed repeatedly under the same situational condition, thereby creating a mental association between the goal and the situation triggering the behavioural response" (p. 759). In addition, the more frequently a behaviour is carried out the more likely that it is to become automatic (Orbell & Verplanken, 2010). Given the globally reported transitions of dietary behaviour and reduction in physical activity, the increased proximity and accessibility to unhealthy practices, which have been afforded by rapid urbanisation, appear to have created ideal conditions for negative habits to develop. When considered within the context of obesity prevalence, the automatic and enduring nature of habits is precisely what makes intervening challenging, given that habits are reported to be resistant to change. Indeed, Aarts, Verplanken and van Knippenberg (1998) suggested that in the majority of instances habits are performed efficiently, effortlessly, unconsciously, unintentionally, and with little controllability. As a result, behaviour change interventions are required to

overcome these characteristics before alternative, healthy habits may be adopted (Gardner, 2015).

Mindlessness

With respect to unhealthy habitual behaviours these actions (e.g., unhealthy eating and sedentary lifestyles) have been grouped together under the umbrella of *mindlessness* (Bahl, Milne, Ross, & Chan, 2013), which has been characterised as a lack of awareness regarding daily decisions made about health-related choices or the factors influencing these decisions. To illuminate, it is worth considering unhealthy eating behaviours as mindless acts as they are not necessarily determined by hunger or nutritional needs, but rather by other external factors (e.g., availability and/or portion sizes; Wansink, 2006). Such automatic processes are not inherently negative, if the observed behaviour is not damaging to one's health. The danger of mindless action is that if individuals genuinely believe they are eating as a result of hunger, moods or food preferences, they are less likely to be open to the possibility of change.

With obesity prevalence in mind, it is imperative to develop effective behavioural interventions to improve diet quality and promote physical activity. Grounded in psychological principles, many interventions aimed at promoting healthy behaviours rely primarily on educating the public in order to change intentions and, ultimately, behaviour (e.g., Brug, Oenema, & Campbell, 2003; Grunert & Wills, 2007; Larsson, Lissner, & Wilhelmsen, 1999; Wammes, Breedveld, Looman, & Brug, 2005). However, findings from a meta-analytic study suggest that such an approach may only be effective for one-off or infrequently performed behaviours, such as attending periodic health checks or receiving vaccinations (Webb & Sheeran, 2006). In contrast, Webb and Sheeran also noted that for behaviours performed frequently in a stable context, the success of information-based interventions was found to be

limited. As such, fundamental to the efficacy of interventions aimed at altering habits is the need to focus one's attention to the present, so that self-awareness of decisions and intentions can break through and challenge autonomous behaviour. Indeed, Riet and colleagues (Riet, Sijtsema, Dagevos, & De Bruijn, 2011) suggest that interventions aimed at bringing about long-term behaviour change should be underpinned by habit theory as these are likely to be more effective than information-based efforts.

Mindfulness for Overcoming Habits

A habit-breaking concept that has received increased attention over the past decade that aims to overcome mindless behaviours is that of mindfulness. Operationally, mindfulness is described as an awareness that emerges through purposely paying attention in the present, non-judgementally (Kabat-Zinn, 2003) or without reacting to observations (Olson & Emery, 2015). It is this focus on awareness that appears pivotal to improving self-regulated thought processes, decisions and behaviours. Explanations for why mindfulness should increase self-regulation are well documented (Taylor & Mireault, 2008). For example, social cognitive theorists, Baumeister and Heatherton (1996) suggested that the ability to monitor internal and external cues is essential for enabling individuals to override impulses and thus implement willed goals. Further, mindfulness skills are reported to increase the ability of individuals to monitor both progress towards a desired goal and the urges that interfere with such progress. With respect to the present study, there appears to be a wealth of research supporting the positive relationship between mindfulness and: (a) eating behaviours (cf. Mantzios & Wilson, 2015); and (b) weight loss (cf. Olson & Emery, 2015). This is unsurprising given that effective weight management programmes necessitate significant modifications to individuals' behavioural patterns

in order to reduce calorie consumption and increase energy expenditure. To achieve these changes over time requires substantial self-regulatory capacity, supported by improving individuals' mindfulness with the aim of altering responses to unhealthy habitual behaviours (Olson & Emery, 2015).

Development of mindfulness through self-regulation. According to Schultz and Ryan (2015), because mindfulness is related to the capacity for openly attending to internal and external experiences in the present, it enables and supports the self-insight necessary for ensuring one's values are in accordance with one's behaviour. Further, it builds a framework that aids the blend of that particular behaviour with values that are already part of the self. This awareness is an important substrate for developing self-regulation, which may help to foster the integration of desirable habits into daily behaviours (Deci & Ryan, 1985). The first studies to investigate this premise within the psychological domain were conducted by Brown and Ryan (2003), who examined the dispositional and state-like nature of mindfulness with autonomous daily activities. In their examinations with both student and adult populations, they noticed that higher levels of both dispositional and state mindfulness predicted greater self-regulation, which when harnessed effectively over time resulted in more beneficial autonomous activity in daily life.

Additional support for the relationship between mindfulness and self-regulation is offered from the neuroscience literature, where a *Translational Prevention Framework* has been proposed to facilitate understanding of the mechanisms underlying the effectiveness of mindfulness training and the development of self-regulation (Tang & Leve, 2016; see Figure 1). Indeed, several neurobiological studies indicate that this type of mindfulness training may have an

effect on the plasticity of brain structure and functioning (e.g., Fox, Nijeboer, Dixon et al., 2014; Tomasino, Fregona, Skrap, & Fabbro, 2012). Taking into account the

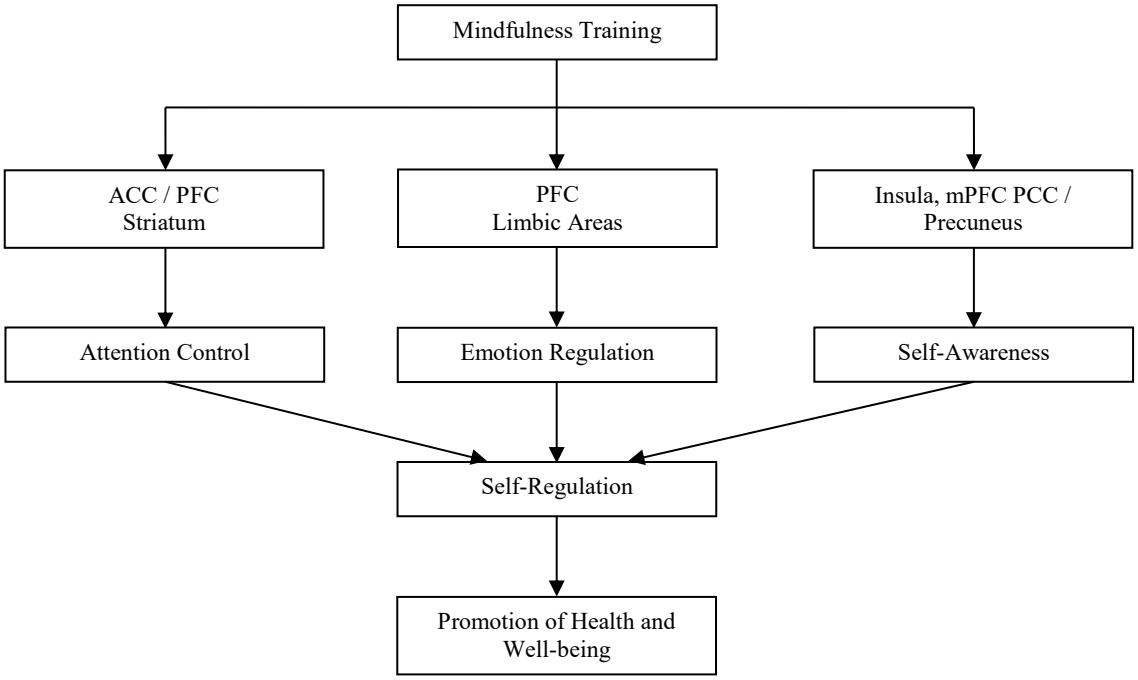

Figure 1. Integrated translational framework illustrating the neurobiological and behavioural mechanisms and how mindfulness training affects self-regulation outcomes (Tang & Leve, 2015). Abbreviations for regions of the brain; anterior cingulate cortex = ACC, prefrontal cortex = PFC, medial PFC = mPFC, posterior cingulate cortex = PCC).

research from both the biological and health promotion sciences, Tang and Leve (2016) proposed that the underlying brain regions and networks affected by mindfulness training may be associated with observable changes at the behavioural level with regards to specific mental capacities associated with self-regulation, including: (a) attentional control; (b) emotion regulation; and (c) self-awareness (see Figure 1). In light of this, as well as information from the psychology literature, the challenge for weight management interventions that incorporate mindfulness principles is to ensure attention is afforded to these capacities when constructing a meaningful programme of support. In doing so, behaviours that are considered

unhealthy can be challenged, and the preceding decision-making processes replaced with more desirable options. Subsequently, it is these alternative processes that need to be coupled with healthy behaviours and developed until autonomy occurs (Mantzios & Wilson, 2015; Olson & Emery, 2015).

In summary, mindfulness is a potential activity for self-regulating thoughts, decisions and behaviours, which if harnessed effectively can challenge maladaptive habitual processes (e.g., eating habits; sedentary lifestyles) to facilitate positive behaviour change. In this sense, conceptually, large-scale weight management interventions can be an integral component of government initiatives focused on tackling obesity. Whilst these purported relationships are intuitively appealing, at present, there is a lack of literature regarding how being mindful and self-regulatory in a given moment can be used as a learning experience to further enhance these processes during future situations.

The Role of Reflective Practice for Enhancing Mindfulness and Self-Regulation

To better understand the transformative nature of mindfulness and self-regulation and appreciate how learning practices may be incorporated into weight management interventions, consideration of the reflective practice literature is warranted. This area of interest has evolved significantly over the past decade, and can provide insights into the developmental nature and connectedness of mindfulness and/or self-regulation. That said, to the author's knowledge, this three-fold relationship has yet to be examined explicitly. However, given what is currently known regarding the relationship between mindfulness and self-regulation, it seems reasonable that in the event that literature is available that links reflective practice and mindfulness (e.g., Mamede, Schmidt, & Rikers, 2007), and reflective practice and self-regulation (e.g., Jonker, Elferink-Gemser, de Roos, & Visscher, 2012; Jonker,

Elferink-Gemser, Tromp, Baker, & Visscher, 2015), a framework for examining all three concepts will help to better guide behaviour change interventions.

In the first instance, within the medical and health sciences literature, reflection-on-practice has been championed as integral for releasing practitioners from the shackles of automatic decision-making processes and behaviours (e.g., Mamede et al., 2007; Peden-McAlpine, Tomlinson, Forneris, Genck, & Meiers, 2005; Taylor, Sims, & Hill, 2015). These authors suggest that without reflection automatic routines that have been developed over a prolonged period of time are allowed to persist. Whilst this is not inherently bad for practice, it is proposed that behaving without self-awareness and without being present in the moment is more likely to result in errors of judgment and maladaptive behaviours. For example, Mamede, Schmidt and Penaforte (2008) found that accuracy of complex medical diagnoses significantly improved following engagement with reflective practice, whilst Peden-McAlpine et al. (2005) provided evidence that enhanced reflexivity results in nursing actions that are aligned to values and beliefs of the families they encounter thus creating more caring environments in intensive-care units. From the perspective of medical diagnoses, it is suggested that reflective reasoning allows practitioners to better embed mindfulness into their practice, which subsequently allows them to become more aware of their own reasoning (Mamede et al., 2007).

In contrast, there is an emerging evidence base within the sport and exercise sciences that self-regulation is predictive in terms of the achievement levels individuals are able to attain (e.g., Anshel & Porter, 1996; Cleary & Zimmerman, 2001; Jonker et al., 2012; Jonker, Elferink-Gemser, Tromp, Baker, & Visscher, 2015). Indeed, according to Jonker et al. (2012), the only factor that distinguished between the self-regulation skills of high and low achieving international and national level

athletes was that of reflection. To understand why reflecting on experiences may have this differentiating effect, consideration is given to Peltier, Hay, and Drago (2006) who suggested that reflection helps the learner to comprehend knowledge and skills that have been acquired and to apply them in various situations. In a similar sense, the notion of achievement or success appears to share similar mediators or psychological processes with other domains. Indeed, a systematic review of mediators that contribute to successful behaviour change in obesity interventions, support self-regulation and reflection skills as the best predictors of beneficial weight and physical activity outcomes (Teixeira, Carraca, Marques, Rutter, Oppert, De Bourdeaudhuij, Lakerveld, & Brug, 2015). Understanding the relationship between self-regulation and achievement, and the role that reflection plays in this process, can provide insights for facilitating actions in individuals who want to bring about change to their circumstances, autonomous motivation, self-efficacy and persistence towards desirable goals. Indeed, Cleary and Zimmerman (2001) suggested that self-regulated individuals plan their endeavours in advance, monitor regularly whether they are still on track, and evaluate their achievement outcomes afterwards. During these planning, monitoring, and evaluation cycles, individuals reflect constantly on the learning process, which enables them to use acquired knowledge and strategies for future actions (Zimmerman, 2010).

Understanding how reflective practice contributes to improved mindfulness and/or self-regulation of thoughts, emotions, decisions and behaviours appears worthwhile. Indeed, the role that reflective practice plays in connecting and developing these related concepts may be crucial for enhancing the effectiveness of these practices that directs the user nearer to their desired goals. The key distinguishing feature between both mindfulness and self-regulation, and reflection, is

timing (Tusaie & Edds, 2009). Key attributes of mindfulness and self-regulation include being present in the moment, being aware of the self and the environment and having the ability to pay attention to what is occurring in the moment (White, 2014). However, during reflection attention tends to be more focused on the past or the future rather than the present (Taylor et al., 2015). To better understand why this is the case, the cyclical nature of learning through reflective practice is worth considering. For example, prominent models within the education literature that encompass reflective practice, such as Kolb's (1984) *Experiential Learning Cycle* (Figure 2) and Gibbs's (1988) *Reflective Cycle,* implicitly highlight time as a factor due to the requirement for an experience to occur before a process can be initiated that allows learning to take place. When accounting for the cyclical nature of learning from experiences, it seems reasonable that reflective practice may be more closely linked to both mindfulness and self-regulation than was previously thought. Indeed, the *concrete experience* that is being mindful, self-regulatory and behaving, as conceptualised by Tang and Leve's (2015) *Translation Prevention Framework*, has to occur in the moment, for reflections about the experience to occur. Furthermore, although cyclical in diagrammatic representation, Kolb suggested that the model should be understood as a continuous spiral, whereby the process of reflective observation enables the concrete experience to be brought into a state of abstract conceptualisation. When framed, the abstract concepts guide active experimentation and subsequently lead to more concrete experience. If learning has taken place a new form of experience (i.e., more effective use of mindfulness and self-regulation) on which to reflect and conceptualise should be created in each cycle as subsequent action is experienced differently.

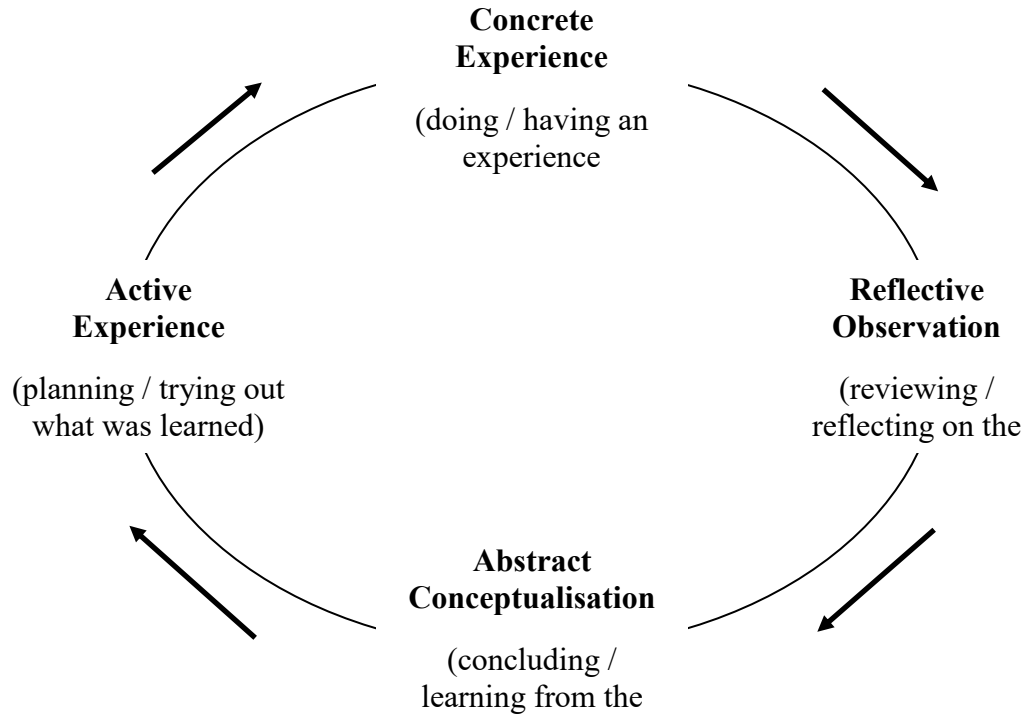

Figure 2. Kolb's (1984) Experiential Learning Cycle.

Research Rationale and Aim

The preceding review has attempted to generate knowledge to better understand three separate potential causal relationships. First, it explored the effect of mindfulness on self-regulation as a means to limiting unhealthy behaviours. Second, the relationship between reflective practice and mindfulness was considered on the bases that in order to achieve a mindful state in a given moment requires transformative learning from previous attempts at being mindful. Third, the relationship between self-regulation and the use of reflection was examined as a result of recent literature that distinguishes between higher and lesser achievers based on the ability to reflect and learn from experiences. Collectively, these relationships point towards the possibility that unhealthy autonomous lifestyle habits (e.g., mindless eating and sedentary behaviours), and associated cognitive processes can be processed

more analytically as a means to facilitating more favourable outcomes. Whilst there is an emerging empirical evidence base for each of these three relationships, presently, there is a lack of research that has examined all three concepts under one overarching framework. Based on the reported potential of each of these relationships it seems intuitively appealing to group these concepts into a model that could be used to guide and structure behaviour change weight management interventions. Such a model should consider the "in the moment" associations between mindfulness, self-regulation and health behaviours as presented within the neuroscience literature (Figure 1) and how these might be contextualised, according to Kolb (1984), as a *concrete experience.* Following Kolb's experiential learning cycle, effective reflective practice should allow for learning from the original concrete experience to occur, thus enhancing the ability to be mindful and self-regulatory in future circumstances. Specifically, linking this idea to the present study, behaviour change interventions to promote improved health should include mindfulness and self-regulation elements albeit within a learning environment that encourages new knowledge and understanding to be used for overcoming future unhealthy behaviours.

Although the purported positive relationships between reflective practice, mindfulness and self-regulation are promising, it is still worth noting that there remains a dearth of evidence examining the impact of enhanced reflexivity on clients receiving support-services in general (cf. Picknell et al., 2014). In addition, researchers continue to emphasise the need for more empirical evidence to support the beneficial contentions of reflective practice (e.g., Huntley, Cropley, Gilbourne, & Sparkes, 2014; Mann, Gordon, & MacLeod, 2009). As such, the present study aims to generate information that goes some way towards overcoming these shortfalls identified within the reflective practice literature. Specifically, the objectives of

research were to determine: (a) the effectiveness of a reflective practice intervention for improving reflection and/or mindfulness skills of health support seeking clients; and (b) whether improved reflection and/or mindfulness skills leads to improved health outcomes. Based on the literature reviewed herein that outlines the primary link between mindfulness and self-regulated behaviour, and the potential for reflective practice to mediate this link, a number of hypotheses were proposed for the present study. First, individuals participating in reflective practice intervention would achieve higher scores for reflection and mindfulness skills compared to individuals not receiving this training Second, individuals participating in a generic health and fitness programme would achieve improved health status results from baseline to post-intervention. Third, individuals participating in a combination of a generic health and fitness programme and mindfulness training would achieve improved health status results compared to those just exposed to the generic health and fitness programme. Finally, individuals participating in a generic health and fitness programme, a mindfulness training programme, and reflective practice intervention would achieve improved health status results compared to individuals who only receive the mindfulness element and/or generic health and fitness programme.

Research Context

The reported issues relating to obesity as outlined at the beginning of this chapter have been exacerbated in the Middle East (for a detailed review see Chapter 4) where associated countries have some of the highest obesity prevalence rates globally (The Global Burden Disease 2015 Obesity Collaborators, 2017). In summary, specific to the United Arab Emirates (UAE), national prevalence rates (e.g., adult males ≈ 27%; adult females ≈ 33%) are noted as being double those of global averages (e.g., adult males ≈ 10%; adult females ≈ 15%). Recognising the potential

economic cost of supporting a nation that is getting heavier and evermore exposed to preventable communicable and non-communicable diseases, the UAE Government has invested heavily into a preventative healthcare initiative. For example, the National Service Physical Readiness (NSPR) initiative allows all military conscripts opportunities to receive expert support with the aim of improving overall health, fitness, physical performance and wellbeing. Whilst the NSPR has been commended for achievements relating to health improvements of national service recruits, the need to develop interventions that are not just impactful, but long-lasting, is imperative (Abdulle et al., 2018; Center for Strategic & International Studies, 2017). In light of this requirement the present study is justified on three counts: (a) National Service is compulsory for all 18-30 year old Emirati males who are therefore a representative sample on young adults in the general population; (b) as obesity prevalence trends in the UAE are similar, if not more pronounced than those noted at the global level, the National Service programme provides an information rich sample that is reflective of the health concerns of young obese adults worldwide; and (c) the applied setting in which the research study is to be conducted provides high ecological validity, meaning that findings are more likely to be generalisable to real-life settings in the wider population.

Method

Research Design

To ensure confidence in the conclusions drawn regarding the impact of the imposed treatments on pre-defined dependent variables (i.e., internal validity), an experimental between-group pre-posttest design with two independent variables (group and intervention type) was employed. An experimental method was used to establish causality between the treatments and their impact on health outcome

measures (Campbell & Stanley, 2015), key to which are the research characteristics of control and randomisation (Smith, 2010). Regarding experimental control, although the research was carried out in a natural setting, the nature of National Service basic military training is that all aspects of recruits' lifestyles are tightly controlled during a specific period of time. All individuals enrolled on basic training were exposed to identical aspects of military training in terms of their daily structure, physical demands, and access to a nutrient-balanced diet. Specific to randomisation, although recruits were assigned to the research project based on their initial health status, their allocation into one of three treatment groups was based on random selection methods. Randomising participants helped to remove the effect of extraneous variables (e.g., age, injury history) and minimised bias associated with treatment assignment (Hagger-Johnson, 2014). Randomisation is widely considered to be the optimal approach for participant assignment in experimental research because it strengthens the results and data interpretation (McEntegart, 2003; Scott, McPherson, Ramsay, & Campbell, 2002).

Participants

Participants were 150 UAE male nationals aged between 17 and 21 years (M = 17.72, SD = 0.95) enrolled on the UAE Armed Forces National Service Basic Military Training Programme. This phase of training is predominantly residential and lasts for 16 weeks in total. All participants were selected based on pre-defined criteria specific to their health status. This selection categorisation is based primarily on an in-depth screening protocol that can be summarised into three phases. First, the absence, presence or history of medical conditions is determined. Second, a decision is made about whether an individual should be approved for general military training or downgraded to complete a more relative programme. Third, individuals are sub-

categorised by Body Mass Index (BMI) and grouped together to complete their basic training. The purpose of this process is to minimise the likelihood of individuals being exposed to training elements or inappropriate intensities that may otherwise adversely affect their health and wellbeing. As such, the participants selected for the present study were those who had been initially downgraded based on their medical status, and had been classified as *Obese – Class III* (World Health Organisation, 2017a) as a result of their BMI exceeding 40.00 kg/m^2 (M = 44.17, SD = 3.18). All participants were provided with an information sheet that detailed and outlined what was expected of them throughout the project, and were subsequently required to provide written informed consent prior to participation, all of whom did.

Measures

In line with Public Health England's (PHE, 2015) recommendations, justification for focussing on specific variables comes from two sources. First, the aim of the military conscription weight management programme is to improve the overall health, fitness and wellbeing of National Service recruits. Key performance indicators for this initiative have been developed based on data collected and analysed over numerous previous cohorts. Second, the aim of the present study was to evaluate the development of mindfulness and reflective skills, and examine their effects on facilitating healthier behaviours amongst individuals enrolled on the weight management programme. With these aims in mind, the proceeding section will outline those measures, which have been reviewed, critiqued and selected based on their efficacy as reliable, valid and meaningful determinants of change.

Outcome-oriented measures. Traditionally, weight management interventions have largely focused on weight loss, or subsequently, BMI as an indicator of success (Franz, VanWormer, & Crain, 2007). However, more recently, it

has been recommended that interventions that include both diet and physical activity should include measures other than weight and BMI in order to capture changes that reflect reductions in body fat and increases in fat-free mass (Millstein, 2014).

BMI. BMI is widely considered to be associated with present and future obesity-related health complications (Stenholm et al., 2017). In addition, it is regularly used as a screening tool as part of large scale population monitoring, due to its relatively easy procedure and accuracy compared with other body composition assessments (Tuttle, Montoye, & Kaminsky, 2016). As such, and in consideration of the time-constrained nature of National Service initial screening, BMI was used to streamline new recruits into groups with individuals of similar health statuses. Inclusion criteria onto the health and fitness programme was compulsory for anyone with a BMI $\geq$ 40.00kg/m^2. BMI was calculated as weight [in kilograms (kg)]/height [in meters (m)]^2.

Waist to height ratio (WHtR). In recognition of on-going debates surrounding the sole use of BMI for defining obesity (World Health Organization Expert Consultation, 2004), WHtR was also used for determining changes in participants' health status. Indeed, WHtR is considered more sensitive than BMI for identifying early warning of health risks. It is significantly associated with all risk factors for obesity and metabolic syndrome and has been shown to predict morbidity and mortality in longitudinal studies (Patel et al., 1999). WHtR was calculated as weight (kg) / height in centimetres (cm). The recommended boundary value of 0.5 (Ashwell & Hsieh, 2005) was utilised, with any noted reductions in WHtR's being considered a beneficial health improvement.

Body Fat Percentage (BF%): To further support the World Health Organization's (World Health Organization Expert Consultation, 2004)

recommendation of multiple assessments for drawing conclusions regarding the effectiveness of interventions targeting body composition, BF% was determined by electrical bioimpedance using the Tanita MC-780 multi frequency segmental Body Composition Analyser (Tanita Corporation, Tokyo). The use of bioelectrical impedance analysis has indicated strong relative agreement with universally accepted body composition measurements, including Hydrostatic underwater weighing (Utter, Nieman, Ward, & Butterworth, 1999), and dual energy X-ray absorptiometry (Pateyjohns, Brinkworth, Buckley, Noakes, & Clifton, 2006).

Aerobic capacity. There is an on-going debate regarding the relationship between physical activity and its contribution to weight loss (cf. Malhotra, Noakes, & Phinney, 2015). On one hand, physical activity is purported to not promote weight loss (cf. Malhotra, Noakes, & Phinney, 2015), whilst other systematic reviews (e.g., Peirson, Douketis, Ciliska, et al., 2014; Swift, Johannsen, Lavie, Earnest, & Church, 2014) not only report the contribution of exercise for weight loss, but also on secondary elements including many cardiometabolic risk factors (e.g., insulin resistance and inflammation). Regardless of whether physical fitness contributes to weight loss *per se* what is clear is that exercise is known to reduce body fat and increase or maintain fat-free mass (Millstein, 2014). Given the variety of body composition measures considered as part of this study for drawing conclusions regarding the efficacy of the interventions, physical fitness (aerobic capacity) was considered necessary when evaluating individuals' overall health status.

Due to the restricted time to perform physical fitness tests during basic military training, aerobic capacity (i.e., VO_{2peak}) was determined by use of the Rockport Walking Test (Kline, Porcari, Hintermeister et al., 1987). The test required participants to walk a distance of one mile as fast as possible whilst ensuring to

maintain an even pace throughout. This procedure and its association with maximal oxygen uptake has received much attention with diverse populations and is widely considered a valid physical fitness measure (e.g., Dolgener, Hensley, Marsh, & Fjelstul, 1994; George, Fellingham, & Fisher, 1998; Weiglein, Herrick, Kirk, & Kirk, 2017), with correlation coefficients ranging from $r = 0.74$ to $r = 0.88$, indicating a strong relationship with gold standard protocols. Using the formula, VO_{2max} *(ml/kg/min) = 132.853 – (0.0769 * weight) - (0.3877 * age) + (6.315 * gender) - (3.2649 * mile walk time) - (0.1565 * ending heart rate),* where gender = 1 for male, and 0 for female, changes in aerobic capacity from pre- to post-intervention were determined.

Process-oriented measures.

Reflection Questionnaire (RQ). Due to a recognised scarcity of instruments for determining whether individuals engage in reflective thinking, and to the extent they are able to reflect, Kember, Leung, Jones et al. (2000) developed a RQ. The framework used to underpin the development of the questionnaire was based on Mezirow's (1981) theory of transformative learning for adult education, which distinguishes between *non-reflective* (i.e., Habitual Action, Thoughtful Action) and *reflective* (i.e., Reflection, Critical Reflection) actions in practical settings. Due to the distinguishable features proposed by Mezirow (1981) between varying types of actions, numerous studies from a wide range of disciplines have attempted to discern levels of reflective thinking as a method of evaluation (e.g., Chirema, 2007; Wong, Kember, & Yan, 1995). However, the majority of studies examining levels of reflective thinking have relied on researchers' and educators' evaluations of learners' reflective journal writing and/or assignment submissions. As a result of this limitation Kember et al. (2000) developed their theory-based, self-report RQ to assess

individuals' perceptions of their ability to reflect following involvement in educational programmes that promote reflective learning.

The RQ consists of 16 items and is divided into four scales. Two scales assess non-reflective actions, whilst the other two scales assess reflective actions. Four items for each scale are responded to using a five-point Likert scale (*1 = strongly disagree; 5 = strongly agree*) with cumulative answers ranging between four and 20. Whilst the psychometric properties of the RQ have not been exposed to extensive scrutiny the limited support that does exist encourages its use as a valid and reliable instrument for comparing groups of participants subjected to different treatment conditions, as well as part of repeated measures research designs (Kember et al., 2000; Lethbridge, Andrusyszyn, Iwasiw, Laschinger, & Rajulton, 2013). Indeed, both Kember et al. (2000) and Lethbridge et al. (2013) reported Cronbach alpha reliabilities that approximated 0.70 for each of the questionnaire's scales. These values are widely accepted as indicating adequate internal consistency and assure researchers that each scale of the questionnaire measures the dimension of reflective thinking it was developed to depict (Kline, 1999). Both studies used confirmatory factor analyses and concluded that the four-factor model was a good fit of the four scales to the theoretically derived dimensions of reflective thinking proposed by Mezirow (1981).

Reflection-in-learning Scale (RLS). The RLS was developed based on concerns that without appropriate self-assessments of reflective learning practitioners may resist the values often espoused of reflective practice (Mann et al., 2009). The first version of the RLS allowed participants to report their appraisals of reflective learning based on the concept of reflection as a cognitive regulation strategy. Initial investigations with medical students utilised the RLS as a measure of reflective learning as a product of involvement in an educational programme (Sobral, 2001;

Sobral, 2000). However, later studies considered reflective learning as a process that if harnessed well, could lead to positive performance outcomes (i.e., academic achievement; Sobral, 2005). The questionnaire consists of 14 items and is appraised via a seven-point Likert scale ranging from *never* = 1 to *always* = 7. The instrument also includes a four-point global scale designed to assess personal efficacy for reflection in learning. In two validation studies, with over 450 participants, support was provided for the construct validity of the RLS scale, with reliability analysis showing good internal consistency for both start ($\alpha = 0.84$) and end-of-programme ($\alpha = 0.86$) measures.

Mindful Attention Awareness Scale (MAAS). The MAAS was used in order to assess the tendency to be attentive and aware of present experiences. The questionnaire includes 15-items, which are responded to using a six-point Likert scale anchored by *almost always* to *almost never* (for a copy see Appendix 11). Mindfulness is indicated with a single total score. Internal consistency levels (Cronbach's alphas) have been shown to range from 0.80 (Brown & Ryan, 2003) to 0.90 (Carlson & Warren, 2005). The MAAS has demonstrated high test-retest reliability, discriminant and convergent validity, known-groups validity, and criterion validity.

The Mindful Eating Questionnaire (MEQ). The ability for individuals to be mindful when eating will be assessed using the MEQ (Framson, Kristal, Schenk et al., 2009). The MEQ is a 28-item self-report instrument that consists of five subscales (*Disinhibition* – ability to cease eating when full; *Awareness* – noticing the effects of food on the senses and how food affects internal states; *External Cues* – measures eating in response to environmental triggers; *Emotional Response* – eating in response to negative emotions; Distraction – focussing on other activities whilst eating), which

are responded to using a four-point Likert scale anchored by *never/rarely* and *usually/always* (for a copy see Appendix 12). The overall summary score is calculated as the mean of the five subscales. Framson et al. (2009) demonstrated that the questionnaire was a valid measure with adequate construct validity and reliability (Cronbach's $\alpha = 0.64$). Subscale scores also had good internal consistency reliability: disinhibition (0.83), awareness (0.74), external cues (0.70), emotional response (0.71), and distraction (0.64).

Intervention

Mindfulness-Based Eating Awareness Training (MB-EAT). The purpose of the MB-EAT was to help bring balance to participants eating habits. It involved bringing together a combination of participants' awareness of how their body and mind responds to sensations relating to food, and their engagement with nutrition information and recommendations to meet personal needs and preferences (Kristeller & Epel, 2014). To achieve this the mindfulness intervention was divided into three phases, with each phase consisting of a specific treatment. The treatments within each phase were carefully developed with specific attention afforded to the core concepts highlighted within the literature as key ingredients of effective MB-EAT programmes (cf. Kristeller, Wolever, & Sheets, 2014). These key concepts of mindful eating included: (a) supporting individuals to tune into their own natural physical hunger; (b) helping individuals to learn to realise when they have eaten enough; (c) encouraging individuals to choose their food wisely; (d) cultivating an understanding of nutritional and energy values that food contains; and (e) developing self-awareness of the need to be more mindful.

The first phase (phase A) of the MB-EAT intervention aimed to: (a) introduce participants to the concept of mindfulness; (b) educate them about the benefits of

mindfulness training; and (c) explore various approaches that promote mindfulness. This phase included two sessions over a four week period with one session being delivered every two weeks. The second phase (phase B) of the MB-EAT aimed to develop participants' self-regulation of attention to increase awareness of present-moment experiences without judgement or evaluation. Sessions included an introduction to mindfulness meditation and mindful eating exercises such as encouraging participants to recognise their eating triggers, as well as cues related to hunger, taste satiety and fullness (see Baer, Fischer, & Huss, 2005). This phase included two sessions over a four week period with one session being delivered every two weeks. The final phase (phase C) of the MB-EAT intervention built upon the previous phase's principles, however, more specifically attempted to cultivate different relationships to unhealthy behaviours, especially those associated with conditioned eating habits. This phase included three sessions over a six week period with one session being delivered every two weeks. The MB-EAT was delivered by two resident dieticians working within the Physical Readiness Centre. Staff had received extensive training relating to MB-EAT, and received on-going support during the implementation of the programme by the Physical Readiness Department's Head of Dietetics who is a member of the British Dietetic Association and registered a dietician with the Health and Care Professions Council, UK.

Reflective practice. The reflective practice intervention was also divided into three phases, with each phase consisting of a specific reflective practice treatment. The three reflective practice treatments adopted numerous approaches for facilitating quality reflections as part of a multi-modal approach to developing reflective skills. The rationale for the multi-modal approach emanates from the reflective practice literature (e.g., Jayatilleke & Mackie, 2013; Mann et al., 2009), which has

consistently identified various factors associated with enhancing the learning of more advanced reflective skills. To achieve this, influential elements for enabling the development of reflection and reflective practice were considered. These included: (a) supportive environments; (b) authentic contexts; (c) accommodation for individual differences in learning styles; (d) mentoring; (e) group discussion; and (f) free expression of opinions (Mann et al., 2009). Taking this information into consideration the reflective practice intervention was progressive in nature in order to allow for the inclusion of additional enabling elements without overwhelming the participants with an all-encompassing inception to the training programme.

The reflective practice treatment during the initial phase of the study included two educational workshops delivered over a four-week period (i.e., one session every two weeks). The purpose of these workshops was to introduce participants to the concept, benefits and models of reflective practice, as well as methods and guidance for structuring personal reflections. During this phase, individuals were encouraged to engage with reflective practice relating to previous experiences and seek support from the centres dietician who was on hand to provide regular feedback and advice. The value of initially educating individuals about reflective practice is that they are more likely to understand how, why and when to reflect, and thus more motivated to engage with the process (Cropley, Neil, Wilson, & Faull, 2011). Indeed, in a recent study examining the effectiveness of a reflective practice intervention, Cropley, Hanton, Miles, Niven, and Dohme (2020) found that participants appreciated being involved in educational workshops as they added clarity to the concept and provided opportunities to develop a deeper knowledge and understanding of reflective practice in a safe and supportive environment.

In accordance with previous suggestions in the literature (e.g., Cropley et al., 2020), the second phase of the reflective practice intervention aimed to move beyond traditional educational workshops for developing reflective skills. Whilst an important aspect of any reflective practice intervention, when used in isolation, these approaches have been found to fall short in facilitating the acquirement of more advanced, critical reflective skills (Larrivee, 2008). Therefore, this phase was four weeks in duration and removed participants from the group environment, instead, incorporating individual tutorials (i.e., one session every two weeks) and on-going mentoring from their assigned dietician. The calls for utilising mentoring to support the development of reflective skills is well documented (e.g., Duke & Appleton, 2000; Jayatilleke & Mackie 2012; Mann et al., 2009), with authors suggesting that merely using individual approaches to reflective practice makes the journey towards being more reflective an uncomfortable one (Knowles & Gilbourne, 2010).

The final phase of the reflective practice intervention continued with the mentoring element referred to in the second phase, however, participants were also involved in regular group workshops (one session every two weeks) over the course of six weeks. This action group learning approach is intended to provide participants with valuable access to peer support, so that they can share their experiences and explore situations in detail (Heidari & Galvin, 2003). The structure of the action learning groups included a facilitator (i.e., dietician), who provided a safe environment that promoted confidence and trust for sharing fears and anxieties, thus paving the way for individuals to tap into processes more indicative of critical reflections (Haddock, 1997). The reflective practice intervention was overseen by the author, with elements of the programme being delivered by two of the Physical Readiness Centre's resident dieticians. Both dieticians were involved in a previous

study (see Study 2 of this thesis), which investigated the effectiveness of a detailed reflective practice intervention for facilitating positive changes to their practice behaviours. Across the research period these individuals were noted for improving significantly their ability to reflect critically and to bring about more considered behaviours to their applied work. Following their involvement in the research process, they received additional continued professional development training as part of their employment to further their understanding of conceptual, operational and application issues relating to reflective practice and were therefore considered as qualified to deliver/support the intervention.

Procedure

Prior to the commencement of the present study, the experimental procedures were reviewed and approved by the Cardiff Metropolitan University Research Ethics Committee (ethics code: 16/7/01R; Appendix 13). A study proposal was also submitted for review to the GHQ Armed Forces Security Department, with participants' selection, intervention and data collection procedures being approved (Appendix 14). Due to the nature of military selection and assignment, all participants were grouped together throughout basic training ensuring that they were exposed to the same components and physical demands of the military and bespoke health and fitness programmes. The health and fitness programme consisted of four key features, including: (a) a progressive physical training programme consisting of four, 90 minute sessions per week; (b) a calorie controlled menu served within the camps restaurant at specified meal times; (c) two 45 minute health education sessions per week; and (d) bi-weekly dietetic appointments.

Once enrolled on the research project, participants were further randomly assigned to one of three equally sized (n = 50) intervention groups. Random selection

was carried out using a stratified randomisation procedure. This method is typically used to achieve balance among groups in terms of participants' baseline characteristics (i.e., covariates). Specific covariates were identified by the author who understands the potential influence each covariate has on the dependent variable. Stratified randomisation was achieved by generating a separate block for each combination of covariates, and participants were assigned to the appropriate block of covariates. After all participants had been identified and assigned into blocks, simple randomisation occurred within each block to assign participants to one of the groups (Kang, Ragan, & Park, 2008). All groups were exposed to the above features of the programme, however, the health education element and dietetic services consisted of diverse foci. *Group 1* served as the control group and received a regular health and fitness syllabus covering core topics related to diet, physical fitness and healthy lifestyle management. *Group 2* served as the first treatment group and were exposed to a Mindfulness-Based Eating Awareness Training (MB-EAT) programme. Finally, *Group 3* served as the second treatment group and also completed the MB-EAT, in addition to receiving a reflective practice-based intervention. All groups received their interventions parallel to one another.

Outcome measures were collected at Week 1 (baseline) and Week 16 (post-intervention) of the National Service Basic Military Training Programme, whereas process measures were collected at Week 1 (baseline), Week 8 (mid-point) and Week 16 (post-intervention).

Data Analysis

Data was analysed using IBM Statistical Package for the Social Sciences (SPSS) version 22.0. All data were checked for the assumptions of parametric statistical analysis. On the basis that data met the criteria for parametric procedures,

separate statistical analyses were conducted for process-oriented (i.e., RQ, RLS, MAAS, MEQ) and outcome-oriented measures (i.e., Body Mass, WC, BMI, WHtR, BF%, and Aerobic Capacity). In the first instance, changes to reflective skills and mindfulness throughout the intervention were calculated using seven multivariate analysis of variance (MANOVA) tests, one for each questionnaire and their associated constructs. The purpose of these MANOVA's were to test for interaction and main effects of group by intervention. In the second instance, alterations to outcome measures were assessed using gain score analyses and conducting six separate one-way analysis of variance (ANOVA) tests, one for each dependant variable, with group as the between-subject factor and time as the within-subject factor.

Results

Data Pre-screening

The repeated measures study design allowed for data to be analysed using both multivariate and univariate analysis. Data were tested for missing cases, distributions and assumptions of univariate and multivariate analyses (Field, 2005; Tabachnick & Fidell, 2014). No missing cases and no univariate or multivariate outlying cases (p 0.001) within each dependent variable (Mahalanobis distance test) were identified. Following the guidelines of Field (2005), normality assumptions were tested at the univariate level along with assessments of linearity, multicollinearity and singularity, with all deemed to be satisfactory. For univariate analyses the assumption of sphericity (i.e., variance-covariance matrices for each measure being equal) was required. To test this assumption Mauchly's test of sphericity was used with significant results suggesting that the assumption had been violated (Ntoumanis, 2001). Such instances resulted in the use of an epsilon correction (e.g., Greenhouse-Geisser) as this procedure reduces the degrees of freedom, thus making it more

difficult to find significant results (Myers, Gamst, & Guarino, 2012). For multivariate analyses, there are no assumptions about the form of the covariance matrix, and therefore, there is no need to test sphericity. As such Wilks' Lambda test statistics were used for reporting interaction and main effects.

Anthropometry and Physical Fitness

To determine whether changes in anthropometry and physical fitness results from baseline to post-intervention were different between the control group (CG) and two treatments groups (Group 1 = EG1; Group 2 = EG2), gains score analyses were used (Kanji, 1999). This involved calculating differences in pre- and post-test scores for body mass, WC, BMI, WHtR, BF% and aerobic capacity (VO_{2peak}), and carrying out separate one-way ANOVA's with group as the between-subject factor and time as the within-subject factor. When the treatment main effect was significant, post-hoc analyses were utilised to locate where the differences occurred. The proceeding section reports the findings for each anthropometry and physical fitness variable.

Body mass and BMI. Whilst all three groups' average body mass and BMI decreased from pre- to post-intervention (see Table 1) no differences were noted for the magnitude of change between each group (Body mass CG: $M = 21.67$, $SD = 3.73$; Body mass EG1: $M = 23.23$, $SD = 4.08$; Body mass EG2: $M = 23.29$, $SD = 4.56$; BMI CG: $M = 7.32$, $SD = 1.13$; BMI EG1: $M = 7.88$, $SD = 1.25$; BMI EG2: $M = 7.95$, $SD = 1.29$). Indeed, treatment main effects for body mass and BMI were noted as $F(1, 123) = 2.11$, $p = 0.13$ and $F(2, 123) = 3.35$, $p = 0.06$, respectively.

WC and WHtR. All three groups' average WC and WHtR decreased from pre- to post-intervention (see Table 1) and differences were noted for the magnitude of change between each group (WC CG: $M = 14.41$, $SD = 6.53$; WC EG1: $M = 18.21$, $SD = 6.93$; WC EG 2: $M = 21.05$, $SD = 6.04$; WHtR CG: $M = 0.08$, $SD = 0.03$; WHtR

EG1: $M = 0.11$, $SD = 0.04$; WHtR EG2: $M = 0.12$, $SD = 0.03$), with treatment main effects for WC and WHtR were noted as $F(2, 23) = 11.01$, $p < 0.01$ and $F(2, 123) = 10.83$, $p < 0.01$, respectively. Post-hoc analyses for WC, indicated that differences existed between the CG and EG2 ($M = -6.64$, $SE = 1.42$, $p < 0.017$), whereas no difference existed between CG and EG1 ($M = -3.81$, $SE = 1.41$, $p > 0.017$), and EG1 and EG2 ($M = -2.83$, $SE = 1.43$, $p > 0.017$). Post-hoc analyses for WHtR indicated differences existed between the CG and EG2 ($M = -0.04$, $SE = 0.01$, $p < 0.017$), whereas no difference existed between CG and EG1 ($M = -0.02$, $SE = 0.01$, $p > 0.017$), and EG1 and EG2 ($M = -0.02$, $SE = 0.01$, $p > 0.017$).

BF%. All three groups' average BF% decreased from pre- to post-intervention (see Table 1) and differences were noted for the magnitude of change between each group (BF% CG: $M = 8.83$, $SD = 1.60$; BF% EG1: $M = 10.52$, $SD = 3.67$; BF% EG2: $M = 15.46$, $SD = 3.79$), with treatment main effects for BF% were noted as $F(2, 123) = 49.21$, $p < 0.01$. Post hoc analyses for BF% indicated differences existed between the CG and EG2 ($M = -6.63$, $SE = 0.69$, $p < 0.017$), whereas no difference existed between CG and EG1 ($M = -1.69$, $SE = 0.69$, $p > 0.017$), and EG1 and EG2 ($M = -4.94$, $SE = 0.70$, $p > 0.017$).

Aerobic Capacity. Whilst all three groups' average VO_{2peak} scores increased significantly pre- to post-intervention (see Table 1) no differences were noted for the magnitude of change between each group (VO_{2peak} CG: $M = -7.18$, $SD = 8.68$; VO_{2peak} EG1: $M = -9.71$, $SD = 9.01$; VO_{2peak} EG2: $M = -9.38$, $SD = 9.69$), with treatment main effects for VO_{2peak} scores noted as $F(1, 123) = 2.11$, $p = 0.13$ and $F(2, 123) = 0.97$, $p = 038$.

Reflective Skills and Mindfulness

To determine whether changes in questionnaire data from baseline to post-intervention were different between control (CG) and treatment groups (Group 1 = EG1; Group 2 = EG2), seven separate 3 x 4 MANOVA's were carried out to test for interaction and main effects of experimental group (between-subject factor) by treatment phase (within-subject factor) for each construct. Further significant within-subject main effects were examined using follow up paired samples t tests to determine where changes to questionnaire scores differed significantly between treatment phases. For these multiple comparisons, Bonferroni adjustments were made to the alpha level for determining significance in order to prevent the likelihood of making Type I errors (Field, 2005). This involved dividing alpha ($\alpha = 0.05$) by the number of required paired samples t tests ($n = 6$) for each construct. As such, alpha was adjusted from 0.05 to 0.008. For further examination of between-subject main effects, Post-hoc Tukey tests were used to identify differences between treatment groups' scores at multiple treatment phases. The proceeding section reports the findings for each questionnaire construct.

Table 1

Mean and standard deviation for each group's body composition and physical fitness results from baseline to post-intervention.

Measure	Group	Baseline M (SD)	Post-intervention M (SD)	*t*
Body mass (kg)	CG	128.42 (11.42)	106.75 (9.57)*	38.05
	EG1	131.27 (12.80)	108.04 (10.80)*	36.90
	EG2	130.36 (11.71)	107.07 (8.99)*	32.67
WC (cm)	CG	106.75 (9.57)	110.87 (6.20)*	-3.61
	EG1	126.90 (8.67)	108.69 (8.43)*	17.03
	EG2	126.69 (9.39)	105.65 (8.64)*	22.32
BMI	CG	43.45 (2.86)	36.13 (2.51)*	42.63
	EG1	44.52 (3.16)	36.64 (2.80)*	40.71
	EG2	44.70 (3.50)	36.75 (3.10)*	39.47
WHtR	CG	0.73 (0.04)	0.65 (0.04)*	14.67
	EG1	0.74 (0.05)	0.63 (0.04)*	16.60
	EG2	0.74 (0.05)	0.62 (0.05)*	22.58
BF (%)	CG	41.68 (4.38)	32.85 (4.26)*	36.90
	EG1	43.85 (6.48)	33.33 (4.28)*	18.56
	EG2	48.61 (7.04)	33.15 (5.46)*	26.12
VO_{2peak}	CG	21.50 (6.56)	28.68 (9.43)*	-5.43
	EG1	21.19 (6.29)	30.90 9.73)*	-6.99
	EG2	17.30 (7.13)	26.68 (10.27)*	-6.20

Note. *$p < 0.01$.

Reflection Questionnaire. Results indicated interaction effects for RHA [Wilks' Lambda = 0.74, $F(6, 242) = 6.71$, $p < 0.05$, $\eta_p^2 = 0.14$], RQU [Wilks' Lambda = 0.70, $F(6, 242) = 7.84$, $p < 0.05$, $\eta_p^2 = 0.16$], and RQR [Wilks' Lambda = 0.73, $F(6, 242) = 7.02$, $p < 0.05$, $\eta_p^2 = 0.15$], suggesting that each treatment group followed divergent trends across the treatment period. For RQCR there was no interaction effect [Wilks' Lambda = 0.89, $F(6, 242) = 2.47$, $p > 0.05$, $\eta_p^2 = 0.06$]. Assumptions of sphericity were violated for RQHA ($p < 0.05$) and RQCR ($p < 0.05$). Within-subjects main effects were noted for RQHA [$F(3, 344) = 42.71$, $p < 0.05$ $\eta_p^2 = 0.26$], RQU [$F(3, 3697) = 51.99$, $p < 0.05$, $\eta_p^2 = 0.30$], RQR [$F(3, 369) = 40.35$, $p < 0.05$, $\eta_p^2 = 0.25$], and RQCR [$F(3, 341) = 12.32$, $p < 0.05$, $\eta_p^2 = 0.09$], indicating that scores for each of these questionnaire constructs fluctuated across the treatment period (see Table 2).

Results of the follow up paired samples t tests indicated that for RQHA, RQU and RQR differences in scores for each treatment phase were noted except between Phase 1 and Phase 2 (i.e., RQHA $p = 0.078$; RQU $p = 0.496$; RQR $p = 0.856$). For RQCR there were no changes between Phase 1 and Phase 2 ($p = 0.022$), Phase 2 and Phase 3 ($p = 0.032$), and Phase 3 and Phase 4 ($p = 0.558$). Table 3 summarises the results of the *Post-hoc* Tukey HSD tests for assessing between-subject effects. Of note, are the non-significant differences in scores between EG1 and EG2 for RHA and RQU.

Reflection-in-learning Scale. Results indicated an interaction effect for RS [Wilks' Lambda = 0.78, $F(6, 242) = 5.36$, $p < 0.05$, $\eta_p^2 = 0.12$], suggesting that each treatment group followed divergent trends across the treatment period. Assumptions of sphericity were violated for RS ($p < 0.05$). Following the application of an epsilon correction within-subjects main effects were noted for RS [$F(3, 348) = 24.14$, p

<0.05, $\eta_p^2 = 0.16$], indicating that scores for each group fluctuated across the treatment period (see Table 2).

Results of the follow up paired samples t tests indicated that for RS differences in scores for each treatment phase were noted, except for scores between Phase 1 and Phase 2 ($p = 0.505$). Table 3 summarises the results of the *Post-hoc* Tukey HSD tests for assessing between-subject effects. Of note, are the non-significant differences in scores between EG1 and EG2 for RS.

Mindfulness Eating Questionnaire. Results indicated an interaction effect for MEQ [Wilks' Lambda = 0.83, $F(6, 242) = 3.83$, $p < 0.05$, $\eta_p^2 = 0.09$], suggesting each treatment group followed divergent trends across the treatment period. Assumptions of sphericity were not violated for MEQ ($p > 0.05$). With sphericity assumed, within-subjects main effects were noted for MEQ [$F(3, 369) = 29.43$, p <0.05, $\eta_p^2 = 0.19$], indicating that scores for each group fluctuated across the treatment period (see Table 2).

Results of the follow up paired samples t tests indicated that for MEQ differences in scores for each treatment phase were noted except for scores between Phase 2 and Phase 3 ($p = 0.190$). Table 3 summarises the results of the *Post-hoc* Tukey HSD tests for assessing between-subject effects. Of note, are the non-significant differences in scores between EG1 and EG2 for MEQ.

Table 2

Means and standard deviations for each group's reflection and mindfulness skills across the intervention period.

Group	Construct	T1 M (SD)	T2 M (SD)	T3 M (SD)	T4 M (SD)
CG	RQHA	7.95 (1.54)	9.56 (2.99)	9.86 (1.87)	10.30 (2.05)
	RQU	8.07 (1.56)	8.88 (2.95)	9.65 (1.73)	9.47 (2.20)
	RQR	9.42 (2.13)	8.47 (2.56)	9.44 (1.74)	9.95 (1.63)
	RQCR	9.42 (2.18)	9.23 (2.80)	9.91 (1.81)	9.81 (1.83)
	RS	51.84 (5.98)	49.98 (6.99)	55.28 (8.66)	52.88 (8.39)
	MEQ	2.35 (0.23)	2.40 (0.19)	2.43 (0.21)	2.45 (0.46)
	MAAS	52.09 (5.07)	52.47 (6.00)	51.12 (5.97)	51.49 (6.88)
EG1	RQHA	10.40 (2.04)	10.02 (2.65)	12.12 (2.73)	12.04 (3.63)
	RQU	9.17 (1.90)	10.10 (2.01)	12.02 (2.64)	13.05 (2.25)
	RQR	10.07 (2.06)	10.00 (2.26)	11.21 (2.43)	13.05 (1.77)
	RQCR	9.31 (1.85)	10.24 (2.94)	11.31 (2.28)	11.88 (1.67)
	RS	51.95 (6.79)	53.10 (6.24)	57.90 (7.72)	59.33 (7.81)
	MEQ	2.34 (0.25)	2.47 (0.24)	2.49 (0.22)	2.60 (0.29)
	MAAS	52.93 (5.87)	54.40 (7.23)	56.64 (5.65)	59.33 (6.42)
EG2	RQHA	9.22 (1.88)	9.54 (1.94)	11.54 (2.80)	14.76 (2.75)
	RQU	10.20 (2.17)	9.00 (1.57)	11.56 (2.65)	14.07 (2.71)
	RQR	9.85 (2.64)	11.10 (2.30)	11.85 (3.34)	14.93 (2.94)
	RQCR	8.39 (3.03)	10.02 (1.82)	10.22 (2.49)	10.17 (2.17)
	RS	53.44 (8.25)	55.90 (6.76)	55.46 (6.39)	65.93 (9.77)
	MEQ	2.32 (0.20)	2.44 (0.22)	2.49 (0.23)	2.74 (0.48)
	MAAS	49.80 (6.03)	52.12 (7.37)	57.41 (6.45)	66.27 (5.35)

Table 3

Changes between each group's reflection skills (e.g., RHA, RQU, RQR, RQCR, RS) and mindfulness skills (e.g., MEQ and MAAS scores across treatment period.

Construct	**Group (1)**	**Group (2)**	***p***
RHA	CG	EG1	0.00*
	CG	EG2	0.00*
	EG1	EG2	0.91
RQU	CG	EG1	0.00*
	CG	EG2	0.00*
	EG1	EG2	0.86
RQR	CG	EG1	0.00*
	CG	EG2	0.00*
	EG1	EG2	0.00
RQCR	CG	EG1	0.00*
	CG	EG2	0.89
	EG1	EG2	0.00*
RS	CG	EG1	0.00
	CG	EG2	0.00*
	EG1	EG2	0.05
MEQSUM	CG	EG1	0.03
	CG	EG2	0.00
	EG1	EG2	0.71
MAAS	CG	EG1	0.00*
	CG	EG2	0.00*
	EG1	EG2	0.72

Note. $\alpha = 0.01$; *indicates significant difference ($p < 0.01$).

Mindful Attention Awareness Scale. Results indicated an interaction effect for MAAS [Wilks' Lambda = 0.53, $F(6, 242) = 15.20$, $p < 0.05$, $\eta_p^2 = 0.27$], suggesting that each treatment group followed divergent trends across the treatment period. Assumptions of sphericity were not violated for MAAS ($p > 0.05$). With sphericity assumed, within-subjects main effects were noted for MAAS [$F(3, 369) = 36.35$, $p < 0.05$, $\eta_p^2 = 0.23$], indicating that scores for each group fluctuated across the treatment period (Table 2).

Result of the follow up paired samples t tests indicated that for MAAS differences in scores for each treatment phase were noted except for scores between Phase 1 and Phase 2 ($p = 0.068$). Table 3 summarises the results of the *Post-hoc* Tukey HSD tests for assessing between-subject effects. Of note, are the non-significant differences in scores between EG1 and EG2 for MAAS.

Discussion

This study aimed to generate empirical evidence for the benefits of reflective practice for health-seeking clients by assessing alterations to reflective skills and health outcomes following participant's involvement in one of three multi-modal interventions. In doing so, the study sought to overcome existing limitations within the literature regarding the tendency for researchers to use theoretical debate and anecdotal reasoning, rather than more robust experimental research designs to champion the purported benefits of reflective practice (e.g., Huntley et al., 2014; Huntley, Cropley, Knowles, & Miles, 2019; Mann et al., 2009; Picknell et al., 2014). In summary, the findings presented within this study allow for partial acceptance of the presented hypotheses. Specifically, Hypothesis 1 stated, "individuals participating in reflective practice intervention would achieve higher scores for reflection and mindfulness skills compared to individuals not receiving this training". Indeed, the

reflective practice group achieved significantly higher scores for all reflection skills compared to the control group, and significantly higher scores for critical reflection skills compared to the mindfulness group. In addition, the reflective practice group achieved significantly higher scores for MAAS compared to the control group, although no significant differences were noted compared to the mindfulness group. Hypothesis 2 stated, "individuals participating in a generic health and fitness programme would achieve improved health status results from baseline to post-intervention". Indeed, all anthropometry and physical fitness measures improved significantly across the study period. Hypothesis 3 stated, "individuals participating in a combination of a generic health and fitness programme and mindfulness training would achieve improved health status results compared to those just exposed to the generic health and fitness programme". Whilst the mindfulness group's scores for each anthropometry and physical fitness measure demonstrated greater improvements compared to the control group across the study period, these changes were not considered statistically significant. Hypothesis 4 stated, "individuals participating in a generic health and fitness programme, a mindfulness training programme, and reflective practice intervention would achieve improved health status results compared to individuals who only receive the mindfulness element and/or generic health and fitness programme". Indeed, the reflective practice group achieved significantly improved results for WC, WHtR and BF% compared to the control group. Furthermore, whilst the reflective practice group's scores for each anthropometry and physical fitness measure demonstrated greater improvements compared to the mindfulness group across the study period, these changes were not considered statistically significant. These findings suggest that developing health-seeking clients' abilities to reflect on their lifestyles and health improvement

endeavours has distinct benefits associated with improving their overall health status (e.g., WC, WHtR and BF%). Indeed, the general trend indicated that the intervention, which focused on improving participants' reflection skills, contributed towards more favourable health behaviours and outcomes compared to the other groups (e.g., BF% CG: *M* difference = 8.83, *SD* = 1.60; BF% EG1: *M* difference = 10.52, *SD* = 3.67; BF% EG2: *M* difference = 15.46, *SD* = 3.79).

Development of Reflection and Mindfulness Skills

The development of reflection skills as a means to influencing behaviour change has been considered integral in previous research that has evaluated the effectiveness of reflective practice interventions (e.g., Mann et al., 2009). In addition, the second study of this PhD programme reported on the developmental nature of health professionals' reflective skills, which were deemed necessary to bring about more effective communication skills when working with clients. Indeed, a similar trend was noted in the present study where the reflective practice treatment group achieved higher scores than both the mindfulness and control group on the reflection scale of both the RQ and the RLS. These findings support those noted elsewhere in both the nursing education and sports coaching literature whereby commitment to a systematic reflective practice intervention resulted in changes in reflection skills over time (e.g., Cropley, Adams, Mullins, & Rainer, under review; Lethbridge, Andrusyszyn, & Iwasiw, 2013). Lethbridge et al. (2013) further reported that changes in the ability to reflect at more advanced levels can only occur when fundamental skills have been practiced consistently as part of a learning process. This would explain why participants in the current study improved their reflection skills following each phase of the training programme and indicates that the intervention was

successful in providing the foundations necessary to promote reflection at higher levels.

Given the proposed potential relationships between reflective practice, mindfulness and self-regulation it is not surprising that scores on the mindfulness scales also increased for the reflective practice group across the treatment period. Indeed, when "being mindful" is considered as a concrete experience to be learned from (cf. Kolb, 1984), then developing the propensity to reflect on such experiences should allow for the ability to be mindful and self-regulatory in future circumstances. What is perhaps more surprising is that the mindfulness group, who were not introduced to any aspects of the reflective practice intervention, increased their reflection scores across the study period. This seems to imply that the acts of reflecting and/or being mindful share similar processes. To the author's knowledge, the bidirectional relationship between reflection and mindfulness skills, as noted in the present study, has not been explicitly examined within the wider literature. However, to further examine this possible relationship, Johns' (2017) typology of reflective practices, which places reflection on a continuum based on the layer/level of the practice, is worthy of consideration. By moving through the continuum, it is suggested that individuals progress from "doing reflection" towards reflection becoming "a way of being", with the end goal to achieve "mindful practice"; that is, being aware of the self within the unfolding moment with the intention of realising desirable practice. Whilst this typology appears to link reflective practice and mindfulness, it still points towards a unidirectional relationship. To the contrary, Mishna and Bogo (2007) contend that mindfulness should be able to contribute to reflection ability as, in essence, both skills require individuals to be fully engaged and interacting in the present. To achieve this, requires the maintenance of a deep level of

self-awareness, with mindfulness being suggested as a facilitator for such awareness. Further, in the domain of psychotherapy it has been suggested that for reflection to be learnt, certain internal requirements are needed, one of which is being mindful (Carroll, 2009).

Reflective Practice and Health Status

The relationship between reflective practice and the development of reflection skills appeared to influence the health improvements that participants were able to achieve. This conclusion is based on two general findings. First, the descriptive statistics for anthropometry and physical fitness indicated that the reflective practice group achieved the highest magnitude of change in scores from pre-to post-intervention, except for VO_{2peak}. Second, although average differences were higher for the reflective practice group, the non-significant differences noted for weight change and BMI provide potentially interesting insights into how participants from the reflective practice group went about bringing healthy changes to their lifestyles. Indeed, all groups significantly decreased their weight and BMI to a similar level. Superficially, this appears to be a less than desirable outcome given the hypotheses of the study, which predicted that the reflective practice group would achieve significantly better improvements to their overall health status. However, closer inspection of the WC, WHtR and BF% results, which highlighted greater improvements by the reflective practice group, indicates that changes to the general body composition profiles were different for each group. Not only do these findings suggest that the reflective practice group lost more fat relative to overall weight loss compared to the other groups, it also implies where the majority of fat was lost from. Indeed, changes to waist circumference informs that noticeable losses came from abdominal sites and were thus likely to be made up of both subcutaneous and visceral

fat (Janssen, Heymsfield, Allison, Kotler, & Ross, 2002). Further, the fact the other two groups had similar weight loss to the reflective practice group, whilst having changes of less magnitude for both BF% and WC is suggestive that weight loss was either in the form of a reduction in subcutaneous fat from other sites around the body or a reduction in muscle mass. Either way, given the negative health consequences related to fat stored in the central segment of the body (e.g., greater risk for diabetes, cardiovascular disease, hypertension, certain cancers), it may be concluded that the overall health status of the reflective practice group was improved to a greater extent than individuals who only received the mindfulness training and/or generic health and fitness programme.

The mechanisms for why these positive changes were noted for the reflective practice group were not explored within this study. It is likely, however, that a combination of psychological, behavioural and psychosomatic responses to the intervention contributed to the health outcomes achieved. For example, reflecting and learning from fitness experiences may have resulted in participants from the reflective practice group being more committed to a range of exercise modalities (Hanrahan, Pedro, & Cerin, 2009), which resulted in maintained muscle mass and reduced body fat compared to the other two groups. Additionally, being exposed to mindfulness training, and the opportunity to become better at being mindful as a result of reflective practice may have had a more pronounced effect on inhibiting stress-induced cortisol (Daubenmier et al., 2011). This contention is worthy of consideration given that reduced cortisol is widely accepted as contributing to diminished visceral fat around the abdominal region (Epel et al., 2000). Indeed, there is a growing body of evidence that supports the relationship between mindfulness and biological resiliency by way of cortisol inhibition (e.g., Hoge, Bui, Palitz, Schwarz, Owens, Johnston, Pollack &

Simon, 2017). Given that the reflective practice group had lower scores for BF% and WC than the other two groups, and that the mindfulness group had lower scores on these variables compared to the control group, further supports the idea that lifestyle changes made by the two intervention groups resulted in enhanced overall health.

Limitations and Future Directions

A key limitation of the present study was the lack of follow-up data collected beyond the initial intervention period, without which it is impossible to draw conclusions regarding the long-lasting effects of the training programmes (von Allmen et al., 2015). Indeed, the efficacy of any treatment depends on reliable follow-up information. In accordance with the maintenance phase of the Transtheoretical Model of Change, the initial study proposal included a six month post-intervention data collection period (cf. Mutti, 2013), however, due to changes in recruits' situations (e.g., being deployed at short notice to a wide variety of military bases across the country), the logistics of coordinating such a task became insurmountable. Even taking into account the timeframe of the present study's interventions, which highlighted sustainable changes over a prolonged period, future research should examine any maintained effects once support services have ceased.

Although the aim of the study was to generate empirical evidence for the benefits of reflective practice for health seeking clients, insights into the cause and effect relationship between reflection and health outcomes would have provided further insight towards understanding contributing mechanisms. As such, researchers interested in this area should utilise social validation assessments to supplement the statistical analyses of objective data and allow researchers the opportunity to subjectively assess potential links between interventions and socially important

outcomes (e.g., behaviour change; Dempsey & Matson, 2009), thus providing invaluable information for future programme development.

In light of recommendations by Picknell et al. (2014), the present study endeavoured to include both process (e.g., reflection skills) and outcome variables (e.g., BMI), as a means to substantiate conclusions regarding the efficacy of the interventions for developing fundamental skills that necessitate improved outcomes. However, whilst the findings suggest that a greater ability to be reflective and mindful facilitates improved health status, information regarding which specific behaviours were altered is missing. Future research should therefore include assessments of specific behaviours (e.g., sleep patterns, physical activity, diet), to provide insights for practitioners and clients with regards outlining effective goal setting strategies and programme development.

Summary and Conclusion

The findings from the present study provide a platform for the development of an empirical evidence-base that supports reflective practice for facilitating change to clients' behaviours and improvements in their health. In the context of the present study, the findings should be viewed as unique and appealing to researchers and practitioners interested in challenging antecedents related to obesity. Indeed, the ability for individuals to be mindful and to reflect on habitual behaviours appears to provide the necessary perspective needed to bring about positive behaviour change. Whilst these findings are promising, given the widespread issue of obesity, the challenge is not merely getting individuals doing reflective practice, but ensuring that practitioners are equipped to support the development of reflective skills through carefully constructed reflective practice interventions that allow individuals to learn about their circumstances and empowers them to be in control of their future exploits.

To achieve this, there needs to be a systematic inclusion of reflective practice training and competency requirements for the local healthcare workforce. The present findings contribute to an evidence-base that develops confidence in policy makers regarding the importance of reflective practice for tackling the issue of obesity and wider non-communicable health concerns.

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CHAPTER 8

GENERAL DISCUSSION & CONCLUSIONS

Introduction

The purpose of this chapter is to summarise and link together the findings from the three studies presented within the thesis, and to provide the implications of this programme of research. The chapter is organised into six sections, that include: (a) a summary of the key findings from each study in relation to the thesis aims and objectives; (b) a discussion of the conceptual issues that emanated from each study and overall thesis; (c) the practical implications derived from this programme of research; (d) the strengths and limitations of each study; (e) future research directions; and (f) a conclusion that links together the fundamental tenets of the thesis.

Summary

The central purpose of this thesis was to examine the role of reflective practice for enhancing the effectiveness of allied health practitioners' service delivery and development of a therapeutic alliance with support seeking clients. When this programme of research commenced, the available literature promoting the benefits of reflective practice was anecdotal in nature, with limited empirical evidence to support that it facilitates changes to service delivery. As such, the over-arching aim of this thesis was to provide rigorous scientific evidence that supports the notion that reflective practice is valuable to practitioners and clients alike, thus increasing confidence regarding its utility within health service provision (cf. Mann et al., 2009; Picknell et al., 2014). To achieve this overall goal, the programme of research sought to: (a) examine the journey towards aligning theoretical orientations and applied practice (Study 1); (b) develop an empirical evidence base within the sport, exercise and health domains that supports the effectiveness of reflective practice (Study 2 & 3); (c) examine the developmental nature of reflective skills (Study 2 & 3); (d) determine the relationship between reflective skills and practitioner effectiveness

measures (Study 2); and (e) investigate the impact of enhanced reflexivity on clients receiving support-services (Study 3). The following sections provide a recap of the three studies that comprised this thesis.

Study 1: Challenging the status quo: An autoethnographical account of an emerging professional practice philosophy

The relevant literature within the sport, health and medical domains provides numerous examples where reflective practice is considered to be linked to effective practice (e.g. Cropley, Adams, Mullen, & Rainer, under review; Cropley et al., 2020; Mamede, Schmidt, & Penaforte, 2008). Specifically, this evidence points towards the impact that reflective practice has for developing certain professional practice characteristics and approaches to learning from experiences. For example, Cropley et al. (2020) suggested that engaging in purposeful reflections helped sport psychologists to improve self-awareness and generate an understanding of knowledge-in-action, whilst Mamede et al. (2008) reported that reflecting on diagnoses reduced the likelihood of availability bias (i.e., overestimation of a diagnosis based on the ease with which it comes to mind) by medical students. Whilst this research has provided invaluable insights into the mechanisms that contribute to changes in professional practice, Study 1 aimed to better understand the fundamental philosophical alterations required to promote a desire to change in the first place. Utilising an autoethonographical research design to examine the career journey of the researcher, issues relating to professional philosophy were uncovered and reflected upon with respect to the context of effective practice. Key findings to emerge from this highly personal account related to the need for practitioners to be open and self-aware regarding the sources of knowledge and information that guide practice. This acceptance was concluded as the catalyst for allowing the researcher to review his

applied practice approaches and techniques, and adjust service delivery to ensure they are in keeping with his core values and beliefs, and the needs of clients. The knowledge and understanding gained from this study regarding principles related to the effective use and adoption of reflection proved foundational for developing reflective practice training programmes used during Study 2 and Study 3.

Study 2: An investigation into the effectiveness of a reflective practice intervention for facilitating positive changes to health professionals' practice behaviours

In light of calls for reflective practice research to: (a) empirically examine the benefits of reflective practice for health practitioners; and (b) better understand the effects on both processes and outcomes associated with systematic reflections (e.g., Huntley et al., 2014; Mann et al., 2009; Picknell et al., 2014), Study 2 utilised a more rigorous scientific research method to other research within the literature. Specifically, Study 2 utilised a quasi-experimental multiple-baseline crossover design, which allowed the response of a participant to an initial treatment to be contrasted with the same individual's response to subsequent treatments (Wellek & Blettner, 2012). In doing so, health practitioners' reflection skills (process) and communication skills (outcome) were repeatedly examined over the course of a 21-week reflective practice intervention, with positive changes considered a direct result of participants' involvement in the study. The initial findings provided empirical data that supports the notion that developing practitioner's abilities to reflect on their practice has distinct benefits associated with improving the effectiveness of their service delivery. However, individuals keen to develop their ability to engage in meaningful reflections for improvements, require: (a) an increased level of self-awareness; (b) increased autonomy for reflection; (c) an openness to change; and (d) a change in focus.

Further, whilst the relationship between reflective skills and practice behaviours is intuitively appealing, evidence for the coupling of process and outcome measures, which would add credence to the idea that reflective practice works in practice, is still limited. To that end, the general trend within Study 2 indicated that the intervention was successful for improving participants' reflective skills, which was a prerequisite that allowed for more favourable practice behaviours. Given the strong ecological validity of Study 2, it seems likely that the noted findings can be extrapolated across settings in similar environments. When considering the primary research context of this thesis, the development of a widespread reflective practice culture has the potential to not only benefit individual practitioners, but to enhance the overall effectiveness of a workforce focused on supporting the health and wellness of a nationwide programme (e.g., UAE Armed Forces National Service).

Study 3: Who is it good for?: Examining the relationship between reflective practice and mindfulness for promoting healthy lifestyles

The findings from Study 2 added further support for the contention that reflective practice is a valuable learning tool for allowing practitioners to gain knowledge and understanding from their experiences that can be used for guiding future applied endeavours (Knowles, Gilbourne, Cropley, & Dugdill, 2014). Whilst this is positive for cementing its value within the literature, concern has been noted about whether engagement with reflective practice will continue to be resisted if the perception is that the purported benefits are exclusive to the practitioner, whilst having little to no effect for end users (i.e., students, clients, athletes; Picknell et al., 2014). There are examples that have considered the usefulness of reflective practice with end users rather than practitioners (e.g., Faull & Cropley, 2009; Richards, Mascarenhas, & Collins, 2009), but this evidence remains confined to the sporting

domain and is sparse given the promising findings that previously emerged. In light of this concern, Study 3 aimed to investigate whether a reflective practice intervention, as implemented by practitioners who participated in Study 2, would be useful for facilitating healthy behaviour changes of health support seeking clients. 150 obese National Service recruits, enrolled on compulsory military conscription for the UAE Armed Forces, were recruited to participate in a study comparing the effectiveness of three weight management interventions. Group 1 were exposed to a generic programme that included behaviour change elements relating to diet, physical activity and health education. Group 2 and Group 3 were also exposed to the same standardised generic programme as Group 1, but were also involved with either a mindfulness (Group 2) or mindfulness and reflective practice (Group 3) intervention. The findings suggested that developing health-seeking clients' abilities to reflect on their lifestyles and health improvement endeavours had distinct benefits associated with improving their overall health status. Indeed, the general trend indicated that the intervention, which focused exclusively on improving participants' reflective skills contributed towards more favourable health behaviours and outcomes compared to the other two groups that did not comprise reflective practice elements. Specifically, Group 3 had significant improvements to WC, WHtR, and BF% compared to the other two groups. Given the unequivocal associations between these body composition markers, and obesity-related conditions and physical fitness, the effects of reflective practice are potentially profound. Within the context of Study 3, having healthier military recruits as a result of exposure to effective reflective practice interventions, has the potential to reduce the burden (e.g., resources, finances) of persistent medical treatment associated with obesity, and improve the overall performance of individuals during their conscription.

Conceptual Issues

This section provides an overview of the conceptual issues emanating from this thesis. Specifically, issues that related to the value of reflective practice for facilitating the alignment of professional philosophy and service delivery within Study 1, the mechanisms underpinning the role that enhanced reflection skills play in developing consultant characteristics associated with effectiveness within Study 2, and the impact of developing reflection skills for promoting behaviour change among health support seeking clients in Study 3. The intention for this section is to address certain issues related to the concept of reflective practice, which can be reviewed and critiqued in order to achieve conceptual clarity. In doing so, it is hoped that any confusion regarding reflective practice is eliminated or at least reduced, and therefore sceptics will be better informed and placed to make decisions regarding its use and integration into education and training programmes. It is also hoped that by addressing the conceptual issues as part of an extensive programme of research, as that presented within the present thesis, key decision and policy makers will be more likely to buy-in to the values and benefits of reflective practice. Only with this level of support, can individual practitioners' endeavours to engage with reflective practice be part of a more systematic approach within the profession for harnessing a reflective culture (Barnett & O'Mahoney, 2006). Indeed, according to Hart and Gregor (2005) successful reflection is dependent on culture at both the individual and organisational level, and contend that, "If reflective learning is to take place at an organisational level, the culture of the organisation needs to be sympathetic to reflection" (p. 102). Whilst the promotion of a culture of reflection across the disciplines of sport, exercise and health is ambitious, the first steps in this direction need to enhance the empirical

evidence-base that supports reflective practice (Thesis Objective B) and achieve conceptual clarity for avoiding confusion related to the topic.

Study 1 presented an insight into the development of an experienced applied practitioner through numerous stages of their career pathway. These career stages spanned a 15 year period from initial education, through professional training (e.g., British Association of Sport & Exercise Scientist Accreditation) to more recent times where the primary employment role of the individual was to oversee and manage a psychological services department. This study extended previous research within the professional practice literature that primarily considered students and/or neophyte practitioners' accounts of their engagement with reflective practice as part of their development (e.g., Collins, Evans-Jones, & O'Connor, 2013; Cropley, Miles, Hanton, & Anderson, 2007; Tod & Bond, 2010). In doing so, the value of reflective practice as an on-going lifelong learning method is offered as an essential requirement of continued professional development training programmes, and not something merely of benefit to early career practitioners. This is particularly true when considering Lane and Corrie's (2006) contention that, "We can never fully 'arrive' at mastery but spend our careers working towards it" (p. 190). With the initial wave of reflective practice literature, during the turn of the century, focussing heavily on neophyte practitioners, it should not be surprising that reflective practice was initially resisted by the sport, exercise and health community, as it was perhaps considered something for "them" rather than for "all".

The benefits of reflective practice for trainees and early career practitioners are well documented. Indeed, Cropley et al. (2007) reported that reflective practice was essential for improving the delivery of applied sport psychology service through the development of characteristics associated with effectiveness (i.e., *being*

personable, *provision of a good practical service, good communication, knowledgeable and experienced about sport and sport psychology, exhibited professional skills, and honest and trustworthy;* Anderson, Miles, Robinson, & Mahoney, 2004). More recently evidence has emerged that suggests reflective practice is not only linked to effective practice but that reflecting on experiences in different contexts may be necessary for developing effective coping strategies used by applied practitioners (Cropley, Baldock, Mellalieu, Neil, Wagstaff, & Wadey, 2016). Whilst these benefits provide useful information regarding how reflective practice facilitates greater self-awareness and offers practitioners a gateway to deeper insights as to how they operate, according to Poczwardowski, Sherman, and Ravizza's (2004) conceptualisation of professional philosophy, changes to practice are likely a result of alterations to dynamic and externalised components of service delivery (e.g., intervention techniques and methods). This is not surprising given that philosophical foundations of professional practice are rarely examined during therapeutic professions' education pathways. Indeed, Keegan (2010) noted that the teaching of consulting styles, along with differentiation between philosophical viewpoints, is a relatively under-emphasised area with trainee applied practitioners across numerous disciplines, including sport, psychiatry (Appleby, 2007) and counselling (Lochner & Melchert, 2007). The contention being that without adequate research in the professional practice literature highlighting the value of teaching consulting philosophies, educators and supervisors have resisted the need to engage with this topic area. The dilemma here, according to Keegan (2010), is that although such research would give confidence regarding the benefits of allowing trainees to explore different consulting styles, the type of research designs required are challenging. Indeed, Keegan (2010) noted:

> Pragmatically, this may be, in part, because it would be difficult (and possibly unethical) to conduct a randomised-control trial examining a single pedagogic decision during the training of applied practitioners. The number of practitioners in training at any time, the number who may ultimately reach accreditation/certification, the unique ways in which these neophyte practitioners learn and their unique client-groups, as well as the potential negative ethical implications of effectively "withholding" a key piece of supervisory knowledge, all combine to make a direct comparison unfeasible (p. 48).

The potential upside of overcoming the abovementioned challenges, however, means that researchers and applied practitioners should not be "put off". Specifically, should greater emphasis be placed on understanding, exploring and reflecting upon philosophical foundations that underpin consulting approaches and decisions, trainees and neophyte practitioners are more likely to develop a baseline to work from. As such, they are likely to be better equipped to critique the more stable, internal and enduring components of their practice endeavours (Poczwardowski et al., 2004). In doing so, personal core beliefs, values, and theoretical paradigms can be challenged and manipulated so that goals, techniques and interventions are in regular alignment. To achieve this, according to Lindsay, Breckon, Thomas, and Maynard (2007) is to achieve congruence, which is considered fundamental for the attainment of effective service delivery. The examples within the literature where the shifting of practitioner philosophies and associated approaches to service delivery has been discussed (e.g., Cropley et al., 2007; Tod & Bond, 2010) emphasise the role of reflective practice for facilitating this process. However, notwithstanding models of professional development that highlight the extended period required to achieve expertise (e.g.,

Ericsson, Krampe, & Tesch-Roemer, 1993), limitations of the existing literature base relate to the relatively short period of time that researchers have examined transitions. Indeed, to the author's knowledge Tod and Bond's (2010) study covered the longest time period with an early career practitioner, standing at two years. This limitation is considered pertinent based on three aspects: (a) the purported stability and enduring nature of professional philosophies (Poczwardowski et al., 2004); (b) the contention that most students and neophyte practitioners' theoretical orientations are based upon the methods learnt during their education (Tonn & Harmison, 2004); and (c) the sophisticated levels of thought required to achieve congruency between professional philosophy and approaches to service delivery (Lindsay et al., 2007). Taking the above into account, to truly value the role of reflective practice for facilitating positive and sustained changes to professional practice requires investigations that track said changes over an extended period of time across numerous stages of a practitioner's career and present specific examples of how reflective practice contributed to this development. The links between reflective and effective practice have received increased positive support over the past decade (e.g., Cropley et al., 2020; Koh, Mallett, Camiré, & Wang, 2015; Whitehead, Cropley, Huntley, Miles, Quayle, & Knowles, 2016). Within the majority of research studies investigating this link, the presumption is that increased ability to reflect, as a result of a reflective practice intervention, is required to change practitioners' characteristics of effectiveness. This notion is intuitively appealing. However, when critiquing the available literature within sport, exercise and health disciplines two issues are apparent. First, conclusions regarding the development of reflection skills are exclusively based on content analysis of reflective journals and/or interviews with participants, with little to no utilisation of valid and reliable objective measurement instruments (e.g., RLS).

Second, when reflection skills have been reported as being enhanced following an intervention, improvements to objectively measured elements of effective practice have been negligible (cf. Cropley et al., 2020). To the author's knowledge the linking of process (e.g., reflection skills) and outcome (e.g., communication skills) measures in order to generate compelling evidence of the purported relationship is lacking (cf. Picknell et al., 2014). Without this evidence, and without rigorous means for monitoring dependant variables, the evaluation of reflective practice programmes and its value for applied practitioners is compromised. In disciplines where often compulsive attention is paid to understanding processes for the achievement of marginal gains, it is little wonder that in the absence of evaluation-based research, reluctance to embrace reflective practice has persisted.

Study 2 is therefore novel within the reflective practice literature as it is the first attempt to quantitatively examine process and outcome measures to address the relationship between reflection skills and effective practice. Additionally, the study did not just assess the ability to reflect but also examined the ability of participants for utilising knowledge and understanding gained from reflections as learning opportunities. Whilst the findings further support a positive relationship between level of reflection skills and practice outcomes, questions regarding the required levels of reflection required to bring about change are warranted. Typically, hierarchical frameworks for delineating between levels of reflection ability have been espoused within the professional practice literature (Mezirow, 1981; Powell, 1989). For example, Mezirow (1981) distinguished between reflection (awareness of judgements, observations and descriptions, evaluation of planning, and assessment of decisions) and critical reflection (includes an assessment of the need for further learning and awareness that routines are not adequate). Furthermore, Cropley et al. (2020)

emphasised that such frameworks conceptualise reflection as developmental whereby different levels of reflection exist increasing in their complexity. By moving up the hierarchy, reflection is considered to become more complex and beneficial.

Conceptually, these frameworks and contentions make sense and provide purpose to reflective practice training programmes. On the one hand, the mechanisms for explaining why enhanced reflection skills should facilitate effective practice is well documented. Indeed, Cropley et al. (2020) found that increased reflection skills allowed applied practitioners to generate practical and professional knowledge, improve self-awareness, make sense of approaches to service delivery, and understand the impact of judgements and decisions on practice. Furthermore, it has also been previously advocated that improved reflection can lead to a shift in focus from merely appraising situations to giving greater emphasis on the self and the client (e.g., Cropley et al., 2020; Knowles, Gilbourne, Borrie, & Nevill, 2001). On the other hand, less is known about what magnitude of change, if any, is required before reflection ability initiates changes to applied practice and whether this ability is different for each individual. This point is worthy of consideration when reviewing the available research investigating the link between reflection skills and subsequent alterations to outcomes (e.g., Cropley et al., under review; Koh et al., 2015; Neil, Cropley, Wilson, & Faull, 2013). In all cases, the authors noted that participants were unable to achieve critical levels of reflection, as conceptualised within the literature (Goodman, 1984; Mezirow, 1981), yet positive outcomes were achieved. If this is correct, it appears that the most advanced levels of reflection skills are not required to reap the benefits of engaging in reflective practice. The issue here for education and training providers, and profession regulating organisations is not whether reflection skills are important,

but rather, “what is acceptable?” in terms of discerning the levels of reflection that will bring about meaningful changes.

At present, the specific information for addressing the above issue is lacking. However, combining knowledge and understanding from different disciplines as well as amalgamating independent research approaches may provide the best opportunity for achieving greater conceptual clarity regarding the development of reflection skills. For example, Cropley et al. (2020) utilised, arguably, the most comprehensive framework for distinguishing between levels of reflective ability. Indeed, they adapted previous models by Knowles et al. (2001), Goodman (1984), Powell (1989) and Mezirow (1981) to create six levels of reflections, ranging from *Reflectivity* (Level 1), considered to be the most descriptive form of reflection, to *Critical Reflection* (Level 6), considered to be the most advanced form of reflection. However, previously this model has only been utilised as part of qualitative research attempts for examining the benefits of reflective practice (Knowles et al., 2001). Whereas, quantitative assessment tools for differentiating reflection skills have typically delineated between non-reflective and reflective actions, with the latter being sub-divided into two categories: (a) reflection, and (b) critical reflection (cf. Kember et al., 2000; Lethbridge, Andrusyszyn, Iwasiw, Laschinger, & Rajulton, 2013). As a result of only differentiating between two levels of reflection, related instruments (e.g., RQ) may well be suitable for cross-sectional research that considers an individuals or groups propensity to use one or the other type of reflections in a given moment. However, they are unlikely to be suitable as they lack the sensitivity to trace minor changes for discerning transitions from lower to higher level reflective levels over time. Therefore, in order to enhance further the profession’s confidence regarding the benefits of reflective practice, there may be scope to develop a more rigorous

quantitative instrument that incorporates the model presented by Cropley et al. (2020). In doing so it is likely that the type of research that can be conducted will further enhance the empirical evidence-base regarding the link between reflection skills and outcome behaviours, and address conceptual issues that still exist regarding this relationship.

A common theme that emerged from the literature, that also provided the key rationale for the present thesis, was the lack of empirical evidence supporting the value of reflective practice (e.g., Picknell et al., 2014). Indeed, much of the available evidence at the commencement of this programme of research was anecdotal in nature using predominantly qualitative research methodologies (cf. Huntley et al., 2014; Mann et al., 2009). However, even when more rigorous studies have been conducted, these investigations have focused on cause and effect relationships without consideration as to the potential mechanisms that elucidate such relationships (e.g., Cropley et al., 2020; Mamede et al., 2008). This contention is true for research endeavours that have considered the effects of reflective practice for both practitioners and end-user clients. Evidence supporting the utilisation of reflective practice with applied practitioners suggests that through ongoing reflective practice effective strategies can be facilitated for service delivery (Schinke, Michel, Gauthier, Pickard, Danielson, Peltier, Pheasant, Enosse, & Peltier, 2006) and that practitioners should engage in reflective practice in order to explore their decisions and experiences and manage themselves and their applied work (e.g., Jones, Evans, & Mullen, 2007; Woodcock, Richards, & Mugford, 2008). In doing so, reflective practice is suggested as pivotal in allowing practitioners to make sense of and learn relevant knowledge-in-action that contributes to developing personal theories regarding effective methods of practicing in a specific context (e.g., Anderson, Knowles, & Gilbourne, 2004; Cropley

et al., 2020). Indeed, participants from Cropley et al.'s study reported that understanding their knowledge-in-action enabled them to make appropriate changes to practice in attempts to enhance the effectiveness of the support they were providing. Furthermore, including reflective practice as part of support-services suggests that it has potential for enhancing self-efficacy and managing competitive anxiety (Hanton, Cropley, & Lee, 2009), maintaining effort (Hanrahan, Pedro, & Cerin, 2009), and empowering self-regulated learning (Jonker, Elferink-Gemser, de Roos, & Visscher, 2012). The general consensus being that reflective practice helps to augment focus and attention to specific internal processes that occur during "an experience" that allows individuals to learn from and assimilate new knowledge for use during impending situations.

One theory for explaining why reflective practice works is that the deliberate act of reflecting on an experience or situation allows individuals to challenge habitual thought processes, decisions and actions (Mamede et al., 2008; Mamede, van Gog, van den Berge, Rikers, van Saase, van Guldener, & Schmidt, 2010). Indeed, Mamede et al. (2010) suggested that engaging with reflective practice can counteract negative consequences of automatic reasoning, which is typically recognised as a developmental artefact associated with expertise (Ericsson et al., 1993). Thought processes associated with habitual actions or automatic reasoning have elsewhere been labelled as mindlessness (Bahl, Milne, Ross, & Chan, 2013). Mindlessness is not inherently negative unless it constrains individuals' ability to act in a manner that is both efficient and *fit for purpose*. With respect to applied service delivery mindlessness might be considered debilitative if it restricts a practitioner exploring an alternative, and potentially more effective, course of action with clients. Whereas, for support seeking clients, mindlessness would be considered negative if it resulted in an

action that leads to an undesirable outcome.

To examine the notion that reflective practice is effective because it allows its users to challenge habitual thoughts, decisions and behaviours, the third study of the present thesis investigated the effects of mindfulness (consider at the opposing end of a continuum to mindlessness; Langer, 1992) and reflective practice interventions on health related outcomes. Whilst both interventions proved effective for altering participants' health status and behaviours, the relationship between reflective practice and mindfulness was of interest. Given the tendency for reflective practice to challenge automatic reasoning it is not surprising that scores for mindfulness increased for the reflective practice group across the treatment period. Indeed, when "being mindful" is considered as a concrete experience to be learned from, as contextualised by Kolb (1984), then developing the propensity to reflect on such experiences should allow for the ability to be mindful and self-regulatory in future circumstances.

Practical Implications

A number of practical implications have emerged from this programme of research that may be of use to both applied practitioners and profession regulating organisations (e.g., British Association of Sport & Exercise Sciences; British Psychological Society). These implications relate to the development of reflective skills, the refinement of practice approaches, and the potential for reflective practice for facilitating other health related cognitive and behavioural skills.

Development of reflective skills: Considerations for education providers and professional development training programmes.

A generalised view within the literature is that reflective practice is a highly skilled activity and should therefore be nurtured within practitioners (Huntley,

Cropley, Knowles, & Miles, 2019; Kuiper & Pesut, 2004). Indeed, models of reflection have previously been proposed (e.g., Goodman, 1984; Mezirow, 1981; Powell, 1989) that view reflection as hierarchical and developmental in that different levels of reflection exist, with higher levels being considered increasingly complex. As such, it is thought that the level of reflection demonstrated by a practitioner provides a representation of their reflection skills (cf. Knowles, Gilbourne, Borrie, & Nevill, 2001). However, until recently, this contention lacked empirical support, largely in part to the belief that quantification of reflective practice and associated skills is difficult (Mann et al., 2009). With the development of relevant measurement tools that allow reflection skills to be assessed, research has emerged providing evidence for the effects that tailored reflective practice interventions have for facilitating reflective ability (Lethbridge, Andrusyszyn, Iwasiw, Laschinger, & Fernando, 2011; Sobral, 2000). Indeed, results from Study 2 and Study 3 of the present thesis explicitly examined the links between reflective practice programmes and their impact on reflection skills. In both studies, it was concluded that in order to bring about changes to practitioners' and support seeking clients' outcomes, reflection skills had to be harnessed as a prerequisite.

This evidence should compel education and professional development providers, and profession regulating authorities to commit to ensuring that reflective practice is not only considered an essential competency associated with effective practice, and therefore a necessity for licensing and accreditation purposes, but also that adequate training opportunities and supervision are provided by experienced reflective practitioners. Out of the profession regulating authorities across the sport, exercise and health domains, British Association of Sport and Exercise Sciences (BASES) has been a leading example in the way that it has advocated and integrated

reflective practice into its practitioner development programme. Indeed, as part of the supervised experience route to accreditation, *the ability to reflect, take responsibility for own actions, and to demonstrate that continuous professional development occurs* is explicitly outlined as a means towards demonstrating competence in "Self-evaluation and Professional Development" (BASES, 2010). Further, to support the development of this competence BASES has added a *Reflective Practice* workshop as a core requirement of the supervised experience process for all candidates, and provides "would-be" supervisors with additional training for mentoring and supporting their supervisees. This approach by BASES appears to have been a result of a growing evidence base within the sports coaching and sports psychology domains, in addition to a mounting pressure from within the professional practice literature warning regulatory authorities to not merely pay lip-service to reflective practice, but instead, embrace it wholeheartedly (Cropley et al., 2007; Cropley et al., 2020; Cropley, Miles, Knowles, 2018; Whitehead et al., 2016). Other organisations would do well to follow in BASES footsteps, especially when considering Mann et al.'s (2009) contention that "the most influential elements in enabling the development of reflection and reflective practice is a supportive environment, both intellectually and emotionally" (p. 608). In light of the fact that these authorities typically set the tone for developments within a given profession, supporting the benefits of reflective practice, and providing the resources and opportunities for professionals to examine and understand their practices through reflections, should be a minimum requirement.

Refinement of practice approaches: Aligning philosophical foundations and service delivery.

Study 1 provided insights into the author's reflections on his development as an applied practitioner over a relatively long period of time, which allowed him to examine why thoughts, decisions and actions were initiated. Specifically, it were the difficult or uneasy moments within applied service delivery, where support outcomes were perceived as less than desirable, that incongruence between the author's personal beliefs and values, and adopted approaches were recognised. Indeed, the reflective process, in addition to the support received from mentors and supervisors, resulted in the author exploring other frameworks to professional practice. Without this personal journey of discovery, it is unclear whether the author would have allowed himself to move away from the more dominant framework within the applied sport psychology domain; namely, Cognitive-Behavioural Therapy that governed his initial service delivery. Similar contentions are a regular feature of the professional practice literature (e.g., Faull & Cropley, 2009; Tod & Bond, 2010), and therefore, the notion that education and professional development providers, as well as profession regulating authorities should be at least introducing trainees and neophyte practitioners to other practice frameworks is warranted.

It is difficult to understand why more effort is not afforded to arming trainee applied practitioners with an appreciation of differing practice philosophies and theoretical perspectives, which through critical analysis could be adopted and adapted to allow for provision of bespoke services to unique issues. Tod and Bond (2010) suggest that the apparent reluctance is due to the relatively early stage that research into the effects of training and supervision is at. Furthermore, Keegan (2010) highlighted there are certain factions within applied practice that believe it is

necessary to experience conflicts and struggles regarding consulting styles in order to be a more effective practitioner. However, through a series of articles and chapters, both Keegan (2010; 2014; 2016) and Poczwardowski and colleagues (2004; 2014) acknowledge that teaching philosophical frameworks to students and neophyte practitioners is challenging, in that related topics areas are typically dense and laden with complex terminology. To that end, Keegan (2016) developed an unashamedly simplistic framework for teaching philosophical and theoretical perspectives, which he felt provided the necessary information for allowing early career practitioners to raise awareness regarding the multitude of applied practice options. In doing so, he suggested that:

> Learning about philosophical and theoretical frameworks is difficult, and may still involve making mistakes. However, if we are able to reflect on practice in an educated and informed way, then we can at least learn from them, and continue to improve our practice (p. 66).

The reference to reflective practice within the above quotation, and its links to supporting learning about philosophical and theoretical frameworks is interesting. Indeed, a central tenet of reflective practice is that it provides applied practitioners the opportunity to be more self-aware for the purpose of learning from experiences and assimilating new knowledge and understanding into existing cognitive structures to be accessed during forthcoming events (cf. Knowles et al., 2014). However, with regards to applied practice approaches, this new knowledge and understanding can only be accessed when practitioners have an appreciation that different forms of service delivery frameworks exist.

The utility of reflective practice as an means to facilitating practitioners' application of philosophical and theoretical frameworks is intriguing on two counts:

(a) the explicit evidence within the present thesis outlining the necessity of reflective practice for harnessing a congruent approach to professional practice; and (b) anecdotal accounts within the wider literature supporting the notion that reflective practice develops self-awareness, which has paved the way for exploring alternative approaches to applied practice. In many ways, the debate regarding the need to teach trainee applied practitioners about philosophical and theoretical frameworks has followed a similar path as the debate surrounding the benefits of reflective practice for enhancing effective practice. Indeed, the anecdotal evidence relating to these debates suggests that learning about both areas is necessary and is representative of practitioner effectiveness. Additionally, both areas have historically relied heavily on qualitative inquiry, which until more recently has been at odds with traditional research methodologies within sport, exercise and health domains. On the one hand, given the distinct research agenda to better understand reflective practice (cf. Picknell et al., 2014), its principles have been integrated into education, training and continued professional development programmes. Whereas, presently on the other hand, the same cannot be said for philosophical and theoretical frameworks (Keegan, 2016). It is widely accepted that reflective practice facilitates learning from experiences. However, without a basic appreciation of how those experiences are moulded and shaped by our individual philosophical perspectives of the world is limiting with regards to developing practitioner effectiveness. To that end, it appears timely that a research agenda focussing on a better understanding of the teaching and application of philosophical and theoretical frameworks is afforded similar attention to that previously given to the area of reflective practice.

Reflective practice and its influence on health related cognitive and behavioural skills.

The majority of reflective practice research typically focuses on how reflective practice allows individuals to make sense of experiences that generate knowledge which can be drawn upon during future situations. Implicit within this process is that in order to alter how we think and act in light of newly acquired knowledge and understanding requires potential changes to our cognitive structures and behavioural tendencies. More recently, research has emerged that more explicitly examines the effects that reflective practice has on components that influence how we think and behave (e.g., Cropley et al. 2009; Hanrahan et al. 2009). Indeed, Cropley et al., (2009) examined elite athletes' use of reflective practice following sporting experiences to understand processes that foster facilitative interpretations of anxiety-related symptoms. Furthermore, Hanrahan et al., (2009) investigated how self-reflections influence achievement goal orientations, levels of intrinsic motivation, and perceived dance performance. In both studies, the authors concluded that deliberately engaging in experiential learning through reflective processes resulted in desirable perceptions and attitudes towards ensuing incidents. It would appear, therefore, that utilising reflective practices allows for developmental changes to occur based on the knowledge acquired as a result of the process. By acquiring new knowledge and using it to challenge pre-existing or automatic thought processes leads to a cascading effect that allows for rationalisation and alternative interpretations to occur.

With regards to the present thesis, the above contention is recognised between the explicated links for reflective practice and mindfulness (Study 3). The evidence promoting the effects of mindfulness for improving health outcomes is well documented within the literature (Daubenmier, Kristeller, Hecht et al., 2011;

Mantzios & Wilson, 2015; Olson & Emery, 2015). However, less is known about how to improve mindfulness beyond repeated exposure to certain principles through regular practice. On the other hand, outside the mindfulness context, reflective practice is considered a worthwhile endeavour for augmenting learning potential, in that it requires individuals to critique aspects of their experiences, which they may not have considered relevant without going through the process. Based on this sentiment it is reasonable to assume that engaging in reflective practice following a mindfulness episode has the potential to expedite learning from the experience, subsequently resulting in an improved ability at being mindful. Indeed, the same could be said for other cognitive skills and thought processes as indicated by Cropley et al. (2009) and Hanrahan et al. (2009). The specific interest with mindfulness within the present thesis was as a result of its links to health-related outcomes, which were closely linked to the strategic outcomes imposed by the author's project for which he is employed, which provided the backdrop for the research context. Study 3 explicitly examined the relationship between reflective practice and mindfulness to determine potential benefits for applied health interventions. Yet, taken together with key findings from other research studies that have investigated links between reflective practice and other cognitive processes, an evidence base is emerging that potentially offers profound practical implications for applied practitioners across domains. Skills and thought processes (e.g., Think Aloud) that are known to be beneficial for promoting facilitative decisions and behaviours appear to be enhanced and utilised more efficiently when developed through the lens of reflective practice (e.g., Walsh & Driver, 2019; Whitehead et al., 2016). Indeed, it is this type of evidence pertaining to the benefits of reflective practice for support-seeking clients that has been lacking within the sport, exercise and health domains, which has resulted in reluctance from

some factions to fully embrace it as a worthwhile endeavour within applied service delivery. This is not to insist that all cognitive skills need to be added to professional education and training programmes or client-support programmes. Far from it. Instead, it is the author's belief that promoting and supporting the use of reflective practice with practitioners and end user clients alike offers an evidenced-based framework to developing these types of skills (e.g., mindfulness, self-awareness, self-regulation) through critical evaluation that can be utilised when needed to bring about positive changes to circumstances. In light of the findings from Study 3, that link together reflective practice and mindfulness, as well as the emerging evidence explicating the relationships between reflective practice and mindfulness (e.g., Mamede, Schmidt, & Rikers, 2007), and their impact on self-regulation and health related outcomes (e.g., Evans, Shanahan, Leith, Litvak, & Wilson, 2019; Rogers, Ferrari, Mosely, Lang & Brennan, 2016), Figure 1 presents a framework that links all of these elements together for the first time.

The central theme of the model highlights the effect that mindfulness has on psychological processes (e.g., self-awareness and self-regulation) that directly impact behavioural outcomes (e.g., physical activity). The presentation of these relationships is adapted from Tang and Leve's (2015) *Integrated Translational Framework,* which illustrated the neurobiological and behavioural mechanisms associated with mindfulness training. Whilst Tang and Leve's representation is useful for understanding the processes involved between engaging in mindfulness and how that leads to health behaviours, without a learning component, little can be gleaned about how improvements between the components are improved. Therefore, Figure 1 includes reflective practice as a mechanism for augmenting learning regarding the process of achieving improved health through mindfulness practices. The inclusion of

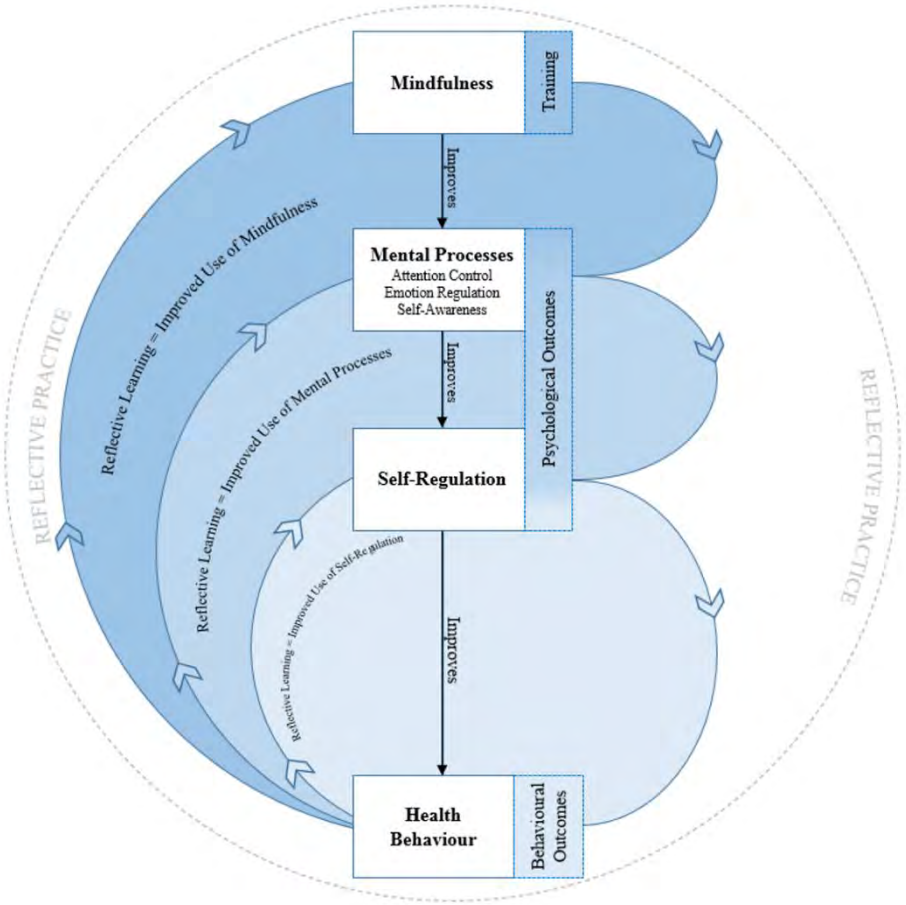

Figure 1: Integrated Model of the Relationship between Reflective Practice, Mindfulness, Self-Regulation and Health Behaviours.

reflective practice into this framework is based on two considerations. First, the existing evidence that supports the positive independent relationships between reflective practice and mindfulness (e.g., Mamede, Schmidt, & Rikers, 2007), mental processes (e.g., self-awareness; Cropley et al., 2020), and self-awareness (e.g., Jonker et al., 2012). Second, the consideration that being mindful, self-regulatory and behaving, as outlined by Tang and Leve's (2015) framework, can be conceptualised as a concrete experience in accordance with Kolb's (1984) Experiential Learning Cycle. From this perspective, the process of engaging in reflective practice enables the concrete experience to be brought into a state of abstract conceptualisation. When framed, the abstract concepts guide active experimentation and subsequently lead to

more concrete experiences. When learning takes place as a result of reflective practice, a new form of experience (i.e., more effective use of mindfulness, self-awareness and self-regulation) on which to reflect and conceptualise should be created.

From a theoretical and applied perspective, the model presented in Figure 1 provides researchers and practitioners with a framework that includes key components considered integral for promoting positive behavioural outcomes and how they link together. As such, it is intended to open up avenues for future research that examine approaches to improving the efficacy of relationships between each component. For applied practitioners the model should help guide a phased approach to interventions. For example, instead of applying mindfulness training with health behaviours as an outcome, practitioners are encouraged to monitor the effects that the programme has on developing mental processes (e.g., attention control, emotion regulation, self-awareness), and how these lead to improved self-regulation before positive health behaviours occur.

Summary of Conceptual and Practical Issues: Key Contributions to Current Understanding

This programme of research emanated from the need to develop applied practitioners' confidence regarding the benefits of reflective practice. Indeed, professionals from various disciplines, including sport, exercise and health sciences, have resisted engaging with reflective practice due to a paucity of empirical evidence that supports its value as a useful professional development activity. Accordingly, through in-depth examination, this thesis has attempted to answer four key questions regarding the usefulness of reflective practice, which in doing so, is believed to

contribute to the conceptual understanding of this topic area. First, “Is reflective practice linked to an evolving professional practice philosophy?”. Study 1 examined an applied practitioner’s experiences over a 15 year period, and presented insights into how reflective practice shaped his approaches to service delivery by means of aligning personal core beliefs and values with intervention modalities. Second, “Is reflective practice only useful for neophyte applied practitioners?”. Given the extended study period of Study 1, the author provides examples that highlight his commitment to reflective practice, which continues to be of benefit to his knowledge and understanding of service delivery contexts. Third, “Does reflective practice directly affect measurable service delivery outcomes?”. Study 2 provides empirical evidence that reports on the links between reflective practice and measurable characteristics associated with effective practice. Finally, “Is reflective practice of benefit to support seeking clients?”. Study 3 built upon the results of Study 2 but further supported the benefits of reflective practice in that applied practitioners from Study 2 incorporated reflective practice principles as part of a multi-modal intervention that sought to improve the health status of clients. Collectively, the findings from each of the individual studies, not only support the benefits of reflective practice across contexts, but also tentatively advocate the usefulness of developing a culture of reflection within an organisation. With a combination of quantitative and qualitative data, collected across diverse participation contexts (i.e., experience practitioner, neophyte practitioners, service users), the present thesis should go some way towards encouraging professionals from a range of relevant disciplines to embrace reflective practice as part of their continued professional development endeavours. In summarising the practical implications emanating from this programme of research the below bullet points are offered:

- Reflective practice should be introduced as early as possible to prospective practitioners in order to allow them to nurture the requisite skills needed for critical reflection. Presently, in some cases, reflective practice is not formally taught on Higher Education programmes until Level 7 (Huntley et al., 2019)
- Reflective practice training programmes (e.g., education courses, continued professional development) offered by academic institutes and profession regulating authorities (e.g., Abu Dhabi Health Authority, BASES, HCPC) should specifically aim to:
    - Develop reflection skills
    - Make explicit the link between reflective practice and effective practice (i.e., professional congruence)
    - Explore the relationships between reflective practice, reflection skills and cognitive and behavioural outcomes
- Organisations providing applied practice services need to establish a culture of reflection that encourages reflective practice as an essential component of practitioners' philosophies
- By considering reflective practice within a model or framework (e.g., Figure 1) that considers its impact on cognitive and behavioural outcomes, a more procedural and guided approach to using reflective practice is provided, thus transitioning reflective practice from an abstract concept to useful, purposeful mechanism.
- Reflective practice should not be viewed or used as 'one size fits all'. Education level, professional experience, learning preferences and cultural differences are merely a few factors that need to be considered when developing reflective practice programmes.

Strengths and Limitations

The originality of the programme of research presented in this thesis, in both theoretical and methodological terms, has highlighted numerous strengths and limitations worthy of attention. Given that a key aim was to generate much needed empirical evidence to support the benefits of reflective practice within sport, exercise and health domains, the quantitative approaches used for objectively assessing processes (e.g., reflection and/or mindfulness skills) and outcomes (e.g., communication skills of practitioners; anthropometry of clients) should be commended. By using these approaches, especially for discerning levels of reflections between participants, researcher bias relating specifically to analysis and interpretation of data was minimised (Smith & Noble, 2014). Indeed, this type of bias is particularly prevalent when subjective approaches, as is often the case with qualitative research designs, are used to analyse data. In these circumstances, researchers interpretation of meaning contained within qualitative transcripts are likely to be influenced by previous experiences, ideas, prejudices and personal philosophies (Breakwell, Fife-Shaw, Hammond, & Smith, 2006). Notwithstanding methods for minimising researcher bias when analysing qualitative data (e.g., adhering to trustworthiness criteria), conclusions regarding the development of reflection skills presented herein this thesis, highlighted participants' self-perception of their ability to reflect, rather than being determined by a researcher's interpretation of third party data. Given the highly personal and idiosyncratic nature of reflecting, and the lack of subjectivity in analysing reflection skills and their relationship with improved outcomes, readers should be confident regarding the purported links highlighted in Study 2 and Study 3.

A particular strength of this programme of research was its ecological validity, in that methods, resources and settings of the studies approximated those present in the real-world (Nestor & Schutt, 2012). Indeed, every effort was made to ensure that delivery of reflective practice interventions and collection of data occurred in the everyday environments of the participants. The personal nature of doing reflective practice, allied with the unique multitude of factors that influence interactions between applied practitioners and service users means that controlling all extraneous variables is difficult. Of course, some might argue that without this control, internal validity; that is, whether observed effects are a result of manipulation of an independent variable and not some other factor, is compromised (Thomas, Silverman, & Nelson, 2015). However, taking into account where the reflective practice literature is presently at, with respect to the limited existing empirical evidence, a conscious decision was made by the researcher to generate research that could be generalised with other participants and settings (i.e., external validity; Thomas et al., 2015). It is hoped that this stance will create a buy-in for those resisting reflective practice (cf. Picknell et al., 2014), as they will be able to relate to the findings noted herein. As such, subsequent research endeavours would do well to focus more ardently on causal effects related to reflective practice. This approach should not be perceived as reducing the scientific integrity of the research carried out, as it reflects the need to appreciate the complex and dynamic nature of human interactions. Indeed, calls from within the physical education, sport and exercise, and allied health domains have been calling for more research to be carried out in field-based settings for some time (e.g., Costill, 1985; Martens, 1987; Thomas, French, & Humphries, 1986) to better understand the effects of applied interventions in real-world environments.

The primary limitation of the programme of research presented within this thesis, pertains to conclusions regarding the benefits of reflective practice for bringing about change. Specifically, studies 2 and 3 highlighted findings that supported this contention unequivocally across differing participant characteristics. However, when accounting for changes to behaviours as a result on an applied intervention, guidelines suggest utilising follow-up assessments for determining maintenance and/or sustainability of achieved outcomes (cf. National Institute for Health and Clinical Excellence, 2014). In keeping with Prochaska and DiClemente's (1982) Transtheoretical Model of Behaviour Change, effective maintenance is considered if actions that led to changes are sustained for a period not less than six months. It was always intended for both studies to include a follow-up element, however, the dynamic and ever-changing environment (see Chapter 4) where the research was conducted meant opportunities to do so became an insurmountable task. Fortunately, when reviewing advice within the literature regarding components that contribute to post-intervention behaviour change maintenance, the scientific rigor of the research designs and evidence-based approaches to developing interventions appears to have contributed to potentially sustainable changes. Indeed, a systematic review examining the maintenance of behaviour change noted that changes were more likely to be maintained when: (a) interventions were more than 21 weeks in duration; (b) a multimodal approach to supporting behaviour change was adopted; (c) interventions included face-to-face contact with regular support opportunities; (d) pre-trial screening was used to exclude potential participants with characteristics that differed from the target audience; and (e) follow-up prompts (Fjeldsoe, Neuhaus, Winkler, & Eakin, 2011). Given that both studies achieved at least four out of the five criteria presented above should give confidence to readers regarding the efficacy of the

outcomes achieved as a result of the reflective practice interventions. However, it would be remiss to suggest that future studies need not include a follow-up assessment, as doing so will only add credibility to the value of reflective practice to bringing about meaningful changes (Ory, Lee Smith, Mier, & Wernicke, 2010).

A second limitation of the work presented throughout the thesis is the somewhat dated nature of the literature used to provide rationales for each study. Whilst the topic of reflective practice continues to demand much research interest (cf. Reflective Practice: International & Multidisciplinary Perspectives) the primary issues highlighted within the Literature Review chapter (Picknell et al., 2014), that provided the foundation for the programme of research herein, continue to persist. That is: (i) there continues to be a limited quantitative evidence base within the reflective practice literature, (ii) evidence linking measurable processes (e.g., refection skills) and outcomes (e.g., behaviours) remains scarce, and (iii) reflective practice is still very much a cornerstone of professional development for practitioners with limited interest afforded to its utilisation with end-users (e.g., clients). Support for this contention is recognised across disciplines and contexts (e.g., nursing, health sciences, sport psychology), and has been raised numerous times over the past decade (e.g., Dube & Ducharme, 2015; Huntley et al., 2014; Huntley et al., 2019; Mann et al., 2009; Picknell et al., 2014). Indeed, Dube and Ducharme (2015; p. 91) who carried out an empirical literature review of reflective practice research in nursing concluded that whilst "Reflective practice is a widespread concept in nursing, few empirical studies have demonstrated the possible effects of such a practice". Without doubt, these sentiments are widely shared across professional disciplines and appear to have prompted a *call to action* within the applied sport science domain. In a recent expert

statement on reflective practice published by BASES (Huntley et al., 2019; p. 7) stated:

> A wider and more encompassing evidence-base is needed that explores the development of context-specific knowledge, understanding and practice. This requires a commitment from sport and exercise sciences to outwardly value different forms of knowledge (and evidence) by supporting the growth of a body of literature that focuses on professional applied practice. This will provide a platform to support ongoing RP as part of the wider aspects of our roles.

In light of this information, every effort was made to ensure the most contemporary literature was reviewed and critiqued as part of the process for justifying the studies carried out for this programme of research. With respect to presenting conceptual information pertaining to reflective practice, this was relatively straightforward. However, for developing empirical research designs and building on what had been done previously in the literature, albeit limited, the most up-to-date research was used even if this may be considered as dated.

Future Research Directions

As a result of this research project, a number of recommendations are considered pertinent for future reflective practice research. First, although the present thesis presents empirical data from two investigations that promote the value of reflective practice, this type of evidence is still lacking within the wider reflective practice literature. As noted previously, researchers from a variety of disciplines continue to emphasise this point even though the issue of a limited empirical evidence base has been raised on numerous occasions (e.g., Dube & Ducharme, 2015; Huntley et al., 2014; Huntley et al., 2019; Mann et al., 2009; Picknell et al., 2014). Although

few in number, where quantitative data has been collected for examining either the development of reflective skills (e.g., Duke & Appleton, 2000; Sobral, 2000), or practice-based outcomes (e.g., Mamede, van Gog, van den Berge, Rikers, van Saase, van Guldener, & Schmidt, 2010; Peden-McAlpine, Tomlinson, Forneris, Genck, & Meiers, 2005), the findings have been largely positive. However, without a more diverse range of investigations across professional domains and practitioner experience levels, generalisations and transferability of findings are limited. It is recognised that new research appears to have been carried out specifically examining the efficacy of reflective practice interventions (e.g., Cropley, Baldock, Hanton, Gucciardi, McKay, Neil, & Williams, 2020; Dao, Nguyen, & Chi, 2020; Hazan et al.., 2020), which is a welcome addition to the literature. However, as this research was published after the submission of the thesis, it has not been reviewed herein. Potential reasons for this lack of research engagement appears to be a result of the philosophical and theoretical underpinnings of reflective practice, which traditionally are more closely aligned with interpretivism and qualitative inquiry (Sparkes, 1998). To that end, the author agrees with Smith and Sparke's (2009) who warned that qualitative inquiry should not be at the expense *of*, but rather in conjunction *with*, quantitative methods in order to allow for elaboration of certain issues and stimulating further thought on the topic under investigation.

In addition, given that capabilities related to being a reflective practitioner are considered developmental in nature, it is surprising that associated reflection skills have not been afforded more quantitative attention in the same way that other cognitive skills (e.g., imagery, mindfulness) have across psychological disciplines (cf. Tenenbaum & Filho, 2018). To the author’s knowledge, presently, there is no specific quantitative tool within the sport, exercise and health domains that explicitly measures

skills related to reflection. Indeed, the measures (i.e., RQ & RLS) used within Study 2 and Study 3 were sourced from the education domain (Kember et al., 2000; Sobral, 2000) and adapted for the specific context that the research was carried out in. It is widely recognised that quantitative inquiry, using valid and reliable assessment instruments, is considered essential for theory development. Indeed, according to Tenenbaum and Filho (2018), psychological instruments are used to develop valid theoretical frameworks, and allow scholars to propose and test different measurement models, while contrasting competing hypotheses and alternative models related to a given phenomenon. To that end, it seems timely that research enters a sustained period of quantitative enquiry that will contribute to the already beneficial claims of the usefulness of reflective practice, but will allow scholars and practitioners to better understand the cause and effect relationships between reflective practice and relevant outcome measures, and will also allow for the effectiveness of theoretically sound interventions to be evaluated.

With respect to the investigation of cause and effect relationships, it is recommended that future reflective practice research affords attention to both the process of developing reflection skills and how such improvements facilitate alterations to applied practice cognitions, decisions and behaviours. Indeed, the present thesis reported the findings from two studies where interventions were developed to target specific skills and examined how these influenced participants' endeavours. Within the sport, health and exercise literature, this coupling of process and outcome measures has only been examined once (Cropley et al., 2020). Indeed, the majority of empirical studies across domains have focused primarily on evaluating the effectiveness of interventions for either developing reflection skills (e.g., Duke & Appleton, 2000; Sobral, 2000) or examining the direct link between training

programmes and changes to behaviours (e.g., Mamede et al., 2010). Without linking process measures with outcome measures, conclusions regarding the effectiveness of reflective practice interventions are speculative at best, with little to no insight into questions relating to how or why a training programme worked (Picknell et. al. 2014).

The issue regarding the limited research examining the benefits of reflective practice for end users within a therapeutic context has been alluded to previously within this chapter, as this was a key justification for Study 3. Whilst limited, previous evidence for incorporating reflective practice into support-services has suggested that recipients have demonstrated enhanced self-efficacy and management of competitive anxiety (Hanton et al., 2009), maintained effort (Hanrahan, Pedro, & Cerin, 2009), and empowered self-regulated learning (Jonker et al., 2012). Although encouraging, limitations of these studies include a lack of insight into researchers' attempts to develop reflective skills, and the likelihood that participants received appropriate support from suitably trained reflective practitioners, without which conclusions regarding whether participants' thought processes were indicative of critical reflection remains limited. This research should be commended for leading the way in considering the contributions of reflective practice for benefitting clients. Yet, in line with Hardy, Jones, and Gould (1996), for reflective practice to be truly valued as a worthwhile contribution to the development of service provision the advantages that it offers recipients of support-services, whether through enhanced satisfaction, or facilitating positive performance and health related changes, should be of paramount concern for researchers' and practitioners' future endeavours.

Conclusion

The purpose of this thesis was to investigate in detail the value of reflective practice for applied practitioners within the sport, exercise and health domains. The

programme of research has resulted in substantial support that adds to the limited empirical evidence-base that currently exists within the professional practice literature. Specifically, findings generated during the present thesis have: (a) confirmed reflective practice as an evaluative process for facilitating the alignment of theoretical orientations and applied practice; (b) provided empirical evidence that supports the usefulness of reflective practice for applied practitioners from sport, exercise and health domains; (c) exemplified the need for practitioners to engage in reflective practice training for enhancing their reflection skills; (d) conclusively supported the relationship between reflection skills and improvements to service delivery; (e) confirmed the efficacy of implementing reflective practice as part of the process towards self-directed learning.

Given the novel approaches used within the thesis, a range of conceptual and practical implications have either been identified or confirmed against existing insights from previous anecdotal accounts regarding the value of reflective practice. For applied practitioners and profession regulating organisations alike, this information is valuable for supporting the understanding, development, and systematic integration of reflection into professional practice, education and training programmes. In summary, the findings presented herein should go some way to providing the necessary confidence that reflective practice actually works.

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CHAPTER 9

REFLECTIVE EPILOGUE

Reflective Epilogue

The time taken to complete this programme of research, from the initial proposal through to submission, will be close to ten years. As such, I felt it necessary to reflect on the journey and piece together the pertinent factors that have contributed not only to the construction and evolution, but also the delay, of this work. In doing so, I hope that I am able to convey to the reader the tribulations that have been faced along the way and steps taken to minimise their potential detrimental effects. This is not intended to reflect a 'woe is me' account. Indeed, the challenges related to carrying out a doctoral research programme are well documented (Katz, 2016). Instead, the present chapter aims to illuminate how challenges relating to conducting research in a real world setting were overcome. It is my belief that being committed to actively engaging with reflective practice throughout the course of this process has not only been helpful for developing effective training programmes and supporting participants with their reflections (Cropley et al., 2010), but it has also been useful for helping me cope with disappointments, providing me with the awareness to consistently see the bigger picture, and maintaining my motivation by allowing me to rationalise moments of uncertainty. The personal narrative contained within this section aims to facilitate discussion and allow readers to reflect and consider the transferability of the author's experiences to their own circumstances.

The original discussions and proposal relating to this programme of research were centred on utilising reflective practice with sporting populations. Indeed, during this period a steady stream of research examining the usefulness of reflective practice for sports coaches (e.g., Cropley et al., 2015), sport psychologists (e.g., Cropley & Hanton, 2011), and athletes (e.g., Neil et al., 2013) were emerging. However, given that most of these examinations were based on anecdotal accounts, rather than

utilising rigorous scientific research methods, provided the key rationale for the programme of research presented herein. In addition, calls from within the literature suggested that the only way for applied practitioners and profession regulating bodies to confidently embrace reflective practice as a meaningful activity was through the generation of empirical evidence (cf. Picknell et al., 2014). As such, the need for the types of investigations presented within this thesis were deemed timely and pertinent for adding impactful research to the flourishing literature on reflective practice in sport.

It was shortly after this period of time I was presented with my first major challenge as a researcher. Whilst the original proposal had been accepted and I had successfully enrolled onto the PhD programme, I was to be offered an exciting career opportunity in the United Arab Emirates. The role involved working as part of an interdisciplinary team providing a variety of programmes and services to military personnel, with the dual aim of enhancing health and improving performance. Prior to this, I had worked as a university lecturer, and whilst I enjoyed my roles as educator and researcher, I relished the opportunity to delve into more regular applied professional practice. Moreover, whilst the individuals that I was to be serving were not sporting individuals or teams, principles that I had learnt about as part of my professional development could be put to use in a real world setting. Of course, this caused issues regarding my proposed research interests as changing environments so drastically meant that I would have limited access to sporting populations compared to what I had at my disposal in the United Kingdom. Having discussed this issue with my supervisors, as well as my prospective employer, it was decided that if similar shortfalls existed within allied healthcare disciplines to those highlighted above the focus of the research programme could be adjusted to suit my new environment.

The first phase of determining whether reflective practice held the same weight in other domains as it does for sporting professions was to review the relevant licensing and accreditation guidelines. Whilst the terminology used varied, there was a general need for practitioners to engage in self-evaluation and to commit to learning from experiences (e.g., Health and Care Professions Council, 2013, 2015). In addition, a comprehensive review of relevant research in the health science domains (Mann et al., 2009) highlighted similar trends to the conceptual and operational developments of reflective practice noted in the sporting literature and subsequent issues for informing profession specific policy. Indeed, Mann et al. (2009) noted:

> The very nature of reflective practice makes its quantification challenging. Yet, as understanding of reflection develops and the field matures, there will be a need for studies with rigorous designs that will allow us to evaluate the effect of different educational strategies to promote its development. Creative and disciplined application of a range of study designs and methods will be required to affect this next stage of understanding this element of practice (p. 615).

Having convinced my supervisory team of the feasibility of examining the beneficial effects of reflective practice for allied healthcare professions, the second phase of programme development was to explore cultural issues that may impact delivery methods and restrict opportunities for learning that had been promoted in the wider literature. To better grasp teaching and learning preferences of graduates and young professionals from the Middle East, I engaged in three information-gathering activities: (a) reviewing educational literature pertinent to the region; (b) informal discussions with colleagues and acquaintances with experience in the country's education sector; and (c) personal observations of education sessions. Collectively,

the evidence inferred that whilst most young professionals were predominantly exposed to approaches closely aligned with didactic methods as part of their early education, their completion of higher education programmes meant they were likely to be introduced to more Westernised education principles. This transition from predominantly didactic methods to a range of teaching approaches has been noted as contributing to higher education students becoming more critical regarding how professional knowledge and understanding is gained. Indeed, Dickson and Kadbey (2014) acknowledged that whilst later stage professionals have a tendency to revert to type in terms of how they were educated, more recently qualified individuals are adopting and demanding alternative methods as part of professional development endeavours. This gave me confidence that introducing reflective practice with my new colleagues would not necessarily be rejected out of hand. Coincidently, reports were emerging within the literature specific to the Middle East region that highlighted the positive impact that reflective practice was having as part of education programmes in local universities (e.g., Clarke & Otaky, 2006; Yassaei, 2012). That said, I had to be cautious about attempting to develop and integrate reflective practice programmes using methods and modes of delivery that I had become accustomed to during my professional development. Indeed, Richardson (2004) raised concerns about whether reflective practice, as conceptualised in the literature of the time, and associated skills required to be a reflective practitioner were congruent with traditions; namely, values and beliefs, related to this culture. Specifically, she argued that cultural values represent powerful constraints on individual behaviour, which could limit the success of reflective practices. Of particular concern for Richardson (2004) were the male-dominated social structures to which young Arabic women belonged, which she felt oppressed freedom of expression. In light of pertinent skills (e.g., open-mindedness;

problem-solving) needed to develop as a reflective practitioner, and that all potential participants from my organisation were female, it appeared that the principles of reflective practice that I was familiar with were potentially a contradiction to the traditional behaviours preferred of females living by Arabic-Islamic principles.

My initial experiences of managing a team of largely Emirati female health practitioners, understandably involved a period of intense commitment on my behalf to actively reflect on the numerous meetings, training sessions and informal interactions that I had. What I witnessed, and reflected on, did not seem to correlate with the concerns raised by Richardson (2004). If anything, the staff appeared to relish opportunities to engage with reflective practice and the methods I implemented for self-evaluating their experiences. Indeed, if their social structures outside of work restricted their freedom of expression, then having the opportunity to express themselves in a non-judgemental environment appeared liberating. Of course, like with any new skill, it took time and practice for them to understand how to use reflective practice. Knowing how to reflect and when to self-initiate critical questions about their practice was their biggest challenge. However, in a relatively short period of time I began to agree with Clarke and Otaky (2006) who criticised those who all too easily view culture as a hindering constraint and obstacle to practitioners' engagement with reflective practice. That said, as with any new learning paradigm, reflective practice with this population needed to be shaped and carefully integrated with an understanding of the individuals' preferences for learning. Indeed, the principles, methods and types of reflective practices incorporated with the local community were filtered into the culture by taking into account their day-to-day traditions so as to enhance the relational meaning.

The two core issues raised so far in this chapter have without doubt had the biggest impact on shaping the direction of this research programme and informing how the investigations were developed and carried out. Although at the time I did not fully appreciate the significance of these events, as I near the completion of this journey I firmly believe that my commitment to reflective practice and development as a reflective practitioner were seminal in allowing me to make sense of these situations and formulate relevant action plans. Indeed, previously, my predisposition would have been to interpret the ambiguity as stressful events, which would have more than likely resulted in me experiencing anxiety, clouded judgement and suboptimal decision-making. However, with reflective practice becoming my "go-to" method for appraising a range of circumstances, especially those with an element of uncertainty, I viewed both of these events as critical incidents that needed to be rationalised and explored so that they could be contextualised as opportunities rather than threats. Evidence for the notion that reflective practice can facilitate more desirable coping mechanisms for dealing with stress is sparse, however there are indications within the literature that reflections may contribute to developing knowledge about how to cope effectively with stressors (e.g., Hanton et al., 2009; Lutz, Scheffer, Edelhaeuser, Taushel, & Neumann, 2013). As such, it became apparent that my ability to learn from these potentially stressful events appeared to be in line with the key tenets of experiential learning, albeit with reflective practice being the vehicle that promotes obtainable learning outcomes. This relationship between reflective practice and experiential learning is not necessarily new, especially when considering Kolb's (1984) assertion that learning is, "A process whereby new knowledge is created through the combination of grasping, reflecting upon and transforming experiences" (p. 41). However, having reflected on these situations and

having gone through the process of experiential learning, allowed me to appreciate that the research journey is rarely straightforward. Yet, as long as the core aims of the programme are kept in focus, and that as a developing researcher I was prepared to utilise critical thinking in order to be rational, logical and adaptable, then there was still scope to carry out research that was necessary and impactful. Personally, this realisation was invaluable and whilst the literature is abundant with investigations that examine the relationship between reflective and effective practice (cf. Cropley et al., 2015), there is less that considers the benefits of reflective practice for researchers. I consider myself fortunate that as part of my professional training (e.g., Supervised Experience towards BASES Accreditation) that I engaged with prior to embarking on a research career, my supervisor was a passionate advocate of reflective practice, and as such, I already had the foundations in place to be a reflective practitioner. Of course, this was necessary given my role in the present research programme that required me to train and support practitioners with their reflective endeavours. However, whilst there are examples where higher education institutes are incorporating reflective practice into study skills sessions for PhD students (e.g., Orange, 2016), I feel that more needs to be done in order to formalise critical reflection as a key competency required of aspiring researchers.

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APPENDICES

APPENDIX 1:

Health & Care Professions Council – Standards of Proficiency for Practitioner Psychologists

hcpc health & care professions council

Standards of proficiency

Practitioner psychologists

Contents

Foreword

We are pleased to present the Health and Care Professions Council's (HCPC) standards of proficiency for practitioner psychologists.

We first published standards of proficiency for practitioner psychologists in July 2009. We made minor changes to the standards following publication in October 2010. We review the standards regularly to look at how they are working and to check whether they continue to reflect current practice in the professions we regulate.

These new revised standards are a result of our most recent review of the standards of proficiency. As a result of the first stage of the review, and the results of a public consultation, we have revised our generic standards which apply to all the professions we regulate. The revised standards are now based around 15 generic statements. This new structure means that we can retain the standards which are shared across all the professions we regulate, whilst allowing us more flexibility in describing the detailed standards which are specific to individual professions.

The profession-specific standards for practitioner psychologists included in this document were developed through the input of the relevant professional bodies and the views of all stakeholders during a further public consultation. The review process and consultation produced valuable feedback and we are grateful to all those who gave their time to help us in shaping the new standards.

We have made a small number of changes to the standards overall, mainly to reflect developments in education and practice, to clarify our intentions and to correct any errors or omissions. We have also made some minor changes to the introduction, in particular to explain the language we use in the standards.

We are confident that the standards are fit for purpose and reflect safe and effective professional practice for practitioner psychologists.

These standards are effective from Wednesday 1 July 2015.

Introduction

This document sets out the standards of proficiency. These standards set out safe and effective practice in the professions we regulate. They are the threshold standards we consider necessary to protect members of the public. They set out what a student must know, understand and be able to do by the time they have completed their training, so that they are able to register with us. Once on our Register you must meet those standards of proficiency which relate to the areas in which you work.

We also expect you to keep to our standards of conduct, performance and ethics and standards for continuing professional development. We publish these in separate documents, which you can find on our website.

In the practitioner psychologist part of our Register, there are seven distinct domains. The standards of proficiency in this document include both generic elements, which apply to all our registrants, profession-specific elements which are relevant to all practitioner psychologists and domain-specific standards which apply to a particular domain. The generic standards are written in **bold**, the profession-specific standards are written in plain text, with the domain-specific standards written in plain blue text.

We have numbered the standards so that you can refer to them more easily. The standards are not hierarchical and are all equally important for practice.

A note about our expectations of you

You must meet all the standards of proficiency to register with us and meet the standards relevant to your scope of practice to stay registered with us.

It is important that you read and understand this document. If your practice is called into question we will consider these standards (and our standards of conduct, performance and ethics) in deciding what action, if any, we need to take.

The standards set out in this document complement information and guidance issued by other organisations, such as your professional body or your employer. We recognise the valuable role played by professional bodies in providing guidance and advice about good practice which can help you to meet the standards in this document.

Your scope of practice

Your scope of practice is the area or areas of your profession in which you have the knowledge, skills and experience to practise lawfully, safely and effectively, in a way that meets our standards and does not pose any danger to the public or to yourself.

We recognise that a registrant's scope of practice will change over time and that the practice of experienced registrants often becomes more focused and specialised than that of newly registered colleagues. This might be because of specialisation in a certain area or with a particular client group, or a movement into roles in management, education or research. Every time you renew your registration, you will be asked to sign a declaration that you continue to meet the standards of proficiency that apply to your scope of practice.

Your particular scope of practice may mean that you are unable to continue to demonstrate that you meet all of the standards that apply for the whole of your profession. As long as you make sure that you are practising safely and effectively within your given scope of practice and do not practise in the areas where you are not proficient to do so, this will not be a problem. If you want to move outside of your scope of practice, you should be certain that you are capable of working lawfully, safely and effectively. This means that you need to exercise personal judgement by undertaking any necessary training and experience, before moving into a new area of practice.

Meeting the standards

It is important that you meet our standards and are able to practise lawfully, safely and effectively. However, we do not dictate how you should meet our standards. There is normally more than one way in which each standard can be met and the way in which you meet our standards might change over time because of improvements in technology or changes in your practice.

We often receive questions from registrants who are concerned that something they have been asked to do, a policy, or the way in which they work might mean they cannot meet our standards. They are often worried that this might have an effect on their registration.

As an autonomous professional, you need to make informed, reasoned decisions about your practice to ensure that you meet the standards that apply to you. This includes seeking advice and support from education providers, employers, colleagues, professional bodies, unions and others to ensure that the wellbeing of service users is safeguarded at all times. So long as you do this and can justify your decisions if asked to, it is very unlikely that you will not meet our standards.

Language

We recognise that our registrants work in a range of different settings, which include clinical practice, education, research and roles in industry. We also recognise that the use of terminology can be an emotive issue.

Our registrants work with very different people and use different terms to describe the groups that use, or are affected by, their services. Some of our registrants work with patients, some with clients which can include organisations, and others with service users. We have used the term 'service user' in a broad sense in the standards to refer to anyone who uses or is affected by the services of our registrants. However, the term you use to describe the groups that use, or are affected by, the services you offer will be guided by context and the area or domain you practise in.

When we consulted on the standards we received a lot of different feedback about our use of the terms 'evidence-based' and 'evidence-informed' but with no clear consensus on which of these terms were preferred. These terms are about practitioner psychologists' awareness and use of research and other evidence, where this is available, to guide their practice. As a result, in standard 12.1, which applies to all practitioner psychologists and is about use of evidence more generally, we have used both terms. In the other standards which apply to specific psychological models or frameworks, we have retained our existing terminology of 'evidence-based'.

In the standards of proficiency, we use phrases such as 'understand', 'know', and 'be able to'. This is so the standards remain applicable to current registrants in maintaining their fitness to practise, as well as prospective registrants who have not yet started practising and are applying for registration for the first time.

These standards may change in the future

We have produced these standards after speaking to our stakeholders and holding a formal public consultation.

We will continue to listen to our stakeholders and will keep our standards under continual review. Therefore, we may make further changes in the future to take into account changes in practice.

We will always publicise any changes to the standards that we make by, for instance, publishing notices on our website and informing professional bodies.

Standards of proficiency

Registrant practitioner psychologists must:

1 be able to practise safely and effectively within their scope of practice

1.1 know the limits of their practice and when to seek advice or refer to another professional

1.2 recognise the need to manage their own workload and resources effectively and be able to practise accordingly

2 be able to practise within the legal and ethical boundaries of their profession

2.1 understand the need to act in the best interests of service users at all times

2.2 understand what is required of them by the Health and Care Professions Council

2.3 understand the need to respect and uphold the rights, dignity, values and autonomy of service users including their role in the assessment, treatment and intervention process and in maintaining health and wellbeing

2.4 recognise that relationships with service users should be based on mutual respect and trust, and be able to maintain high standards of practice even in situations of personal incompatibility

2.5 understand current legislation applicable to the work of their profession

2.6 understand the importance of and be able to obtain informed consent

2.7 be able to exercise a professional duty of care

2.8 understand the complex ethical and legal issues of any form of dual relationship and the impact these may have on service users

2.9 understand the power imbalance between practitioners and service users and how this can be managed appropriately

2.10 be able to recognise appropriate boundaries and understand the dynamics of power relationships

2.11 understand the organisational context for their practice as a practitioner psychologist

3 be able to maintain fitness to practise

3.1 understand the need to maintain high standards of personal and professional conduct

3.2 understand the importance of maintaining their own health

3.3 understand both the need to keep skills and knowledge up to date and the importance of career-long learning

3.4 be able to manage the physical, psychological and emotional impact of their practice

4 be able to practise as an autonomous professional, exercising their own professional judgement

4.1 be able to assess a professional situation, determine the nature and severity of the problem and call upon the required knowledge and experience to deal with the problem

4.2 be able to make reasoned decisions to initiate, continue, modify or cease treatment, intervention or the use of techniques or procedures, and record the decisions and reasoning appropriately

4.3 be able to initiate resolution of problems and be able to exercise personal initiative

4.4 recognise that they are personally responsible for and must be able to justify their decisions

4.5 be able to make and receive appropriate referrals

4.6 understand the importance of participation in training, supervision and mentoring

5 be aware of the impact of culture, equality and diversity on practice

5.1 understand the impact of differences such as gender, sexuality, ethnicity, culture, religion and age on psychological wellbeing or behaviour

5.2 understand the requirement to adapt practice to meet the needs of different groups and individuals

6 be able to practise in a non-discriminatory manner

7 understand the importance of and be able to maintain confidentiality

7.1 be aware of the limits of the concept of confidentiality

7.2 understand the principles of information governance and be aware of the safe and effective use of health, social care and other relevant information

7.3 be able to recognise and respond appropriately to situations where it is necessary to share information to safeguard service users or the wider public

8 be able to communicate effectively

8.1 be able to demonstrate effective and appropriate verbal and non-verbal skills in communicating information, advice, instruction and professional opinion to service users, colleagues and others

8.2 be able to communicate in English to the standard equivalent to level 7 of the International English Language Testing System, with no element below 6.5[1]

8.3 understand how communication skills affect assessment of, and engagement with, service users and how the means of communication should be modified to address and take account of factors such as age, capacity, learning ability and physical ability

8.4 be able to select, move between and use appropriate forms of verbal and non-verbal communication with service users and others

8.5 be aware of the characteristics and consequences of verbal and non-verbal communication and how this can be affected by factors such as age, culture, ethnicity, gender, socio-economic status and spiritual or religious beliefs

[1] The International English Language Testing System (IELTS) tests competence in the English language. Applicants who have qualified outside of the UK, whose first language is not English and who are not nationals of a country within the European Economic Area (EEA) or Switzerland, must provide evidence that they have reached the necessary standard. Please visit our website for more information.

8.6 understand the need to provide service users or people acting on their behalf with the information necessary to enable them to make informed decisions

8.7 be able to select the appropriate means for communicating feedback to service users

8.8 be able to provide psychological opinion and advice in formal settings, as appropriate

8.9 be able to communicate ideas and conclusions clearly and effectively to specialist and non-specialist audiences

8.10 be able to explain the nature and purpose of specific psychological techniques to service users

8.11 be able to summarise and present complex ideas in an appropriate form

8.12 understand the need to assist the communication needs of service users such as through the use of an appropriate interpreter, wherever possible

8.13 recognise the need to use interpersonal skills to encourage the active participation of service users

8.14 be able to use formulations to assist multi-professional communication and understanding

8.15 understand explicit and implicit communications in a practitioner – service user relationship

8.16 be able to appropriately define and contract work with commissioning service users or their representatives

Counselling psychologists only

8.17 understand how empathic understanding can be helped by creativity and artistry in the use of language and metaphor

9 be able to work appropriately with others

9.1 be able to work, where appropriate, in partnership with service users, other professionals, support staff and others

9.2 understand the need to build and sustain professional relationships as both an independent practitioner and collaboratively as a member of a team

9.3 understand the need to engage service users and carers in planning and evaluating assessments, treatments and interventions to meet their needs and goals

9.4 understand the need to implement interventions, care plans or management plans in partnership with service users, other professionals and carers

9.5 be able to initiate, develop and end a practitioner – service user relationship

9.6 understand the dynamics present in relationships between service users and practitioners

9.7 be able to contribute effectively to work undertaken as part of a multi-disciplinary team

9.8 be able to plan, design and deliver teaching and training which takes into account the needs and goals of participants

9.9 be able to support the learning of others in the application of psychological skills, knowledge, practices and procedures

9.10 be able to use psychological formulations with service users to facilitate their understanding of their experience or situation

10 be able to maintain records appropriately

10.1 be able to keep accurate, comprehensive and comprehensible records in accordance with applicable legislation, protocols and guidelines

10.2 recognise the need to manage records and all other information in accordance with applicable legislation, protocols and guidelines

11 be able to reflect on and review practice

11.1 understand the value of reflection on practice and the need to record the outcome of such reflection

11.2 recognise the value of case conferences or other methods of review

11.3 be able to reflect critically on their practice and consider alternative ways of working

11.4 understand models of supervision and their contribution to practice

Counselling psychologists only

11.5 be able to critically reflect on the use of self in the therapeutic process

12 be able to assure the quality of their practice

12.1 be able to engage in evidence-based and evidence-informed practice, evaluate practice systematically and participate in audit procedures

12.2 be able to gather information, including qualitative and quantitative data, that helps to evaluate the responses of service users to their care or experience

12.3 be aware of the role of audit and review in quality management, including quality control, quality assurance and the use of appropriate outcome measures

12.4 be able to maintain an effective audit trail and work towards continual improvement

12.5 be aware of, and able to participate in, quality assurance programmes, where appropriate

12.6 be able to evaluate intervention plans using recognised outcome measures and revise the plans as necessary in conjunction with the service user

12.7 be able to revise formulations in the light of ongoing intervention and when necessary reformulate the problem

12.8 recognise the need to monitor and evaluate the quality of practice and the value of contributing to the generation of data for quality assurance and improvement programmes

12.9 be able to monitor agreements and practices with service users, groups and organisations

13 understand the key concepts of the knowledge base relevant to their profession

13.1 understand the structure and function of the human body, together with knowledge of health, well-being, disease, disorder and dysfunction relevant to their domain

13.2 be aware of the principles and applications of scientific enquiry, including the evaluation of the effectiveness of interventions and the research process

13.3 recognise the role of other professions and stakeholders relevant to the work of their domain

13.4 understand the structures and functions of UK service providers applicable to the work of their domain

13.5 understand the theoretical basis of, and the variety of approaches to, assessment and intervention

13.6 understand the role of the practitioner psychologist across a range of settings and services

13.7 understand the concept of leadership and its application to practice

13.8 understand the application of consultation models to service-delivery and practice, including the role of leadership and group processes

Clinical psychologists only

13.9 understand theories and evidence concerning psychological development and psychological difficulties across the lifespan and their assessment and remediation

13.10 understand more than one evidence-based model of formal psychological therapy

13.11 understand psychological models related to how biological, sociological and circumstantial or life-event-related factors impinge on psychological processes to affect psychological wellbeing

13.12 understand psychological models related to a range of presentations including:

- service users with presentations from acute to enduring and mild to severe;
- problems with biological or neuropsychological aspects; and
- problems with mainly psychosocial factors including problems of coping, adaptation and resilience to adverse circumstances and life events, including bereavement and other chronic physical and mental health conditions

13.13 understand psychological models related to service users:

- from a range of social and cultural backgrounds;
- of all ages;
- across a range of intellectual functioning;
- with significant levels of challenging behaviour;
- with developmental learning disabilities and cognitive impairment;
- with communication difficulties;
- with substance misuse problems; and
- with physical health problems

13.14 understand psychological models related to working:

- with service users, couples, families, carers, groups and at the organisational and community level; and
- in a variety of settings including in-patient or other residential facilities with high-dependency needs, secondary health care and community or primary care

13.15 understand change and transition processes at the individual, group and organisational level

13.16 understand social approaches such as those informed by community, critical and social constructivist perspectives

13.17 understand the impact of psychopharmacological and other clinical interventions on psychological work with service users

Counselling psychologists only

13.18 understand the philosophical bases which underpin those psychological theories which are relevant to counselling psychology

13.19 understand the philosophy, theory and practice of more than one evidence-based model of formal psychological therapy

13.20 understand psychological models related to a range of presentations including:

- service users with presentations from acute to enduring and mild to severe;
- problems with biological or neuropsychological aspects; and
- problems with mainly psychosocial factors including problems of coping, adaptation and resilience to adverse circumstances and life events, including bereavement and other chronic physical and mental health conditions

13.21 understand the therapeutic relationship and alliance as conceptualised by each model

13.22 understand the spiritual and cultural traditions relevant to counselling psychology

13.23 understand the primary philosophical paradigms that inform psychological theory with particular regard to their relevance to, and impact upon, the understanding of the subjectivity and inter-subjectivity of experience throughout human development

13.24 understand theories of human cognitive, emotional, behavioural, social and physiological functioning relevant to counselling psychology

13.25 understand different theories of lifespan development

13.26 understand social and cultural contexts and the nature of relationships throughout the lifespan

13.27 understand theories of psychopathology and of change

13.28 understand the impact of psychopharmacology and other interventions on psychological work with service users

Educational psychologists only

13.29 understand the role of the educational psychologist across a range of school and community settings and services

13.30 understand the educational and emotional factors that facilitate or impede the provision of effective teaching and learning

13.31 understand psychological theories of, and research evidence in, child, adolescent and young adult development relevant to educational psychology

13.32 understand the structures and systems of a wide range of settings in which education, health and care are delivered for children, adolescents and young adults, including child protection procedures

13.33 understand psychological models related to the influence of school ethos and culture, educational curricula, communication systems, management and leadership styles on the cognitive, behavioural, emotional and social development of children, adolescents and young adults

13.34 understand psychological models of the factors that lead to underachievement, disaffection and social exclusion amongst vulnerable groups

13.35 understand theories and evidence underlying psychological intervention with children, adolescents, young adults, their parents or carers, and education and other professionals

13.36 understand psychological models related to the influence on development of children, adolescents and young adults from:

- family structures and processes;
- cultural and community contexts; and
- organisations and systems

13.37 understand change and transition processes at the individual, group and organisational level

13.38 understand the theoretical basis of, and the variety of approaches to, consultation and assessment in educational psychology

Forensic psychologists only

13.39 understand the application of psychology in the legal system

13.40 understand the application and integration of a range of theoretical perspectives on socially and individually damaging behaviours, including psychological, social and biological perspectives

13.41 understand psychological models related to a range of presentations including:

- service users with presentations from acute to enduring and mild to severe;
- problems with biological or neuropsychological aspects; and
- problems with mainly psychosocial factors including problems of coping, adaptation and resilience to adverse circumstances and life events, including bereavement and other chronic physical and mental health conditions

13.42 understand psychological theories and their application to the provision of psychological therapies that focus on offenders and victims of offences

13.43 understand effective assessment approaches with service users presenting with individually or socially damaging behaviour

13.44 understand the development of criminal and antisocial behaviour

13.45 understand the psychological interventions related to different service user groups including victims of offences, offenders, litigants, appellants and individuals seeking arbitration and mediation

Health psychologists only

13.46 understand context and perspectives in health psychology

13.47 understand the epidemiology of health and illness

13.48 understand:

- biological mechanisms of health and disease;
- health-related cognitions and behaviour;
- stress, health and illness;
- individual differences in health and illness;
- lifespan, gender and cross-cultural perspectives; and
- long-term conditions and disability

13.49 understand applications of health psychology and professional issues

13.50 understand healthcare in professional settings

Occupational psychologists only

13.51 understand the following in occupational psychology:

- human-machine interaction;
- design of environments and work;
- personnel selection and assessment;
- performance appraisal and career development;
- counselling and personal development;
- training;
- employee relations and motivation; and
- organisational development and change

Sport and exercise psychology

13.52 understand cognitive processes, including motor skills, practice skills, learning and perception; and self-regulation

13.53 understand psychological skills such as:

- goal setting;
- self-talk;
- imagery;
- pre-performance routines;
- arousal control, such as relaxation and activation; and
- strategies for stress and emotion management

13.54 understand exercise and physical activity including:

- determinants, such as motives, barriers and adherence;
- outcomes in relation to affect, such as mood and emotion;
- cognition and mental health issues, such as self-esteem, eating disorders, depression and exercise dependence;
- lifestyle and quality of life; and
- injury

13.55 understand individual differences including:

- mental toughness, hardiness and resilience;
- personality;
- confidence;
- motivation;
- self-concept and self-esteem; and
- stress and coping

13.56 understand social processes within sport and exercise psychology including:

- interpersonal skills and relationships;
- group dynamics and functioning;
- organisational issues; and
- leadership

13.57 understand the impact of developmental processes, including lifespan issues and processes related to career transitions and termination

14 be able to draw on appropriate knowledge and skills to inform practice

14.1 be able to apply psychology across a variety of different contexts using a range of evidence-based and theoretical models, frameworks and psychological paradigms

14.2 be able to change their practice as needed to take account of new developments or changing contexts

14.3 be able to conduct appropriate assessment or monitoring procedures, treatment, interventions, therapy or other actions safely and effectively

14.4 be able to conduct consultancy

14.5 be able to formulate specific and appropriate management plans including the setting of timescales

14.6 be able to manage resources to meet timescales and agreed project objectives

14.7 be able to use psychological formulations to plan appropriate interventions that take the service user's perspective into account

14.8 be able to direct the implementation of applications and interventions carried out by others

14.9 be able to gather appropriate information

14.10 be able to make informed judgements on complex issues in the absence of complete information

14.11 be able to work effectively whilst holding alternative competing explanations in mind

14.12 be able to generalise and synthesise prior knowledge and experience in order to apply them critically and creatively in different settings and novel situations

14.13 be able to select and use appropriate assessment techniques

14.14 be able to undertake and record a thorough, sensitive and detailed assessment, using appropriate techniques and equipment

14.15 be able to choose and use a broad range of psychological assessment methods, appropriate to the service user, environment and the type of intervention likely to be required

14.16 be able to decide how to assess, formulate and intervene psychologically from a range of possible models and modes of intervention with service users or service systems

14.17 be able to use formal assessment procedures, systematic interviewing procedures and other structured methods of assessment relevant to their domain

14.18 be able to undertake or arrange investigations as appropriate

14.19 be able to analyse and critically evaluate the information collected

14.20 be able to critically evaluate risks and their implications

14.21 be able to demonstrate a logical and systematic approach to problem solving

14.22 be able to use research, reasoning and problem solving skills to determine appropriate actions

14.23 be able to recognise when further intervention is inappropriate, or unlikely to be helpful

14.24 recognise the value of research to the critical evaluation of practice

14.25 be aware of a range of research methodologies

14.26 be able to evaluate research and other evidence to inform their own practice

14.27 be able to initiate, design, develop, conduct and critically evaluate psychological research

14.28 understand a variety of research designs

14.29 be able to understand and use applicable techniques for research and academic enquiry, including qualitative and quantitative approaches

14.30 be able to use professional and research skills in work with service users based on a scientist-practitioner and reflective-practitioner model that incorporates a cycle of assessment, formulation, intervention and evaluation

14.31 understand research ethics and be able to apply them

14.32 be able to conduct service and large scale evaluations

14.33 be able to use information and communication technologies appropriate to their practice

Clinical psychologists only

14.34 be able to assess social context and organisational characteristics

14.35 be able to develop psychological formulations using the outcomes of assessment, drawing on theory, research and explanatory models

14.36 be able to draw on knowledge of developmental, social and neuropsychological processes across the lifespan to facilitate adaptability and change in individuals, groups, families, organisations and communities

14.37 understand therapeutic techniques and processes as applied when working with a range of individuals in distress including:

- those who experience difficulties related to anxiety, mood, adjustment to adverse circumstances or life-events, eating, psychosis, use of substances; and
- those with somatoform, psychosexual, developmental, personality, cognitive and neurological presentations

14.38 be able, on the basis of psychological formulation, to implement psychological therapy or other interventions appropriate to the presenting problem and to the psychological and social circumstances of the service user

14.39 be able to implement therapeutic interventions based on a range of evidence-based models of formal psychological therapy, including the use of cognitive behavioural therapy

14.40 be able to promote awareness of the actual and potential contribution of psychological services

14.41 be able to evaluate and respond to organisational and service delivery changes, including the provision of consultation

Counselling psychologists only

14.42 be able to contrast, compare and critically evaluate a range of models of therapy

14.43 be able to draw on knowledge of developmental, social and neuropsychological processes across the lifespan to facilitate adaptability and change in individuals, groups, families, organisations and communities

14.44 be able to critically evaluate theories of mind and personality

14.45 understand therapy through their own life-experience

14.46 be able to adapt practice to take account of the nature of relationships throughout the lifespan

14.47 be able to formulate service users' concerns within the chosen therapeutic models

14.48 be able to critically evaluate psychopharmacology and its effects from research and practice

14.49 be able to critically evaluate theories of psychopathology and change

14.50 be able, on the basis of psychological formulation, to implement psychological therapy or other interventions appropriate to the presenting problem and to the psychological and social circumstances of the service user

14.51 be able to implement therapeutic interventions based on a range of evidence-based models of formal psychological therapy

14.52 be able to promote awareness of the actual and potential contribution of psychological services

14.53 be able to evaluate and respond to organisational and service delivery changes, including the provision of consultation

Educational psychologists only

14.54 be able to develop psychological formulations using the outcomes of assessment, drawing on theory, research and explanatory models

14.55 be able to carry out and analyse large-scale data gathering, including questionnaire surveys

14.56 be able to work with key partners to support the design, implementation, conduct, evaluation and dissemination of research activities and to support evidence-based research

14.57 be able to formulate interventions that focus on applying knowledge, skills and expertise to support local and national initiatives

14.58 be able to develop and apply effective interventions to promote psychological wellbeing, social, emotional and behavioural development and to raise educational standards

14.59 be able to implement interventions and plans through and with other professions and with parents or carers

14.60 be able to adopt a proactive and preventative approach in order to promote the psychological wellbeing of service users

14.61 be able to choose and use a broad range of psychological interventions, appropriate to the service user's needs and setting

14.62 be able to integrate and implement therapeutic approaches based on a range of evidence-based psychological interventions

14.63 be able to promote awareness of the actual and potential contribution of psychological services

Forensic psychologists only

14.64 be able to plan and design training and development programmes

14.65 be able to plan and implement assessment procedures for training programmes

14.66 be able to promote awareness of the actual and potential contribution of psychological services

14.67 be able to assess social context and organisational characteristics

14.68 be able to research and develop psychological methods, concepts, models, theories and instruments in forensic psychology

14.69 be able to evaluate and respond to organisational and service delivery changes, including the provision of consultation

14.70 be able to draw on knowledge of developmental and social changes and constraints across an individual's lifespan to facilitate adaptability and change

14.71 be able to implement interventions and care-plans through and with other professionals who form part of the service user care-team

14.72 be able, on the basis of empirically derived psychological formulation, to implement psychological therapy or other interventions appropriate to the presenting maladaptive or socially damaging behaviour of the service user

14.73 be able to integrate and implement evidence-based psychological therapy at either an individual or group level

Health psychologists only

14.74 be able to plan and implement assessment procedures for training programmes

14.75 be able to develop appropriate psychological assessments based on appraisal of the influence of the biological, social and environmental context

14.76 be able to develop psychological formulations using the outcomes of assessment, drawing on theory, research and explanatory models

14.77 be able to carry out and analyse large-scale data gathering, including questionnaire surveys

14.78 be able to draw on knowledge of developmental, social and biological processes across the lifespan to facilitate adaptability and change in individuals, groups, families, organisations and communities

14.79 be able to contrast, compare and critically evaluate a range of models of behaviour change

14.80 understand techniques and processes as applied when working with different individuals who experience difficulties

14.81 be able to develop and apply effective interventions to promote psychological wellbeing, social, emotional and behavioural development and to raise educational standards

14.82 be able to evaluate and respond to change in health psychology and in consultancy and service-delivery contexts

14.83 be able, on the basis of psychological formulation, to implement psychological therapy or other interventions appropriate to the presenting problem, and to the psychological and social circumstances of the service user

14.84 be able to integrate and implement therapeutic approaches based on a range of evidence-based psychological interventions

14.85 be able to choose and use a broad range of psychological interventions, appropriate to the service user's needs and setting

Occupational psychologists only

14.86 be able to assess individuals, groups and organisations in detail

14.87 be able to use the consultancy cycle

14.88 be able to research and develop psychological methods, concepts, models, theories and instruments in occupational psychology

14.89 be able to use psychological theory to guide research solutions for the benefit of organisations and individuals

14.90 understand and be able to act and provide advice on policy development concerning employees' and job seekers' rights

14.91 be able to run, direct, train and monitor others in the effective implementation of an application

Sport and exercise psychologists only

14.92 be able to assess social context and organisational characteristics

14.93 be able to develop psychological formulations using the outcomes of assessment, drawing on theory, research and explanatory models

14.94 be able to formulate service users' concerns within the chosen intervention models

15 understand the need to establish and maintain a safe practice environment

15.1 understand the need to maintain the safety of both service users and those involved in their care or experience

15.2 be aware of applicable health and safety legislation, and any relevant safety policies and procedures in force at the workplace, such as incident reporting, and be able to act in accordance with these

15.3 be able to establish safe environments for practice, which minimise risks to service users, those treating them and others

Sport and exercise psychologists only

15.4 be aware of the possible physical risks associated with certain sport and exercise contexts

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APPENDIX 2:

Reflection Questionnaire

REFLECTION QUESTIONNAIRE

Please fill in the appropriate letter to indicate your level of agreement with statements about your actions and thinking during your education, training and career		
1 = Strongly disagree *2 = Somewhat disagree* *3 = Only to be used if a definite answer is not possible* *4 = Somehwat agree* *5 = Strongly agree*		
		Answer
1	When I am working on some activities, I can do them without thinking about what I am doing	
2	This career requires me to understand concepts taught by various professionals	
3	I sometimes question the way others do something and try to think of a better way	
4	As a result of my education and training I have changed the way I look at myself	
5	In this career I do things so many times that I have started doing them without thinking about it	
6	To succeed in this career you need to understand the all subject content	
7	I like to think over what I have been doing and consider alternative ways of doing it	
8	My education, training and career have challenged some of my firmly held ideas	
9	As long as I can remember information from my education and training, I do not have to think too much	
10	I need to understand material taught during education and training in order to perform practical tasks	
11	I often reflect reflect on my actions to see whether I could have improved on what I did	
12	As a result of my education and training I have changed my normal way of doing things	
13	If I follow strictly to the information I learnt during my education and training, I do not have to think too much during my career	
14	In my education, training and career I have to continually think about the information I have been taught	
15	I often re-appraise my experiences so I can learn from them and improve for my next performance	
16	During my education and training I discovered faults in what I had previously believed to be right	

REFLECTION QUESTIONNAIRE SCORING

The Reflection Questionnaire consists of four scales, each comprising four questions. Below identifies the corresponding question for each scale. A cumulative score for each scale is calculated by adding scores for each question.

Habitual Action:

Item:	Response:
1.	___
5.	___
9.	___
13.	___
Total Score	___

Understanding:

Item:	Response:
2.	___
6.	___
10.	___
14.	___
Total Score	___

Reflection:

Item:	Response:
3.	___
7.	___
11.	___
15.	___
Total Score	___

Reflection:

Item:	Response:
4.	___
8.	___
12.	___
16.	___
Total Score	___

Higher total scores for each scale indicate more agreement with engaging in the particular dimension of reflective thinking that each scale measures.

APPENDIX 3:

Reflection-in-Learning Scale

Reflection-In-Learning Scale								
Please answer the items below in relation to your learning experiences as a dietician. Draw a circle around the scale number closer to your usual behaviour								
	To what extent have I:	**Not at all**						**Very much so**
1	Carefully planned my learninig tasks during courses and training activities as part of my education as a dietician	1	2	3	4	5	6	7
2	Talked with my colleagues about learning and methods of study	1	2	3	4	5	6	7
3	Reviewed previously studied subjects throughout courses and my career	1	2	3	4	5	6	7
4	Integrated all topics in a course with each other and with those of other courses and training activities	1	2	3	4	5	6	7
5	Mentally processed what I already knew and what I needed to know about topics or procedures	1	2	3	4	5	6	7
6	Been aware of what I was learning and for what purposes	1	2	3	4	5	6	7
7	Sought out interrelations between topics in order to construct more comprehensive notions about some	1	2	3	4	5	6	7
8	Pondered over the meaning of the things I was studying and learniing in relation to my personal experience	1	2	3	4	5	6	7
9	Conscientiously sought to adapt myself to the varied demands of the different courses and training activities	1	2	3	4	5	6	7
10	Systematically reflected on how I was studying and learning in different contexts and circumstances	1	2	3	4	5	6	7
11	Mindfully summarised what I was learning day in, day out, during my studies	1	2	3	4	5	6	7
12	Exerted my capacity to reflect during a learning experience	1	2	3	4	5	6	7
13	Diligently removed negative feelings in relation to aims, objectives, behaviours, topics or problems pertaining to	1	2	3	4	5	6	7
14	Constructively self-assessed my work as a learner	1	2	3	4	5	6	7
Taking into account the perceptions referred to above, I consider that my personal skill or efficacy to practice the reflective process is...								
a	Restricted. I actually require extensive additional preparation (orientation, support, evolvement, practice, and feedback)							
b	Partial. I just need incentives and opportunities							
c	Ample. I have autonomy under favourable conditions							
d	Maximal. I have full autonomy even under negative pressure (adverse context, no time).							

APPENDIX 4:

Diet-COMMS Questionnaire

Diet-COMMS

		Score *0 = not done or achieved* *1 = partly achieved or attempted* *2 = fully achieved*		
Item Number	**Item**	**0**	**1**	**2**
1	Greeting and instructions			
2	Establishes what led up to and clarifies reason for consultation			
3	Outlines what to expect from the visit			
4	Listening to and demonstrating understanding of the client's story			
5	Establishes rapport			
6	Checks understanding of medical condition			
7	Offers information on how food relates to the condition			
8	Completes (clinical, behavioural and dietary) assessment			
9	Works in partnership with the client to identify possible dietary changes. – Explores possible difficulties			
10	Checks understanding and agreement on client determined goals. – Develops a plan prioritising goals			
11	Offers written information to reinforce verbal			
12	Agrees next steps with the client			
13	Interview structured in a sequence			
14	Interview completed in a tiemly fashion			
15	Uses active listening skills (including appropriate questions) to check joint understanding throughout interview			
16	Maintains non-judgemental attitudes			
17	Acknowledges clients views and feelings			
18	Uses appropriate nonverbal communication throughout			
19	Uses approppriate language throughout			
20	Summarises appropriately throughout the consultation			

APPENDIX 5:

Dieticians' Interview Rating Scale

Dietitians' Interview Rating Scale

Each skill is scored on a scale of 1-5, with 5 indicating accurate/appropriate/competent display of skill and 1 indicating inappropriate, inaccurate/incompetent display of skill. Averaged to obtain a score out of 10

Category	Skill	Criteria	Comments	Score
Rapport / Listening	Opportunity for client	Client encouraged to ask questions and discuss concerns; client does most (60-70%) of the talking		
	Sensitivity to the client	Dietitian empathetic and respectful; Dietitian uses reflective listening		
	Feedback	Dietitian provides intermediate social reinforcement and clarifies misperceptions		
	No Undue interruptions	Dietitian is attentive and allows client to finish statements, appropriate self-disclosure		
Questioning Skills	Open-ended questions	At a minimum, start each section with open-ended questions and use appropriately		
	Appropriate probes	Gather necessary information with forced choice but avoid leading questions		
	Concise and understandable	Avoid technical jargon, double or wordy questions		
	Appropriate question repetition	Clarify information yet gather w/o unnecessary repetition due to recording/listening errors		
	Specificity of food intake	Gather all pertinent food/meal management information		
	Specificity of other sections	Gather all pertinent lifestyle, motivation (importance/self-efficacy), health, weight, exercise, etc information		
Comprehensiveness	Addressing major sections of the session	Include: Introduction: Cl. goals, phil, prev; lifestyle assessment, current food intake, health status, etc. progress toward goals, & adherence		

Organisation	Logical organisation	Ask questions of each section in an appropriate funnel order w/o digressions		
	No unnecessary delays	Smooth progression of interview/note taking		
	Final summary	Summarize all pertinent information giving client opportunity to respond		
Transition Statements	Intermediate summaries & transition statements	Signal end of one topic with a summary and a preview of the next section		
Approach to plan / education	Client-centered	Dietitian works collaborative with client to establish appropriate goals/plan		
	Appropriate selection of cognitive/behavioral strategies	Dietitian uses the most appropriate empowerment strategies given the clients stage of change for the target behavior		
	Provides accurate information	Dietitian provides correct and useful information; appropriately handles difficult questions		
	Appropriate use of handouts/visual aids	Dietitian uses appropriate amount and level of supporting materials		
	Referral	Dietitian offers resources and contacts for handling issues beyond the score of the interaction		

APPENDIX 6:

Social Validation Interview Guide

An investigation into the effectiveness of a reflective practice intervention for facilitating positive change to health professionals' practice behaviours

INTERVIEW GUIDE

Name: ……..

Participant Number: ……

Age: ……

Professional Status: ……

Contact Number: ……

Interview Date: ……

Start Time: …….. Finish Time: ……....

Intervention: Social Validation Interview

Introduction (Not Recorded)

Whilst the value of reflective practice for the development of service-delivery effectiveness has been widely reported, much of the evidence upon which these claims is based is anecdotal in nature. Additionally, this research has largely failed to assess direct changes in factors associated with effective practice. In an attempt to address these issues, this study aimed to empirically examine the impact of a reflective practice intervention on the enhancement of reflective skills and subsequent developments in positive practice behaviours (e.g., communication skills).

Over the past few weeks you have engaged in a rigorous process of implementing more stringent methods of reflective practice into your applied work. Initially you were not guided in any particular way and given the opportunity to explore your consultancy experiences in a relatively unstructured manner. Following formal tutorials, mentoring and feedback on your reflections you then instigated a reflective approach that questioned you more specifically in attempts to help you consider the experiences you have had, the things that could be learnt from the experience, and how this learning could be implemented to improve practice.

This interview will look to expand upon the quantitative data that was collected from you, and allow you to examine your experiences and how these may have influenced you professional practice behaviours as a direct result of participation.

Participant Information

- Purpose: Data collection for my PhD. You can have a copy of the final study upon request
- Use of a Dictaphone: a Dictaphone will be used to ensure all information collected is accurate and can be used for producing a transcript. A copy of the transcript will be sent to for review to ensure the information is accurate and provides a true representation of your experience
- Confidentiality
  - anonymity throughout the transcript
  - quotes from transcript to be used but all identifiable factors will be removed or changed
- Right to withdraw and not answer any particular questions
- Last section will allow you the opportunity to comment on the interview and the interview process
- Request for honest answers
- Orienting instructions
  - preparation booklet should have prepared you for the types of questions you'll be asked
  - if you're not sure of anything please let me know

DO YOU HAVE ANY QUESTIONS AT THIS POINT IN TIME?
ARE YOU HAPPY TO START THE INTERVIEW?

Section 1 – Overview of Service Provided to the Client (Context)

1. Could you outline the types of service that you provided?

PROBE:
   a. Why did you act like this (influencing factors)?
   b. What was your professional philosophy during this support (constant or variable)?
   c. What sort of supervision did you receive over this period?

2. Considering the service you provided, overall how successful do you think it has been?

PROBE:
   a. What has lead you to believe this? Is there any evidence??
   b. How do you think that your clients would answer this question?
   c. Are there any particular aspects of the service or your practice/behaviour that you would change to potentially improve this level of success?
   d. What aspects of your practice do you believe were particular strengths of yours?

Section 2 – Pre-Intervention Reflective Practice

1. How did you use reflective practice during this period of your work?

2. What problems did you have with using the particular method?

PROBE:

   a. Knowledge, understanding, time, memory recall
   b. What influence did these have on the way in which you reflected?
   c. How did these problems influence the quality of your reflections?

3. Despite any problems you may have had, how did being encouraged to reflect on your practice in a more structured manner influence your practice?

PROBE:

   a. Benefits for practice?
   b. Development of knowledge, self-awareness, behaviour?

4. Why do you think the reflective process being completed during this period resulted in these developments?
5. During this stage did you speak to anyone regarding the content, structure or quality of your reflections?

PROBE:

   a. Why did you seek this help?
   b. What influence did these conversations have on your reflective practices?
   c. Did anything else happen during this stage that may have influenced your reflective practice?

Section 3 – Post-Intervention Reflective Practice

1. With specific emphasis on the education and support you received, how did your reflections change as a consequence of this training?

PROBE:

   a. Changes to knowledge; changes to understanding of the reflective process; benefits gained from the process; time; structure
   b. Consider thoughts, feelings, emotions and perceptions of RP
   c. Why do you think that these changes occurred?

2. How did the focus of your reflections change as a result of the training?

PROBE:

   a. Content of reflections?
   b. Depth of reflections?
   c. Why did this focus change?
   d. What influence did this have on the outcomes you gained from RP?
   e. Did your focus and use of reflection change throughout the training, as an influence of the mentoring and support you received?

3. How beneficial did you find:
   - The tutorials?
   - The feedback on your reflections?
   - Reflective diary use?
   - Reflective questioning incorporated into the process?
   - The mentoring service?

PROBE (each aspect):

   a. What influence did it/they have on your reflective practices?
   b. How effective was it in influencing your knowledge, understanding and ability to reflect on your experiences?
   c. Why do you think this?
   d. How/why could this service have been improved?
   e. How would these improvements have benefited you?

4. What problems did you have with reflections during and after the training you received?

5. What has been the biggest influencing factor on the way in which your reflective skills have developed over the period of the study?

Section 4 – The Influence of Reflective Practice on Effectiveness

1. Has your practice changed in any ways over the period of this study? Could you provide some examples?

PROBE:

   a. When/why did these changes occur?

b. So have these changes occurred as a direct result of developing your skills in reflective practice? **Could you provide some examples?**
c. How has a process of reflection and a development in your reflective skills influenced your practice?
d. Would these changes have occurred naturally, or by using less structured methods of reflection? Why?

2. What benefits do you perceive that you received from adopting a more stringent, structured reflective process following the training you were provided with?

PROBE:

a. What have you learnt through reflective practice?
b. Have you been able to implement this learning in order to influence behaviour? How? Why?

3. To what extent has developing your reflective skills influenced the effectiveness of your practice? **Could you provide some examples?**

PROBE:

a. Have you noticed a link between an improvement in your reflective skills and a greater focus on the effectiveness of your practice?
b. What has lead to this belief?
c. Why has this link occurred?

4. Has developing your reflective skills enabled you to provide a service that achieved, or worked towards, the goals of practice?

5. So to recap, as a consequence of developing your reflective skills do you feel as though you have developed characteristics associated with consultant effectiveness and thus the effectiveness of your practice overall?

Section 5 – Reliability and Validity of the Interview: Conclusion

1. How satisfied were you with the intervention and support you received during the study? Why?

2. Would you regard changes to your reflective practice and professional practice as significant as a result of participation?

3. During the study itself, were you coerced at any time in terms of your practice and behaviours beyond the scope of the study?

4. How would you rate your experience as a participant? Fair?

5. How did you think the interview went?

6. Did you feel that you could tell your story fully?

7. Did I lead you or influence your responses in any way?

8. Do you think we failed to discuss any important factors?
9. Have you any comments or suggestions about the interview itself?

Thank you for your time and efforts in participating in this study and this interview!

APPENDIX 7:

Study 2 Ethical Approval Confirmation

CARDIFF METROPOLITAN UNIVERSITY
APPLICATION FOR ETHICS APPROVAL

When undertaking a research or enterprise project, Cardiff Met staff and students are obliged to complete this form in order that the ethics implications of that project may be considered.

If the project requires ethics approval from an external agency such as the NHS or MoD, you will not need to seek additional ethics approval from Cardiff Met. You should however complete Part One of this form and attach a copy of your NHS application in order that your School is aware of the project.

The document ***Guidelines for obtaining ethics approval*** will help you complete this form. It is available from the Cardiff Met website.

Once you have completed the form, sign the declaration and forward to your School Research Ethics Committee.

PLEASE NOTE:
Participant recruitment or data collection must not commence until ethics approval has been obtained.

PART ONE

Name of applicant:	Gareth Picknell
Supervisor (if student project):	Prof. Stephen Mellalieu
School:	Cardiff School of Sport
Student number (if applicable):	St20106805
Programme enrolled on (if applicable):	Research PhD (Sport) – Part Time
Project Title:	An investigation into the effectiveness of a reflective practice intervention for facilitating positive change to health professionals' practice behaviours.
Expected Start Date:	05/01/2016
Approximate Duration:	22 weeks
Funding Body (if applicable):	N/A
Other researcher(s) working on the project:	Dr Brendan Cropley and Prof Sheldon Hanton (Cardiff Met) – PhD Supervisors
Will the study involve NHS patients or staff?	No
Will the study involve taking samples of human origin from participants?	No

In no more than 150 words, give a non technical summary of the project
The proposed research study will investigate the effectiveness of a reflective practice intervention aimed at improving health practitioners' ability to reflect and the affects this has on their practice behaviours. Presently, there is a wealth of literature that supports the benefits of reflective practice; namely, that it facilitates increased learning from experiences, identification of personal and professional strengths and areas for improvement, acquisition of new knowledge and skills, and encouragement of self-motivation and self-directed learning. However, a limitation of these reported

CARDIFF METROPOLITAN UNIVERSITY
APPLICATION FOR ETHICS APPROVAL

benefits are that they are primarily grounded on theoretical debate and anecdotal accounts. This has resulted in a paradox for advocates who contend that reflective practice "should work", based on logical theoretical reasoning, yet are unable to conclusively demonstrate whether it "actually works", with empirically supportive evidence. As such, the proposed research study will utilise an experimental research design with the intention of enhancing the domain's confidence regarding cause and effect relationships between support programmes (i.e., reflective practice interventions) and measurable outcomes (i.e., enhanced reflective skills).

Does your project fall entirely within one of the following categories:	
Paper based, involving only documents in the public domain	No
Laboratory based, not involving human participants or human tissue samples	No
Practice based not involving human participants (eg curatorial, practice audit)	No
Compulsory projects in professional practice (eg Initial Teacher Education)	No
If you have answered YES to any of these questions, no further information regarding your project is required. If you have answered NO to all of these questions, you must complete Part 2 of this form	

DECLARATION: **I confirm that this project conforms with the Cardiff Met Research Governance Framework**	
Signature: 	Date: 01/12/2015
FOR STUDENT PROJECTS ONLY	
Name of supervisor: Stephen Mellalieu	Date: 01/12/2015
Signature of supervisor: 	

CARDIFF METROPOLITAN UNIVERSITY
APPLICATION FOR ETHICS APPROVAL

Research Ethics Committee use only	
Decision reached:	Project approved ☑ Project approved in principle ☐ Decision deferred ☐ Project not approved ☐ Project rejected ☐
Project reference number: 15/12/02R	
Name: Dr. Kieron Kingston	Date: 06/12/2015
Signature: *K. Kingston*	
Details of any conditions upon which approval is dependant: Click here to enter text.	

APPENDIX 8:

Consenting Authorities Consent Form

CARDIFF METROPOLITAN UNIVERSITY
APPLICATION FOR ETHICS APPROVAL

CONSENTING AUTHORITY RESEARCH STUDY CONSENT FORM

Title of Project:
An investigation into the effectiveness of a reflective practice intervention for facilitating positive change to health professionals' practice behaviours.

Name of Researcher: Gareth Picknell

Participant to complete this section:

Please initial each box.

1. I confirm that I have read and understand the information sheet for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. ☑
2. I understand that participants who consent to be a part of the study will remain anonymous and data collected as a specific part of this research can only be shared when the participants' identities have been masked. ☑
3. I confirm my agreement that the research can be conducted with members of staff operating within the Physical Readiness Centres. ☑

Dr Mouza Al Shehhi
Name of Consenting Authority (Print)

20/12/2015
Date

CEO of 3Dimensions LLC
Position of Consenting Authority

20 DEC 2015

Signature of Consenting Authority

20/12/2015
Date

** When completed, 1 copy for participant & 1 copy for researcher site file*

APPENDIX 9:

Social Validation Interview Preparation Booklet

An investigation into the effectiveness of a reflective practice intervention for facilitating positive change to health professionals' practice behaviours

INTERVIEW PREPARATION BOOKLET

Thank you for agreeing to participate in this study and subsequent interview that I will be conducting as part of the data collection for the second study of my Ph.D. research. This booklet contains information that will introduce you to topics you will be asked to discuss during the upcoming interview. It is intended to help you think about your practices and the way they may have changed over the period of the study. It is also aimed at promoting thought towards the influence that developing reflective skills may have had on your applied work, as well as on both personal and professional development. Hopefully this booklet will help to prepare you to discuss your experiences and offer any thoughts that you have concerning issues pertinent to the study.

Over the past few weeks you have engaged in a rigorous process of implementing more stringent methods of reflective practice into your applied work. Initially you were not guided in any particular way and given the opportunity to explore your consultancy experiences in a relatively unstructured manner. Following formal tutorials, mentoring and feedback on your reflections you then instigated a reflective approach that questioned you more specifically in attempts to help you consider the experiences you have had, the things that could be learnt from the experience, and how this learning could be implemented to improve practice.

The interview will look to expand upon the quantitative data that was collected from you, and allow you to examine your experiences and how these many have influenced your professional practice behaviours as a direct result of participation.

Background Information

Whilst the value of reflective practice for the development of service-delivery effectiveness has been widely reported, much of the evidence upon which these claims is based is anecdotal in nature. Additionally, this research has largely failed to assess direct changes in factors associated with effective practice. In an attempt to address these issues, this study aimed to empirically examine the impact of a reflective practice intervention on the enhancement of reflective skills and subsequent developments in positive practice behaviours (e.g., communication skills).

Interview Format

During the interview you will be asked to discuss a number of issues relating to your philosophy as a dietitian, your reflective activity and the way this may have developed, and the influence that reflective practice has on your professional practice. Importantly, all information discussed will be about you and your practice during the period of this study. You will not be asked to talk in any detail about specific client issues, and in this sense

confidentiality will be upheld throughout. In preparation for the interview I would like you to think about the following points (please feel free to make any notes under each section):

- What kind of services have you provided during the study period?
- How successful do you think the services have been?
- Did the effectiveness of the service you provided improve at any stage during the period of the study?
- What factors have had an influence on the quality of the service that you have provided?
- Are there any particular aspects of your service delivery that you thought were particularly beneficial?
- Are there any particular aspects of your service delivery that you thought were potential weaknesses and would consequently change?
- How beneficial did you find the use of reflective practice, and did this change over the period of the study?
- What problems did you have with reflecting on your experiences, and how may these have changed?
- What benefits did you gain from engaging in reflective practice, and how may these have changed over the period of the study?
- What factors had an influence on the way in which you reflected over the period of the study?
- Has the development of your reflective skills directly influenced the way in which you practice and the effectiveness of this practice? If so, how?

APPENDIX 10:

Exemplar Social Validation Transcript

Social Validation Interview Transcript

Participant C

INTERVIEWER (IR): So during the first section of this interview, I would like to start by giving you the opportunity to provide an overview of the type of work that you've been completing over the past few months. Could you outline the types of service that you provide?

INTERVIEWEE (IE): I work for the UAE Armed Forces and part of my role in this job is to provide dietetic services to military recruits with a variety of diet related issues. These issues can range from anything such as diabetes, food allergies, individuals who have had bariatric surgery et cetera. Most of the work that I do is to support individuals who have been automatically placed on a weight management programme based on their initial weight of when they joined national service.

IR: Do you feel there are certain influencing factors that guide the work that you do?

IE: The process of working with clients has been clearly laid out from the training received from our head of department. We have a variety of care plans, which provide us with a stage by stage model of how to work with various different clients based on the issues that they present. This type of model of working with clients is also very similar to the types of processes that I was exposed to as part of my undergraduate education.

IR: Do you feel that you have a specific philosophy that informs the work you do?

IE: I have never really thought of what my professional philosophy is. However, I am always keen to help individuals and allow them to seek the type of support that they need in order to improve their health status. I see my role as a dietician as somebody who is able to use their knowledge and expertise of nutrition related information to help guide individuals towards their health goals.

IR: I think you alluded to it earlier but prior to your involvement in this study was there any sort of supervision you were receiving?

IE: Prior to the training, I received from you I was receiving supervision from my senior line manager who is a clinical dietician and registered with the British Dietetics Association. The training typically involves learning about new information within the literature as well as role-play whereby my supervisor helps me to deal with issues that I face.

IR: Okay, so considering the services that you provide, overall how successful do you think you have been in your role, and is there any evidence to support your answer?

IE: I feel that the service I provide is relatively effective and how I determine this is based on the rapport that I am able to develop with the cadets and how willing they are to return to consultations with me so that we can work together to update their goal setting plans. In addition, the weight loss and anthropometric measures that we use are largely positive and gives me an indication that what we're doing within our sessions is helping them to lose the weight that they desire.

IR: How do you feel your clients would respond to this question?

IE: I think based on the results that I present to the clients I think they would suggest that what we were doing is successful. The feedback of losing weight is always met with positive emotions.

IR: Thank you for that information! I think this brings us to a point where we can move on to talking more specifically about your reflective practices, and how they may have influenced the effectiveness of your work. I would like us to talk about your reflective practices prior to the training and support that you received during the period of this study. Do you believe you were using reflective practice?

IE: Having learnt about reflective practice I would suggest that I wasn't really using it at all. As part of writing up my notes at the end of the session, I would often think about what I had discussed with my clients. Rarely did I dwell on whether a session was positive or negative. I mean I guess the session would be deemed as positive if the individual decided to return for a follow-up consultation. That said when my supervisor, Miss Deborah, met with me once a week to discuss my sessions she would always ask whether there were any cases that had caused me concern. During these meetings we may have discussed some of the issues and perhaps gone through "what if" type scenarios to see how I may have dealt with those certain situations slightly differently. It was difficult for me to think of these types of scenarios on the spot when Deborah asked me. And because of this, I think maybe I was struggling to recall specific details of the sessions so it almost felt like my reflections or my thinking about a session were much more general as opposed to being much more specific.

IR: Is there anything else that you would like to add about your experience of reflective practice prior to your involvement in the study?

IE: No, nothing that I can think of.

IR: Ok, I would like us to move on to specifically considering the impact of the formal training and support you were provided with and how this influenced your reflective practices and consequently how your practice may have changed as a direct result of this. With specific emphasis on the education and support you received, how did your reflections change as a consequence of this training?

IE: Once we were encouraged to enrol on this research study, the way in which I reflected became much more manageable and specific, as it required me to reflect on my consultations within a relatively short space of time. I felt that the focus of my reflections definitely changed once introduced to the concept of reflective practice. Rather than thinking about whether a session was just good or bad I actually began to think about why the session was good or why it was bad. What were the much more minute details

that contributed to the overall outcome of the session? I don't think I had any particular problems using this method of reflection. Of course it took up perhaps a bit more of my time however I think by reflecting on a session in the past actually helped me to organise my future sessions a lot more efficiently.

IR: Do you know if the focus and use of reflection change throughout the training, as a result of the mentoring and support you received?

IE: I think that by structuring my reflections helped me become more organised. As suggested earlier by reflecting on the session gave me a bit more focus towards how I should be dealing with clients in the future and meant that my planning of future sessions became just more efficient and I think that in doing so I was saving time in that regard. Being introduced to different models and modes of reflecting I think that I was able to adapt how are reflected in a way that was much more meaningful to my own experiences. To begin with, I rigidly stuck with a reflective model. However, with the different elements of the training coming into play I felt that how I reflected became much more flexible and adaptable. I didn't feel like I needed to stick rigidly to a reflective model but rather that I needed to think in a way that was meaningful to the type of work that I was doing. Reflecting in various different ways whether as part of the group sessions or on my own it didn't really matter as long as I went through the process of reviewing my sessions and trying to draw out some meaning that was useful for the future. I keep using the term that the focus of my reflections changed, I am not sure if this is the correct term but what I mean by that is I just gave specific details much more attention. In doing so, I was better able to understand what was really going on with the clients I was working with that had resulted to them coming to see me in the first place. So I would suggest that I analysed my sessions a lot more and focusing on the more minute details was what really helped me to understand what was really going on.

IR: Thinking back to the types of reflective practice training that you received. Were there elements of the training that were more beneficial than others?

IE: I found every aspect of the reflective practice training very useful but for many different reasons. As part of my education, I have been introduced to the concept of reflective practice but it has more just been, a concept that we were expected to use as opposed to something that we necessarily needed to receive training in. Without the specific training, I guess I lacked confidence in using reflective practice correctly. So the educational part at the outset was really useful for helping me understand that there was no right or wrong way to reflect but rather that going through a process would allow me to take my reflections in their own direction. Once I began to receive feedback from you or even as part of the group sessions with the other dieticians, I gained more confidence in realising that what I was doing was not necessarily wrong but that it may well have just been different to what other people were doing. However because it was meaningful to me it was relevant. If you were to ask me what was my favourite element of that reflective practice training I think it would be the group sessions with the other dieticians as this allowed us to explore each other's issues but from various different angles so that it gave us an insight into how each other interpret situations and how we deal with those. It was really comforting to get different perspectives on how things could be viewed.

IR: Okay, so to recap, how did things change as a direct result of the training and support you received, with specific reference to your reflective practices?

IE: I think I became a more competent reflective practitioner. I don't believe that there is a perfect way to reflect or that there is indeed a model that meets all the needs of the person doing reflective practice; however, I believe that how I reflected had a positive impact on my role as a practitioner and therefore it worked for me. I feel that now I am better able to judge my effectiveness rather than focusing on whether a session was good or bad or indifferent. I mean, if a session in general went quite well that doesn't mean that there aren't things within that session that I couldn’t learn from or improve for the future. Knowing that means that I hope that I'm always moving in the right direction towards becoming not just only a competent reflective practitioner but indeed a more effective dietician.

IR: Thanks for that. Ok, so we've talked about your reflective practices, the training you received and the impact this had on the way in which you were able to reflect. I would like us now to focus on the way in which the development of your reflective skills may have impacted on your effectiveness. Do you feel that your practice changed in any ways over the period of this study?

IE: I feel that I am a more empathetic dietician. I feel that because I've taken the time to understand client's issues from a more detailed perspective or from an alternative perspective that I am much better able to tolerate, sorry I don't mean tolerate, I'm much more better able to understand the seriousness of the issues that they may be facing. If I was to use a specific term, I would suggest that I'm a much more thoughtful practitioner. I think with the counselling training that I have also received as a dietician I would like to think that I would become a more empathetic practitioner however, I guess like anything until you put something into practice and think about whether it is successful or not changes aren't likely to occur. So engaging in the process of reflections with the clients that worked well I think it actually made me realise that the skills that I was learning around, learning about sorry, weren't always being translated into practice, but it took reflecting on my practice to help me realise this.

IR: What benefits do you perceive that you've gained from using reflective practice? What have you learnt through reflective practice?

IE: More focus on myself. That's it in a nutshell.

IR: Can you tell me what influence has the development in your reflective skills had on the development of your consultant characteristics associated with effectiveness?

IE: My personal skills. Yeah for me that has been the biggest improvement. Recognising that as the expert in the room, I can affect how somebody behaves. But I can only do that once I understand how my approach affects the client. So reviewing my sessions has allowed me to look at that under the microscope and as I say, I feel that I am more fluid

or flexible. Regarding communication skills, well I think the two things go hand in hand so whilst I'm able to adapt the way I'm interacting with the client, implicitly I'm changing the way that I communicate with the individual. Perhaps I am using better quality non-verbal communication highlight to the individual that I am there to listen to their issues.

IR: Has developing your reflective skills enabled you to provide a service that achieved, or worked towards, your practice goals?

IE: I am not sure any more than usual. At the beginning I said one of my strengths was my attention to detail so with any client that I work with I have always been very specific about the goals that we're working towards and in the main I think that where the client is able to control their circumstances I would say that the majority of their goals have been met. So I don't feel that the training programme over the last couple of months has necessarily altered my ability to achieve goals.

IR: That information has allowed me a more in-depth understanding of the way in which the training of reflective skills is linked with improvements to effective practice, particularly when considering characteristics associated with effective practice. Are you able to tell me what the biggest influencing factor has been on the way in which your effectiveness has developed over the period of the study?

IE: I think realising the importance of evaluating our practice as dieticians in a meaningful way that is specific to our own needs. Reflective practice brings this idea to light and although it takes time to do it is something that needs to be incorporated into our professional development or realising that reflective practice isn't a chore but rather a skill that is necessary to be an effective practitioner has been the biggest influencing factor for me personally. I think empathising with my clients and actually listening to their issues rather than trying to be a problem solver for them has been the thing that has changed change mostly about my practice. In the past I wanted to demonstrate my knowledge and understanding of nutrition related information so that the clients perceive

me as being the expert and therefore would more likely to buy into what I was trying to say. However realising that in fact most clients are fully aware of the decisions they need to make but rather they need support and guidance in terms of behaviours that are perceived as more positive. This is something, which I think has been the focus of my practice following reflective practice. Reflective practice has helped me realise that in order to be more empathetic I perhaps need to listen more to what they are saying instead of interjecting with my knowledge.

IR: Do you believe that receiving formal training and support in reflective practice allowed you to address areas of your practice that require improvement?

IE: I think so yes however without training in reflective practice this may have not been something that I was perhaps aware of so I guess from that point of view and the idea of using reflective practice is that it contributed to developing my own personal self-awareness and what's important from me as a professional dietician.

IR: Thinking into the future, how do you feel your reflective practice will change now as a direct result of participating in the study?

IE: I think I'll do it more not necessarily because I feel that I have to but because I now have confidence that it works for me and as somebody who was always strived to improve their competence as a dietician the fact that something works for me, mental, I'm more likely to continue using in the future. In terms of how my reflections might change or how useful is reflective practice, I guess like any other skill I will become more autonomous in my ability to think about practice and to gain knowledge that is useful for the future.

IR: Based on your experiences what advice would you give to trainee and professional practitioners in terms of implementing and gaining benefits from reflective practice?

IE: Stick at it. Find out what works for you. Find out about yourself and what types of

questions you need to ask in order to tease out the key information that is likely to help you better understand the consultation setting. Like I said before I don't think there is a perfect practitioner or reflective practitioner or a perfect reflective practice model. I think it comes down to the individual to realise what works for them and to question themselves in a way that is most meaningful for their practice. If they are able to realise this then the likelihood is that they are going to buy into the idea of reflective practice because the worst thing that can happen for a trainee practitioner is that they don't believe something works them just because they haven't found out the way to use it in a way that is best suited to their needs.

IR: So this just about wraps up the interview, however, before we finish, let me ask you some final questions. How satisfied were you with the intervention and support you received during the study? Why?

IE: To be honest I was a bit reluctant to be involved in the training programme however having received the support from you and being involved in all of the different elements of the reflective practice training programme I have been extremely happy with the support that I have received. No stone was left unturned and the training programme was comprehensive. It followed a logical process from getting us to understand what reflective practice was and then engaging in more complex modes of reflecting.

IR: Would you regard changes to your reflective practice and professional practice as significant as a result of participation?

IE: Definitely. I would definitely consider myself a more able reflective practitioner. And the changes that have been brought about in terms of my professional practice could only have been achieved by investing time in the reflective process.

IR: During the study itself, were you coerced at any time in terms of your practice and behaviours beyond the scope of the study?

IE: No, I don't believe so. Of course, there were times where we discussed alternative approaches to dealing with situations. I am not aware if these were trying to coerce me in any way. The way that I perceive these alternative perspectives was that I was just looking at things differently but there was never the sense that I had to act on any of these behaviours.

IR: How would you rate your experience as a participant?

IE: I enjoyed it. I love learning about my profession. I love working with the other dieticians to try and gain different perspectives on how to deal with the number of issues that clients present to us and being able to discuss these in a relatively informal scenario was thoroughly enjoyable.

IR: How did you think the interview went?

IE: The interview was fine. Sometimes it is difficult to verbalise what I experienced by engaging in reflective practice. And as a result, it sometimes felt like I was repeating myself throughout the various different questions that you asked.

IR: Did you feel that you could tell your story fully?

IE: Absolutely, yes

IR: Did I lead you or influence your responses in any way?

IE: Not at all

IR: Have you any comments or suggestions about the interview itself?

IE: No, I think we've covered everything.

IR: Okay, so that brings us to the end of the interview. Thanks ever so much for taking time to participate in the study and the interview itself.

End of Interview

APPENDIX 11:

Mindful Attention Awareness Scale

Day-to-Day Experiences

Instructions: Below is a collection of statements about your everyday experience. Using the 1-6 scale below, please indicate how frequently or infrequently you currently have each experience. Please answer according to what *really reflects* your experience rather than what you think your experience should be. Please treat each item separately from every other item.

1	2	3	4	5	6
Almost Always	Very Frequently	Somewhat Frequently	Somewhat Infrequently	Very Infrequently	Almost Never

I could be experiencing some emotion and not be conscious of it until some time later.	1	2	3	4	5	6
I break or spill things because of carelessness, not paying attention, or thinking of something else.	1	2	3	4	5	6
I find it difficult to stay focused on what's happening in the present.	1	2	3	4	5	6
I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.	1	2	3	4	5	6
I tend not to notice feelings of physical tension or discomfort until they really grab my attention.	1	2	3	4	5	6
I forget a person's name almost as soon as I've been told it for the first time.	1	2	3	4	5	6
It seems I am "running on automatic," without much awareness of what I'm doing.	1	2	3	4	5	6
I rush through activities without being really attentive to them.	1	2	3	4	5	6
I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there.	1	2	3	4	5	6
I do jobs or tasks automatically, without being aware of what I'm doing.	1	2	3	4	5	6
I find myself listening to someone with one ear, doing something else at the same time.	1	2	3	4	5	6

1 Almost Always	2 Very Frequently	3 Somewhat Frequently	4 Somewhat Infrequently	5 Very Infrequently	6 Almost Never

I drive places on 'automatic pilot' and then wonder why I went there.	1	2	3	4	5	6
I find myself preoccupied with the future or the past.	1	2	3	4	5	6
I find myself doing things without paying attention.	1	2	3	4	5	6
I snack without being aware that I'm eating.	1	2	3	4	5	6

APPENDIX 12:

Mindful Eating Questionnaire

Mindful Eating Questionnaire

Questions		Never / Rarely	Sometimes	Often	Usually / Always
1. I eat so quickly that I don't taste what I'm eating.					
2. When I eat at "all you can eat" buffets, I tend to overeat.	☐ I don't eat at buffets				
3. At a party where there is a lot of good food, I notice when it makes me want to eat more food than I should.					
4. I recognize when food advertisements make me want to eat.	☐ Food ads never make me want to eat				
5. When a restaurant portion is too large, I stop eating when I'm full.					
6. My thoughts tend to wander while I am eating.					
7. When I'm eating one of my favorite foods, I don't recognize when I've had enough					
8. I notice when just going into a movie theater makes me want to eat candy or popcorn	☐ I never eat candy or popcorn				
9. If it doesn't cost much more, I get the larger size food or drink regardless of how hungry I feel					
10. I notice when there are subtle flavors in the foods I eat					
11. If there are leftovers that I like, I take a second helping even though I'm full					
12. When eating a pleasant meal, I notice if it makes me feel relaxed.					
13. I snack without noticing that I am eating.					
14. When I eat a big meal, I notice if it makes me feel heavy or sluggish.					

15. I stop eating when I'm full even when eating something I love.					
16. I appreciate the way my food looks on my plate.					
17. When I'm feeling stressed during work, I'll go find something to eat.	☐ I don't work				
18. If there's good food at a party, I'll continue eating even after I'm full.					
19. When I'm sad, I eat to feel better.					
20. I notice when foods and drinks are too sweet.					
21. Before I eat I take a moment to appreciate the colors and smells of my food.					
22. I taste every bite of food that I eat.					
23. I recognize when I'm eating and not hungry.	☐ I never eat when I'm not hungry				
24. I notice when I'm eating from a dish of candy just because it's there.					
25. When I'm at a restaurant, I can tell when the portion I've been served is too large for me.					
26. I notice when the food I eat affects my emotional state.					
27. I have trouble not eating ice cream, cookies, or chips if they're around the house.					
28. I think about things I need to do while I am eating.					

Mindful Eating Questionnaire Scoring

	Question	Response	
Awareness	10	___	
	12	___	
	16	___	
	21	___	
	20	___	
	22	___	
	26	___	
	Total	___	**score = sum ÷ no. of items answered**
Distraction	1*	___	
	6*	___	
	28*	___	
	Total	___	**score = sum ÷ no. of items answered**
Disinhibition	2*#	___	
	5	___	
	7*	___	
	9*	___	
	11*	___	
	15	___	
	18*	___	
	25	___	
	Total	___	**score = sum ÷ no. of items answered**
Emotional	13*	___	
	17*#	___	
	19*	___	
	27*	___	
	Total	___	**score = sum ÷ no. of items answered**
External	3	___	
	4#	___	
	8#	___	
	14	___	
	23#	___	
	24	___	
	Total	___	**score = sum ÷ no. of items answered**

Summary Score = sum of subscale scores average of each subscale scores ÷ 5

***Reverse before scoring: (1=4, 2=3, 3=2, 4=1)**
#Do not count in numerator or denominator if the "not applicable" option is selected

APPENDIX 13:

Study 3 Ethical Approval Confirmation

CARDIFF METROPOLITAN UNIVERSITY
APPLICATION FOR ETHICS APPROVAL

When undertaking a research or enterprise project, Cardiff Met staff and students are obliged to complete this form in order that the ethics implications of that project may be considered.

If the project requires ethics approval from an external agency such as the NHS or MoD, you will not need to seek additional ethics approval from Cardiff Met. You should however complete Part One of this form and attach a copy of your NHS application in order that your School is aware of the project.

The document ***Guidelines for obtaining ethics approval*** will help you complete this form. It is available from the Cardiff Met website.

Once you have completed the form, sign the declaration and forward to your School Research Ethics Committee.

PLEASE NOTE:
Participant recruitment or data collection must not commence until ethics approval has been obtained.

PART ONE

Name of applicant:	Gareth Picknell
Supervisor (if student project):	Prof. Stephen Mellalieu
School:	Cardiff School of Sport
Student number (if applicable):	St20106805
Programme enrolled on (if applicable):	Research PhD (Sport) – Part Time
Project Title:	An investigation into the effectiveness of a reflective practice intervention for facilitating positive behaviour change among health support seeking clients.
Expected Start Date:	18/06/2016
Approximate Duration:	16 weeks
Funding Body (if applicable):	N/A
Other researcher(s) working on the project:	Dr Brendan Cropley and Prof Sheldon Hanton (Cardiff Met) – PhD Supervisors
Will the study involve NHS patients or staff?	No
Will the study involve taking samples of human origin from participants?	No

In no more than 150 words, give a non technical summary of the project
The proposed research study will investigate the effectiveness of a reflective practice intervention on the overall health status of conscripted National Service recruits utilizing bespoke health-support services. The purpose of the intervention will be to enhance individual's capabilities for examining their thoughts, decisions and behaviours, and through critical reflections, explore alternative courses of action indicative of healthier lifestyle choices. There is a wealth of literature that

CARDIFF METROPOLITAN UNIVERSITY
APPLICATION FOR ETHICS APPROVAL

supports the benefits of reflective practice; namely, that it facilitates increased learning from experiences, identification of personal and professional strengths and areas for improvement, acquisition of new knowledge and skills, and encouragement of self-motivation and self-directed learning. However, much of these benefits are attributed to practitioners delivering support services, whereas less is known about whether reflective practice has any direct usefulness for individuals receiving such services. The aim of this research study is to contribute to the much needed empirical evidence-base required for enhancing the wider audiences' confidence that reflective practice not only has benefits for practitioners but also contributes to the positive behaviour change of health support-seeking clients.

Does your project fall entirely within one of the following categories:	
Paper based, involving only documents in the public domain	No
Laboratory based, not involving human participants or human tissue samples	No
Practice based not involving human participants (eg curatorial, practice audit)	No
Compulsory projects in professional practice (eg Initial Teacher Education)	No
If you have answered YES to any of these questions, no further information regarding your project is required. If you have answered NO to all of these questions, you must complete Part 2 of this form	

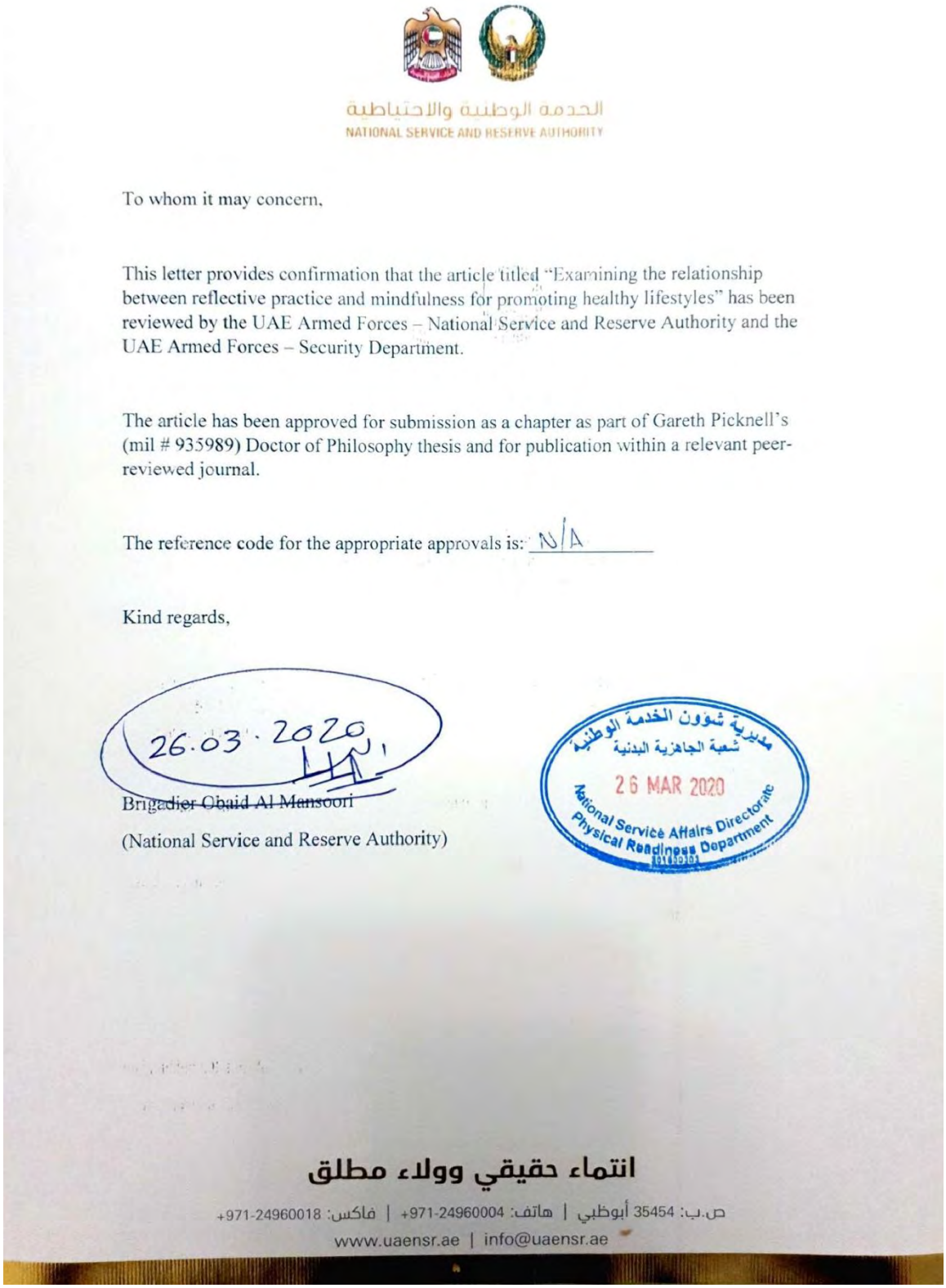
DECLARATION: **I confirm that this project conforms with the Cardiff Met Research Governance Framework**	
Signature: 	Date: 15/05/2016
FOR STUDENT PROJECTS ONLY	
Name of supervisor: **Prof. Stephen Mellalieu**	Date: 15/05/2016
Signature of supervisor: 	

CARDIFF METROPOLITAN UNIVERSITY
APPLICATION FOR ETHICS APPROVAL

Research Ethics Committee use only	
Decision reached:	Project approved ☑ Project approved in principle ☐ Decision deferred ☐ Project not approved ☐ Project rejected ☐
Project reference number: 16/7/01R	
Name: Dr. Kieran Kingston	Date: 16/06/2016
Signature: *K. Kingston*	
Details of any conditions upon which approval is dependant: Click here to enter text.	

APPENDIX 14:

Study 3 Security Clearance (G. H. Q. Armed Forces)



الخدمة الوطنية والاحتياطية
NATIONAL SERVICE AND RESERVE AUTHORITY

To whom it may concern,

This letter provides confirmation that the article titled "Examining the relationship between reflective practice and mindfulness for promoting healthy lifestyles" has been reviewed by the UAE Armed Forces – National Service and Reserve Authority and the UAE Armed Forces – Security Department.

The article has been approved for submission as a chapter as part of Gareth Picknell's (mil # 935989) Doctor of Philosophy thesis and for publication within a relevant peer-reviewed journal.

The reference code for the appropriate approvals is: N/A

Kind regards,

26.03.2020

Brigadier Obaid Al Mansoori

(National Service and Reserve Authority)

مديرية شؤون الخدمة الوطنية
شعبة الجاهزية البدنية
26 MAR 2020
National Service Affairs Directorate
Physical Readiness Department

انتماء حقيقي وولاء مطلق

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