Post-Traumatic Growth in Military Personnel with Suspected Mild Traumatic Brain Injury

A portfolio of academic, clinical and research work:

Volume One

By

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(Clinical Psychology)

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Introduction to Volume One of the Portfolio

This portfolio consists of two volumes, both containing a selection of work completed during the Doctorate of Psychology (PsychD) clinical training course.

This document is Volume One of the portfolio. This volume contains an academic dossier, a clinical dossier and a research dossier. The academic dossier comprises two essays, three Problem Based Learning (PBL) reflective accounts and two summaries of Case Discussion Group (CDG) process accounts. The clinical dossier comprises summaries of the placements undertaken and four summaries relating to the case reports presented in Volume Two. The research dossier comprises a Service Related Research Project (SRRP) carried out in Year One, an abstract of a qualitative research project conducted in Year One, a research log and a Major Research Project (MRP) carried out in Year Three.
Academic Dossier
Critically discuss one model for the assessment and treatment of people given a diagnosis of personality disorder; make specific reference to the perspectives of service users

Adult Mental Health

December 2007
Year One
Critically discuss one model for the assessment and treatment of people given a diagnosis of personality disorder, make specific reference to the perspectives of service users

Introduction

The Diagnostic and Statistical Manual (4th Edn.) (DSM-IV) of the American Psychiatric Association [APA], 1994) defines a Personality Disorder (PD) as:

an enduring pattern of inner experience and behaviour that deviates markedly from the expectations of the individual's culture, is pervasive and inflexible, has an onset in adolescence or early adulthood, is stable over time, and leads to distress or impairment.

The National Institute of Mental Health in England's (NIMHE) 2003 publication, 'Personality Disorder: No longer a diagnosis of exclusion', notes that the high level of demand that this client group places upon services is often met with a professional team that feel ill-equipped to work with them. Specific skills, training and resources are required to provide an adequate PD service and, within general mental health services there is often an undercurrent of professional discomfort associated with working with clients diagnosed with PD. Indeed, as an inexperienced support worker in my first clinical position following the completion of my undergraduate psychology degree, I recall lurching from a deep sense of empathy to powerful feelings of irritation in response to the behaviour of a young female client who, I now realise, would almost definitely have met DSM-IV diagnostic criteria for Borderline Personality Disorder (BPD). These difficult interactions are hugely damaging for therapeutic relationships and clients report a sense of being 'the patients psychiatrists dislike' (NIMHE, 2003, p. 20). Some report being directly referred to as 'time-wasters, difficult, manipulative, bed-wasters or attention-seeking' (NIMHE, 2003, p. 20). For service-users to experience this level of misunderstanding and hostility from mental health professionals is clearly unacceptable and highlights the need for specialist PD services.

A number of models exist for the assessment and treatment of PD, the dominant option being Dialectical Behavioural Therapy (DBT), for which a
substantial evidence-base exists (Bohus et al., 2000, 2004; Koons et al., 2001; Linehan et al., 1991; Linehan et al., 1993; Linehan et al., 1994; NHS Executive, 1996; Van den Bosch et al., 2005; Verheul et al., 2003). I do not dispute the value of an intervention that appears to be highly effective for a specific client group, but I am dubious as to whether this justifies its blanket application to all clients given a diagnosis of (B)PD. As clinicians, either training or qualified, it is our responsibility to take into account, and to have respect for, the individualised way that every client experiences their psychological distress and, thus, to be able to offer a range of treatment choices so as to meet individual needs. Service-users given a diagnosis of PD have cited the availability of a range of treatment options as important and have referred to rigid adherence to a therapeutic model, regardless of effectiveness, as particularly unhelpful (NIMHE, 2003). As Feigenbaum (2007) states:

Is one treatment more effective than others for the treatment of BPD? Are there common factors across effective treatments for BPD? Given the multifaceted and highly diverse presentation of BPD we might consider which therapy is most effective for which presentation?

(p. 65)

As a Clinical PsychD trainee, it is perhaps unsurprising that I have strong beliefs regarding the treatment of clients as individuals with unique experiences within the diagnostic category into which they are placed and in their subsequent right to treatment choice. It is these convictions that have informed my decision to focus on the Therapeutic Community (TC) model for the assessment and treatment of individuals given a diagnosis of PD, as an alternative approach for those who cannot sustain outpatient psychotherapy, e.g. DBT.

In this essay, I will give an overview of the origins of the TC model. I will go on to discuss the evidence-base for the efficacy of the model as an intervention for PD and to consider the extent to which it corresponds with the aspects of PD services identified as useful by service-users. Throughout my discussion, I will make specific reference to a TC local to the NHS Trust in which I am currently undertaking my adult mental health placement, The Henderson
Hospital in Sutton. It is thus pertinent to briefly describe the current status of this unit.

Following the recommendations of the Reed report (Department of Health and Home Office, 1994), additional Henderson-sibling units were established in Birmingham (Main House) and Crewe (Webb House) (Norton, 2003). Until 2005, these units were funded directly by the Department of Health National Specialist Commissioning Advisory Group (NSCAG). However, this responsibility has now been passed to local Primary Care Trusts (PCTs), the majority of which are struggling to finance mandatory new services (e.g. Crisis Teams, Early Intervention in Psychosis Teams, Assertive Outreach Teams). TCs have not been prioritised for funding, and Webb House in Crewe has already been obliged to close its residential treatment service. Writing in March 2007, Consultant Psychiatrist in Psychotherapy at the Henderson Hospital, John Stevens, stated that:

...international renowned centres of excellence in the effective and evidence-based treatment of people with personality disorders such as Henderson Hospital, currently celebrating its 60th birthday, and the Cassel Hospital, after 85 years of service, now have empty beds and are staring closure in the face, followed by the dispersal and loss of their respective expert teams.

(p.21)

Thus, this essay is written in the context of the impending closure of the Henderson Hospital, which will naturally lead me to conclude my essay with a consideration of the implications of this outcome for the future of specialist PD services.

History of Therapeutic Communities
Historically, the term Therapeutic Community has been used to refer to settings relatively disparate in terms of their origin and mode of operation, although sharing a number of key features based upon collective responsibility, citizenship and empowerment (Kennard, 1998). In the UK, the term ‘Therapeutic Community’ first appeared in the work of psychoanalyst Tom Main in 1946 (as cited in Kennard, 1998), when he was appointed the Director of the Cassel Hospital. The Cassel Hospital developed to epitomise the type of TC referred to by Main, characterised by long-term residential
intensive individual and group psychoanalytic psychotherapy and a
determined program of social rehabilitation. The high financial demands of
this approach were justified by the importance of the therapeutic milieu to a
client group whose capacity to function effectively in interpersonal
relationships was considered to have been undermined by developmental
deficits.

A more therapeutically integrative TC model later developed with the work of
Maxwell Jones at the Henderson Hospital and was referred to by Clark (1965,
as cited in Kennard, 1998) as the ‘Therapeutic Community Proper’. Rooted in
a group-based view of the social origins and maintenance of psychological
distress, this model was characterised by the democratic sharing of power by
all members of the community - including both staff and clients - in decisions
regarding the running of the community and the treatment of the residents. In
an environment where analytic, behavioural, educational and humanistic
principles co-existed, clients became ‘auxiliary therapists’ and formal
hierarchies were dismantled as far as possible (Kennard, 1998).

Both the Cassel and Henderson hospitals were somewhat different to the
stratified, peer-led organisations that developed concurrently in the United
States under the same label: ‘They are communities and they are therapeutic,
but they do not pretend to be therapeutic communities as described by
Maxwell Jones’ (Clark, 1977, as cited in Kennard, 1998, p. 21). Although
alternative models exist (e.g. concept-based TCs for the rehabilitation of
clients with substance misuse issues), contemporary TCs in the UK generally
remain faithful to the Maxwell Jones (or ‘democratic’) model and are most
frequently used as an intervention with individuals given a diagnosis of severe
or borderline personality disorder.

Rapoport’s (1960, as cited in Kennard, 1998) publication, ‘Community As
Doctor’, was based entirely on an examination of the Henderson Hospital and
identified four important themes that are now considered to be synonymous
with TCs of the democratic analytic type:

1) ‘Democratization’: every member of the community (i.e. all residents / patients /
   clients and staff) should share equally in the exercise of power in decision making
   about community affairs.
2) 'Permissiveness': all members should tolerate from one another a wide degree of behaviour that might be distressing or seem deviant by ordinary standards.

3) 'Communalism': there should be tight-knit, intimate sets of relationships, with sharing of amenities, use of first names and free communication.

4) 'Reality confrontation': patients should be continuously presented with interpretations of their behaviour as it is seen by others in order to counteract their tendency to distort, deny or withdraw from their difficulties in getting on with others.

(Kennard, 1998, p. 63)

Therapeutic Communities for Clients Diagnosed with Personality Disorder

The Reed Report (Department of Health and Home Office, 1994) concludes:

Studies of therapeutic community treatment have shown the most promising results of any form of treatment of psychopathy (personality disorder) in terms of psychological and behavioural changes during treatment, reduction of violent incidents in treatment settings and significant improvements following treatment.

(p. 161)

Research conducted at the Henderson Hospital has consistently reported long-term efficacy in terms of reduced service usage and cost-offset following discharge, and psychological and behavioural change.

Cost-offset and reduced service usage

Difficulties in financing TCs following the NHS reforms in the early 1990s (Dolan & Norton, 1991) prompted cost-offset studies at the three most established TCs in the UK (Chiesa et al., 1996, at The Cassel Hospital; Davies, 1999, at Francis Dixon Lodge; Dolan et al., 1996 at the Henderson Hospital). All studies found reductions in cost pertaining to resources used by clients (according to client self-report) in the year following discharge from the TC compared to the year prior admission. Although a number of costs were examined, the reduction in the year following discharge was primarily due to a decrease in the requirement for acute inpatient treatment.

At the Henderson Hospital, the cohort of 24 clients had used an average of £13,966 worth of psychiatric and forensic services per client in the year prior to admission. In the year following discharge, the same clients used an average of £1,308 worth of services. The authors compared admitted clients with those who were refused funding for treatment (although the groups were
not found to differ on demographic or clinical variables at referral) and found that at one-year follow-up, significantly fewer of the treated group had been readmitted to hospital (16% compared to 32%) and significantly fewer had been convicted of an offence (7% compared to 30%). The authors deduced that the average cost of treatment at the time (£25,000) would be recouped within two years and, through the enduring effects of the intervention, represent a saving in the long-term (Dolan et al., 1996).

Kisely (1999) cites a number of methodological problems involved in these cost-offset studies including small sample size, lack of standardised inclusion criteria and uncontrolled design. However, it should be noted that the authors of the Henderson Hospital study (Dolan et al., 1996) made a deliberate choice not to adhere to this model based upon philosophical objections to the application of randomised controlled trial (RCT) methodology to this complex disorder. It was felt that the random allocation to treatment conditions at this tertiary level of care was impractical and unethical.

Davies and Campling (2003) argue that the length of follow-up period of one-year used by Chiesa et al. (1996), Davies (1999) and Dolan et al. (1996) was inadequate and may have resulted in an overestimation of the effectiveness of the TC intervention. The authors note that service usage in the year precipitating admission may have been unusually high considering the client’s proximity to admission. Conversely, the low usage observed in the year following discharge may have represented the recency of treatment and might not have endured over time. At the expense of examining a range of outcome variables (acute inpatient admissions being the sole indicator of effectiveness), Davies and Campling (2003) retrospectively estimated service usage among clients admitted to Francis Dixon Lodge for the three years leading up to their referral and also followed all clients for three years post-discharge.

For the small sample of clients from the TCs catchment area (n = 40), the three years pre-admission to the TC had been characterised by a series of acute inpatient admissions increasing in duration year on year. The reduction in acute inpatient admissions observed during the year following discharge in previous studies was observed to be maintained in Davies and Campling’s
(2003) sample for the following two years, with admissions decreasing year on year. However, taking into account a peak in admissions in the year prior to referral to the TC, the cost-offset benefits of this pattern were minimal.

**Psychological and behavioural change**
In addition to the methodological issues covered previously, Dolan *et al.* (1997) refer to the use of 'indirect measures of the core psychopathology' (p. 274) as the primary obstacle to an accurate assessment of change in treatment outcome studies for PD. Reductions in behaviours associated with PD (such as criminal activity, self-harm and suicide attempts) have been equated with change in the PD itself. Whilst reductions in harmful behaviours are indisputably positive outcomes, Dolan *et al.* (1997) highlight the importance of assessing change at a deeper psychopathological level, and attempted to do this amongst a sample of clients admitted to the Henderson Hospital.

Using standardised self-report instruments with established reliability, the authors assessed psychopathology at referral and at one-year follow-up. A control group was created from clients who were refused funding from their District Health Authority, who could be considered to be highly comparable to the treatment group. However, also making up the control group were clients who had not attended for assessment and selection and those who were refused admission on clinical grounds. As Kisely (1999) argues, this led to a highly biased, self-selected control group. However, instruments administered at referral did not show notable differences in symptom profiles or levels of impairment and distress between the two groups. However, Dolan *et al.* (1997) recognise that this small subgroup comparison sample does not constitute an experimental control group.

The study showed marked reductions in borderline psychopathology one year post-discharge from the Henderson Hospital. This reduction was significantly greater for the treated sample as compared to a non-admitted group. However, as Dolan *et al.* (1997) note, statistically significant improvements on standardised measures are not an adequate indication of meaningful changes in the clients functioning. They go on to state:
Evaluation of the clinical relevance of the individual changes revealed that a greater proportion of the admitted than of the non-admitted group showed reliable and clinically significant improvements (43% admitted v. 8% non-admitted) which were positively related to length of stay in treatment.

(p. 277)

The positive correlation between length of stay and positive treatment outcome was further confirmed in the work of Davies and Campling (2003) who observed an association between short admissions where clients had been unable to engage, and consequent poor outcome manifested in suicide or readmission.

It is also important to make brief reference to an international systematic review of TC effectiveness for PD conducted by Lees et al. (1999, as cited in Lees et al., 2004) in which careful account was taken of possible publication biases. The review identified a sufficient number of quality research studies to facilitate a meta-analysis which showed a clear and positive treatment effect for TCs.

A Significant Publication

Chiesa et al. (2004) share Kisely's (1999) earlier objections, noting that evaluations of TC based interventions for PD have typically been of the cohort-study type and have been limited by a number of methodological issues such as retrospective design, non-operationalised diagnostic criteria, absence of control or comparison groups and the use of unstandardised outcome measures (Gabbard et al., 1999; Wallerstein, 1986; both as cited in Chiesa et al., 2004). Chiesa et al. (2004) attempted to remedy this with a methodologically rigorous prospective design using strict inclusion and exclusion criteria, a control group and standardised measures of outcome, both subjective and objective. The study compared treatment outcomes across a wide-range of indices from two models of delivering psychotherapeutic inpatient treatment. The long-term (12-month) TC approach at the Cassel Hospital was compared with a shorter-term (6-month) inpatient program which was followed by longer-term (12-18 months) outpatient and community-based interventions (this was referred to as the
step-down program). General non-specialist community treatment was used as a control.

Thorough and extensive statistical analyses were performed on the data to control for a number of possible sources of error, however, the authors recognise that the geographical (rather than randomised) allocation of clients to study conditions may have affected the comparability of the groups in terms of their clinical presentations at referral. That said, the treatment groups were observed to be well matched on the majority of demographic, diagnostic and other clinical criteria. Furthermore, as a result of stringent funding arrangements at the time of this work, a rather specific subset of clients represented by high levels of severity and chronicity were referred for treatment at this specialist level.

The complexity of the interventions involved in the multicomponent treatment programs examined in this study make an attribution of treatment effects difficult, as the authors note:

> It is not clear if mere hospitalization, the nature of the hospital climate, or the treatments offered in the hospital or a combination of these was the effective component of the treatment.

(Chiesa et al., 2004, p. 1468)

Although more recently, Winship and Hardy (2007) have cited the group therapy component of interventions for PD as central to positive treatment outcome. This is relevant to the group-based approach around which the TC model is based.

Chiesa and his colleagues published honest and upfront conclusions, somewhat complicated by Chiesa’s then position at the Cassel Hospital:

> …the results showed that a step-down program comprising a medium-term residential stay in a psychosocial therapeutic milieu followed by long-term outpatient group psychotherapy and support in the external community achieved significantly greater improvement on a number of standardized and clinical outcome measures than long-
term specialist residential treatment alone with no outpatient follow-up or general psychiatric management.

(Chiesa et al., 2004, p. 1468)

The results of this study called in to question the role and value of long-term specialist residential treatment centres for PD and the authors went so far as to hypothesise that excessive lengths of admission may be related to symptomatic regression (particularly with regards to self-harming and parasuicidal behaviour) which is in direct contrast to previous work that had reported a positive correlation between length of stay and treatment outcome (Davies & Campling, 2003; Dolan et al., 1997). Unchanged rates of readmission to psychiatric services in the year following discharge suggested that the lack of outpatient support during this time left clients vulnerable to further acute episodes.

Conversely in the step-down program, a specialist psychosocial aftercare program did appear to contain client anxieties surrounding discharge from hospital and reintegration into community life, allowing them to negotiate this process without experiencing a re-emergence of symptoms such that readmission was required. The inpatient phase of the step-down program may have functioned to 'initiate a process of reversal of entrenched patterns of dysfunctional behavior [sic], expressed as severe symptoms or self-destructive acting out' (Chiesa et al., 2004, p. 1469). However, further work is required to establish whether this inpatient phase is absolutely necessary, as preliminary results from community-based approaches suggest that it is surplus to requirements (Bateman & Fonagy, 2000; Clarkin et al., 2001; both as cited in Chiesa et al., 2004; Linehan et al., 1993).

Service-User Perspectives
Service-user perspectives on the experience of the TC model are limited to those published as part of informational and promotional material by various TCs which cannot be argued to be an objective source of information. However, an examination of the literature pertaining to service-user experiences of receiving a diagnosis of PD and the features of services that
they find to be helpful, allows a discussion of how the TC model might meet those requirements.

Service-users with a diagnosis of PD have commented on the value of specialist, skilled staff teams and have urged a consideration of the contribution that clients might make to the training and development of professionals working in PD services (NIMHE, 2003). TCs benefit from a specialist skilled team who regard the residents as an integral part of the assessment and treatment of their peers.

Further aspects of helpful and unhelpful practice identified in service-user focus groups are displayed in the tables below:

Helpful features for personality disorder services

- Early interventions, before crisis point
- Specialist services, not part of general MH
- Choice from a range of treatment options
- Individually tailored care
- Therapeutic optimism & high expectations
- Develops patients’ skills
- Fosters the use of creativity
- Respects strengths and weaknesses
- Good clear communication
- Accepting, reliable, consistent
- Clear and negotiated treatment contracts
- Focus on education and personal development

...can make people feel respected, valued and hopeful

(Taken from NIMHE, 2003, p. 22)

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<th>Unhelpful features for personality disorder services</th>
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<td>• Availability determined by postcode</td>
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<td>• Office hours only</td>
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<td>• Lack of continuity of staff</td>
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<td>• Staff without appropriate training</td>
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<tr>
<td>• Treatment decided only by funding/availability/diagnosis</td>
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<td>• Inability to fulfil promises made</td>
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<td>• Critical of expressed needs (e.g. crisis or levels of observation)</td>
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<td>• Dismissive or pessimistic attitudes</td>
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<td>• Rigid adherence to a therapeutic model in cases where it becomes unhelpful</td>
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<td>• Passing on information without knowing a person</td>
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<td>• Long-term admissions</td>
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<td>• Use of physical restraint and obtrusive</td>
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respite) • Inappropriate, automatic or forcible use of medication
• Staff only respond to behaviour
• Withdrawal of contact used as sanction
...can make people into "career psychiatric patients"

(Taken from NIMHE, 2003, p. 22)

The majority of the features identified as 'helpful' are at the core of the TC model, particularly those relating to an accepting, supportive and consistent therapeutic milieu in which service-users are consulted and power relationships between clients and professionals are deconstructed. Furthermore, many of the features identified as 'unhelpful' are unlikely to apply to TCs; however, the decentralisation of funding arrangements for TCs has limited the availability of this intervention. It is not clear as to whether the long-term admissions referred to as 'unhelpful' were located within general acute wards, although it does seem that there are lessons to be learnt from the work of Chiesa et al. (2004) regarding the length of stay in a TC; it may be that a shorter, intensive admission followed by comprehensive follow-up care in the community is a more acceptable option. Alternatively, the model used at Francis Dixon Lodge whereby residents return home for weekends may be useful.

**Conclusion and Reflections**

From a professional perspective, there exists a moral statement of human and psychological equality implicit in choosing to practice as part of a TC. In his writings on TCs, Main (1946, as cited in Kennard, 1998) expressed what is essentially an early conceptualisation of the service-user involvement principle central to contemporary clinical psychology:

The anarchical rights of the doctor in the traditional hospital society have to be exchanged for the more sincere role of member in a real community, responsible not only to himself and his superiors, but to the community as a whole, privileged and restricted only insofar as the community allows or demands. He no longer 'owns' his patients. They are given up to the community which is to treat them, and which owns them and him. Patients are no longer captive children, obedient in nursery-like activities, but have sincere adult roles to play, and are free to reach for responsibilities and opinions concerning the community of which they are a part.

(p. 28)
I am personally drawn to the TC approach as a vehicle for ‘reclaiming the humanity’ (Wright et al., 2007) in PD. However, as Kennard (1998) notes, the level of commitment required to work within this approach has a tendency to create an idealisation of and conviction in the TC such that the clinician becomes relatively impervious to criticism and fails to recognise identified limitations of the model. There is, however, an alternative explanation for this apparent imperviousness to criticism, and this is one of the possible frustration of TC professionals who are party to clinical evidence that the approach effects change in mental health and functioning, but do not have access to good quality research studies to lend strength to their argument (Lees et al., 2004).

I would argue that the clinicians at the Henderson Hospital, in fact, are aware of the limitations of the TC model, as is reflected in the proposals for service development made in the Chief Executive’s Business Case report, submitted to the South West London and St Georges Mental Health NHS Trust Board in January 2007. It is possible that the Henderson Hospital is an potentially effective service that is being ineffectively implemented and that consideration should be given to piloting the step-down model conceived by Chiesa et al. (2004), utilising the resources and expertise at the Henderson Hospital for the brief inpatient phase. Whilst the naturalistic setting of a TC does not lend itself to RCTs, routine evaluation using standardised measures and adequate follow-up periods would be an appropriate way in which to assess the effectiveness of this approach.

Whilst writing this essay, I have found it difficult not to be drawn into a cost-benefit analysis and to remain focused on the clinical and psychological, rather than the financial, value of the TC approach. It could be argued that in the context of the modern NHS, these are one and the same thing and it seems naively idealistic to argue for the preservation of a service that, currently, may not be providing ‘value for money’. But, I remain enthused about the way in which the TC model appears to complement the views and requirements of service-users and tackle the power differential between professionals and clients. Furthermore, the value of a range of treatment options to meet the needs of individual service-users should not be underestimated and a diversity of clinically effective interventions should
ideally be available in the NHS. It seems appropriate that TCs are given the opportunity develop the service that they offer in line with recent empirical evidence so that these unique resources might be preserved.
References


What are the differences and similarities in the process and content of supervision and consultation practices in clinical teams? How might we evaluate the effectiveness of supervision and consultation in our NHS work?

Organisational and Professional Issues

January 2009
Year Two
What are the differences and similarities in the process and content of supervision and consultation practices in clinical teams? How might we evaluate the effectiveness of supervision and consultation in our NHS work?

Introduction
The first task of this discussion is to provide working definitions of 'supervision' and 'consultation'. It is recognised that a degree of subjectivity is involved in which particular definitions are selected from the available literature, however, an effort has been made to select those demonstrating empirical support.

It is probable that the definitions selected, which will form the basis for the discussions of content and process that follow, may not encompass the vast array of models and frameworks in existence. The reader is asked to forgive the somewhat generic use of the terms 'supervision' and 'consultation' in the knowledge that there is not the available scope in this discussion to make distinctions between theoretically specific approaches, and that an attempt has been made to focus the discussion around aspects of supervision and consultation that appear to be common across the majority of models.

As previously stated, a discussion of content and process, both in clinical supervision and consultation to clinical teams, will follow from the definition of these terms. A number of similarities and differences will be noted (although, it is recognised that this is unlikely to be an exhaustive list) and, guided by the empirical literature, some issues of interest will be explored in more detail.

A consideration of how clinical supervision and consultation to clinical teams in the NHS might be evaluated will then form the final part of this discussion. This section will not debate the effectiveness of clinical supervision and consultation based upon the research evidence; rather, it will explore how we might best go about evaluating the effectiveness of clinical supervision and consultation. It is the process as opposed to the outcome that is the focus of this final section.
Defining supervision and consultation

Supervision

The British Psychological Society (BPS) Division of Clinical Psychology (DCP) (2006) states that:

“All clinical psychologists, at all stages of their career and in all work contexts, will engage in regular supervision of their work. All aspects of a clinical psychologist’s work, be it clinical, consultancy, supervisory, research, educational, or managerial, should be subject to supervision”.

(p. 3)

Noting the lack of clarity and poor empirical foundations of widely accepted definitions of supervision (Bernard & Goodyear, 2004; British Association for Behavioural and Cognitive Psychotherapy [BABCP], 2006; British Association for Counselling and Psychotherapy [BACP], 1996; British Psychological Society [BPS], 2003), Milne (2007) identifies four key criteria fundamental to a valid, empirical definition and developed what he believes to be an improved working definition of supervision. The resulting definition is included below with the four essential criteria noted in brackets, as it appears in the original paper:

“The formal provision, by approved supervisors, of a relationship-based education and training that is work-focused and which manages, supports, develops and evaluates the work of colleague/s (precision). The main methods that supervisors use are corrective feedback on the supervisee’s performance, teaching, and collaborative goal-setting (specification). It therefore differs from related activities, such as mentoring and coaching, by incorporating an evaluative component (precision by differentiation). An example is Gillam, Strike-Roussos, and Anderson (1990), who described supervision in terms of a discussion of the supervision model and of the respective roles of supervisor and supervisee, joint goal-setting, observation of the supervisee, and evaluation. They helpfully appended an outline of these meetings, consisting of 18 agenda items (precision through examples). Supervision’s objectives are “normative” (e.g. quality control), “restorative” (e.g. encourage emotional processing) and “formative” (e.g. maintaining and facilitating supervisees’ competence, capability and general effectiveness) (specification by identifying the functions served). These objectives could be measured by current instruments (operationalization). This definition is supported by recent reviews of the empirical literature (e.g. Falender & Shefranske, 2004; Watkins, 1997) and by consensus statements (e.g. Falender et al., 2004) (corroboration)”
Milne notes that this definition is inclusive of all supervision formats, professional groups and therapeutic orientations, although it should be noted that, for the purposes of this discussion, 'supervision' will refer to a one to one interaction within the clinical psychology professional group. He also states that staff-training, consultancy and performance management are excluded from the definition. It is selected here as an appropriate definition based upon the empirical support it received from the best available evidence synthesis (a variant of systematic review methodology whereby strict inclusion criteria are used to select literature) conducted by Milne (2007).

Consultation
In 1990, a report prepared by the Manpower Advisory Group (MPAG) delivered the first strong signal that clinical psychologists should reduce their therapeutic role and increase their role as consultants, advising on complex cases and supervising therapists. However, as Pilgrim (2008) notes, "There was no sign in the 1990s, or since, that clinicians routinely embraced the consultancy role, nor was there evidence that training courses had allocated time for consultancy to be supported in terms of understanding the role and upskilling trainees ready for a new form of professional life to come" (p. 11).

However, driven by initiatives such as New Ways of Working (BPS, 2007) and Increasing Access to Psychological Therapies (Care Services Improvement Partnership [CSIP], 2007), consultancy is very much back on the professional radar of clinical psychologists and clinical psychology trainees. New Ways of Working states that "Psychologists should seek to develop their role in contributing to the improved effectiveness of services through process consultancy at systems level, peer consultation and supervision, leadership, and the promotion of effective roles for users and carers" (BPS, 2007, p.4).

As yet, the BPS have not provided a working definition of consultation as applied to clinical psychologists, and a literature search for the purposes of this assignment failed to identify one that was not specific to educational or health psychology. Whilst not presented as a definition, Dent & Golding (2006) provide a useful description of consultation:
"... an alternative to working directly with clients. It involves working with a part of the network surrounding the client, explicitly for that client's benefit ... Consultation can involve supervising or advising professionals who will be delivering direct therapy or it can involve helping other professionals to reflect on their work with the aim of delivering their services more effectively".

(p. 164)

Considering content and process
Reflecting upon the title of this assignment, a number of differences and similarities in the process and content of supervision and consultation in clinical teams immediately came to mind. Figure 1 details these initial impressions. Guided by the empirical literature, this section goes on to consider some of the key differences and similarities illustrated here in further detail.
SUPERVISION

Within professional group
Quality control, safe and ethical practice, gate-keeping
Evaluative component
Formal power dynamic, psychologist as expert
Centrality of 1:1 relationship
Overtly negotiated boundaries
Mandatory, continuous throughout career
Professional and personal development
Analogies with therapy
Formative

CONSULTATION

Across professional groups
Clinical responsibility retained by consultees
Non-evaluative
Deconstructed power dynamic, psychologist not in expert role
Team-based, group dynamics
Less emphasis on boundaries
Voluntary, time-limited
Professional and team development

Figure 1: Areas of similarity and difference between clinical supervision and consultation to clinical teams
Selected similarities

Formal models and frameworks

For both clinical supervision and consultation to clinical teams, a number of formal models and frameworks exist to inform and guide content and process.

Frequently cited models of clinical supervision include:

- Process Model (Hawkins & Shohet, 2000)
- Systems Approach to Supervision (Holloway, 1995)
- Supervision Alliance Model (Inskipp & Proctor, 1995)
- Cyclical Model (Page & Wosket, 1994)
- General Supervision Framework (Scaife & Scaife, 1996)
- Integrated Developmental Model (Stoltenberg et al., 1998)

However, Falender and Shafranske (2005) note that, despite the availability of theory and knowledge, the majority of supervisors practice without formal training and tend to base their supervisory style on implicit models of supervision gleaned from their own experiences of supervision. Therefore, “there are probably as many approaches to supervision as there are supervisors” (p. 7).

Frequently cited models of consultation include:

- Problem-solving Model (Bergen, 1995)
- Solution-focussed Model (Bremble & Hill, 2004)
- Systemic Model (Campbell, 1995)
- Support Model (Golding, 2004)
- Problem-focussed Model (Street et al., 1991)
- Psychoanalytic Model (Sprince, 2002)

However, a series of articles in a 2008 issue of Clinical Psychology Forum (Lake, 2008a; Lake, 2008b; Lake et al., 2008; Preedy, 2008) highlight a continuing demand for clear frameworks within which to organise the consultation space, which may suggest that the existing models are not being employed.
It appears that a key similarity between clinical supervision and consultation to teams may not, in fact, be the existence of formal models and frameworks, but rather a lack of confidence in them, or a lack of impetus to embrace them in clinical practice.

Promotes evidence-based practice
Both clinical supervision and consultation to clinical teams are forums for the promotion of evidence-based practice. Falender and Shafranske (2005) note that clinical psychologists can affirm the importance of evidence-based practice by modelling in case consultation and supervision, by actively using the scientific literature and by active involvement in applied research projects within the clinical setting.

Learning alliance
Falender and Shafranske (2005) cite ‘inquiry’ as one of the ‘pillars’ of clinical supervision, referring to the processes via which an understanding of the therapeutic process and an awareness of the supervisee’s professional and personal contributions to this process are developed. The authors note that, in clinical supervision, this process is collaborative and that effective supervision occurs when inquiry is modelled as a process of exploration rather than an exercise in criticism whereby the supervisor provides the ‘right answers’. According to Falender & Shafranske (2005), this exploratory approach facilitates and encourages reflection-in-action, self-monitoring and disciplined and thoughtful practice.

This sense of being part of a reflective, learning alliance can also occur as part of consultation to clinical teams. Lake (2008b) describes an approach whereby a safe and protected thinking space is provided for the team and, rather than directly provide answers or solutions to dilemmas that the team may be facing, the space is used to construct a shared formulation drawing on the skills and experience of the whole team. As described above with reference to clinical supervision, the consulting clinical psychologist models an enquiring, inquisitive approach encouraging reflective practice.
Appreciation of diversity

Evident in the literature pertaining to both clinical supervision and consultation to clinical teams is recognition of the necessity to build diversity competence. Falender and Shafranske (2005) note that, whilst working with diversity is a core part of clinical psychology training, it is an area that has been neglected in supervision training and research. The authors emphasise the vital role of clinical psychology supervision in building diversity competence across the entire construct including “... culture in all its aspects, as well as socioeconomic status, race, religion, disabilities or ableness, age, gender, and sexual orientation, all of which may converge and intersect” (p. 115).

With regards to considering diversity in consultation practices, Thomas (2008) describes in detail the Strategic Diversity Management approach to consultation, which has developed out of a 20 year commitment to addressing diversity challenges between consultants and their clients. Whilst this model has not been empirically assessed in the clinical arena, it represents a strong foundation upon which to build as the consulting role of the clinical psychologist develops.

Selected differences

Quality control, safe and ethical practice, and gate-keeping

One of the objectives of clinical supervision included in Milne’s (2007) empirical definition is that of a ‘normative’ or ‘quality control’ function. Indeed, Falender and Shafranske (2005) cite the most important task of the clinical supervisor as monitoring the conduct of the supervisee, ensuring that their professional practice meets the appropriate and ethical standards to facilitate the best possible clinical outcome for the client. This function is demonstrated in its most extreme form in the supervision of trainee clinical psychologists, whereby the supervisor holds clinical responsibility for all of the supervisee's work. In this supervisory relationship, the supervisor also takes on a gate-keeping role for the profession through monitoring the clinical competence of those working towards qualification.

This quality control and risk management aspect of clinical supervision is a key way in which supervision differs from consultation. In the latter, the clinical psychologist does not occupy a role whereby they hold any clinical
responsibility for the work of other professionals, and although examples of unsafe or ethically dubious practice may be communicated in the psychologist’s own clinical supervision or reported to line managers, it is not the primary role of the consulting psychologist to actively monitor clinical competence in consultees (Lake et al., 2008). This difference may be a contributing factor to the differing power dynamics between supervisors and supervisees as compared to those between consultants and consultees.

Formal power dynamics, psychologist as expert
The relationship between supervisor and supervisee is governed by a power dynamic which places the supervisor in the role of expert and inevitably subordinates the supervisee. This is likely to be rooted in early supervisory practice which emphasised the authority of the supervisor and from which the master-apprentice model of supervision emerged (Binder & Strupp, 1997). In the clinical supervision of trainees, this power dynamic is maintained by the quality control, risk management, gate-keeping and clinical responsibility aspects of the supervisor’s position, described above. It should be noted that these dynamics are argued to be fundamentally different to those between a qualified clinical psychologist providing supervision to a qualified colleague (Green & Youngson, 2005) whereby the interaction may become more consultative in nature.

Lake (2008a) explains that, when consulting to clinical teams, the clinical psychologist is not placed in the role of expert. He notes that, as in good clinical work, the consultant empowers the consultee by enhancing their own skills rather than locating all knowledge and expertise within themselves. Green and Youngson (2005) warn against “our lauding of the benefits that members of other disciplines can derive from being supervised by a clinical psychologist and our lack of recognition of the potential educational advantages of reversing those arrangements” (p. 4). The authors note the value placed by the NHS on professionals with skills in interdisciplinary collaboration, and consulting to clinical teams is an opportunity not available in clinical supervision for clinical psychologists to develop this competency.

Centrality of the relationship in clinical supervision
Liese and Beck (1997) explain that supervision, like psychotherapy, is an interpersonal process and Milne (2007) refers to clinical supervision as
'relationship-based' in his empirical definition. Falender and Shafranske (2005) refer to the supervisory relationship as one of the 'pillars' of clinical supervision, particularly crucial when the supervisory dyad involves a clinical psychologist in training who must feel able to appropriately disclose and seek support for the personal and professional challenges of training. The quality of the supervisory relationship has often been found to be an important determinant of supervision outcome in clinical supervision literature (Bernard & Goodyear, 2004; Ellis & Ladany, 1997; Holloway, 1995).

The importance of the supervisory relationship in clinical supervision means that appropriate steps must be taken to protect its integrity. Such measures can be understood as negotiated boundaries between supervisor and supervisee, whether they be practical (e.g. committing to planned and protected weekly space for supervision) or personal (e.g. placing appropriate limits on personal information shared between supervisor and supervisee).

The centrality of the interpersonal relationship between supervisor and supervisee is another key way in which clinical supervision differs from consultation. Whilst it is presumably beneficial for clinical psychologists to maintain good relationships with members of the multi-disciplinary clinical team, these relationships are likely to be far more dilute in a consulting interaction. Whilst both clinical supervision and consultation are concerned with continuing professional development, clinical supervision has an additional consideration towards personal growth, which requires / creates a unique interpersonal relationship observed in clinical supervision which, it could be argued, is unlikely to occur in a consultation interaction.

**Personal and professional development & analogies with therapy**

Milne (2006) draws a series of analogies between clinical psychology supervision and therapy, beginning at a very general level whereby both clinical supervision and therapy involve adaptation through learning, both designed to foster personal development. Examples of the adaptation processes shared by both settings include needs-led goal setting, theory and research informed interventions, monitoring, evaluation and feedback (Nathan et al., 2000; as cited in Milne, 2006). This is perhaps illustrated most clearly in the field of CBT. Padesky (1996; as cited in Milne, 2006, p. 219) notes that
"cognitive therapy supervision parallels the therapy itself. Supervisor and supervisee establish a supervision problem list, set goals, collaboratively conceptualize roadblocks... and strategise to overcome these problems. New skills are taught, guided discovery is employed and homework is assigned". This process of personal development facilitated through the interpersonal relationship between supervisor and supervisee sets clinical supervision apart from consultation to clinical teams, whereby the focus on casework and professional development does not allow for a meeting of each consultee's individual needs.

Milne (2006) also notes that both therapy and clinical supervision occur within a social system, whereby qualified practitioners operate within peer-support and management sub-systems. Falender and Shafranske (2005) note that socialisation to the profession parallels the development of clinical competence in supervision:

"Supervision provides a relationship in which professional values, commitments, and identity are formed and career goals are formulated. In addition to enhancing clinical competence, intermediate outcomes include increases in role assimilation, self-assessment, and self-efficacy... Ultimately, the outcome of supervision is to support the entire process of professional development that leads to competency as a psychologist and to enable the supervisee to assume the role of a colleague who contributes to the community and to the field".

(p. 6)

Again, these complex processes are somewhat unique to the within-profession context of clinical psychology supervision. Although, it is possible that the team consultation context could contribute to role-assimilation, self-assessment and self-efficacy as individual members of the multi-disciplinary team notice the particular skills and knowledge that they bring to the team, whilst having the opportunity to reflect upon themselves as viewed by other members of the team.

In summary
Whilst this section has not considered all of the possible similarities and differences between clinical supervision and consultation to clinical teams, it has briefly explored some of the distinctions that have been recognised in the
empirical literature. Based upon this brief exploration, it would appear that the similarities noted are generally content-based, whilst the differences appear to be primarily process-based. This would fit with the differing mediums through which development is communicated in supervision and consultation, as identified in the earlier definitions of the terms.

Evaluating the effectiveness of supervision and consultation in NHS work

It is generally accepted that clinical supervision is integral not only to clinical training but also to the continuing professional development of the clinical psychologist throughout their career (Falender & Shafranske, 2005). The DCP (2003) cites clinical supervision as key in managing the increasing demands of the clinical psychologist's role in a modern NHS and note the importance of clarifying the nature of supervision and its parameters. There is also growing acceptance that provision of consultation to clinical teams may be integral to the survival of clinical psychology as a distinct profession (Pilgrim, 2008). In a climate whereby the delivery of psychological therapies within the NHS co-exists with 'stepped-care models', 'guided self-help', 'payment by results' and 'commissioner-led services' (Lake, 2008a), clinical psychologists appear to be very expensive. It is vital that clinical psychology as a profession highlights its unique selling points, of which consultation is one, and makes an effort to provide evidence for their efficacy.

Green and Youngson (2005) warn against the assumption that clinical supervision is inevitably a positive pursuit and note that "... a management response appropriately could be – 'If we are to fund this activity, including the opportunity costs, we need to believe in its worth and have evidence to back up that belief’" (p.9). Similarly, an appropriate management response to the value of employing a clinical psychologist could be 'If we are to employ a clinical psychologist over a far cheaper or more experienced (at least in one model of therapy) alternative, we need to believe that the clinical psychologist has something unique and valuable to contribute and have evidence to back up that belief', thus highlighting the importance of evaluating the effectiveness of consultation to clinical teams.
There is, in fact, a wealth of research literature examining various aspects of clinical supervision, including evaluations of effectiveness (see reviews by Ellis & Ladany, 1997; Ellis et al., 1996; Milne & James, 2000). However, reviews of the aforementioned literature highlight a distinct lack of scientific and methodological rigour. Ellis et al. (1996) observed just this in a sample of 144 studies of clinical supervision. The authors emphasised the multitude and magnitude of the statistical and methodological threats involved in clinical supervision research and concluded that “investigations of supervision were simultaneously unlikely to detect true effects and very likely to find spuriously significant results” (p. 43). Research literature examining the effectiveness of consultation is less extensive, but does exist (see Medway & Updyke, 1985). The difficulty with this literature is less one of methodological rigour but, rather, one of relevance. The majority of the literature is based on educational or occupational psychology consultation and fails to capture the essence of the type of consultation espoused by the BPS (2007) in New Ways of Working.

The available reviews of the literature pertaining to both clinical supervision and consultation to clinical teams are useful in terms of guiding how we might evaluate the effectiveness of these processes in a valid and reliable way. With regards to clinical supervision, the existing literature highlights the methodological areas around which we must problem solve in order to produce evidence of a high empirical standard. For consultation, the existing literature highlights gaps in our knowledge and transferrable lessons from the evaluation of other forms of psychological consultancy. However, it appears that, before grappling with these more complex issues, there are two very fundamental issues to be resolved for both supervision and consultation research.

Firstly, it is necessary to define and operationalise the ‘independent variables’ of clinical supervision and consultation. At the beginning of this discussion, it was noted that Milne (2007) has highlighted the lack of clarity and poor empirical foundations of widely accepted definitions of supervision. Surveys of practitioners have revealed confusion and inconsistency around the nature of supervision (Lister & Crisp, 2005; Lyth, 2000; White et al., 1998). Indeed, a publication from the DCP (2003) states that “The DCP has long held that time
and space to allow for reflection, discussion and feedback on all elements of practice is a valuable way of enhancing practice and improving service quality, whilst being uncertain about the detailed nature of what such supervision and its parameters might be" (p2). The current discussion has also noted the lack of a widely accepted definition of consultation specific to clinical psychology, and has referred to the messages communicated through a series of articles in a 2008 issue of Clinical Psychology Forum (Lake, 2008a; Lake, 2008b; Lake et al., 2008; Preedy, 2008) around a poor understanding of what exactly constituted consultation and how exactly one should deliver it.

Secondly, it is necessary to define and operationalise the 'dependent variables' upon which we wish to measure the effect of clinical supervision and consultation. The DCP Professional Practice Guidelines (1995; as cited in Green & Youngson, 2005) suggest two very broad purposes of supervision; to maintain the quality of performance, and to extend an individual's range of skills. Green and Youngson (2005) break this down further, suggesting five linked components reflecting the various stakeholder objectives involved in maintaining quality and increased skills:

- best practice in relation to clients;
- best practice in relation to other professionals and service delivery;
- best practice in relation to professional development;
- best practice in relation to personal development;
- best practice in relation to organisational objectives.

These outcome indices are also entirely relevant to consultation and are in keeping with the educational pyramid framework within which Milne and James (2000) evaluated clinical supervision, but which allows for the inclusion of consultation and could be easily adapted to be applicable to consultation to clinical teams (see Figure 2).
It seems that these two initial steps may begin to introduce some methodological rigour to clinical supervision and consultation research, however, the use of experimental terminology alone (i.e. independent / dependent variables) does not lead to a scientifically rigorous study. Green and Youngson (2005) rather pessimistically state that "...none of us will have the resources to test the ultimate prediction that good clinical supervision will result in improved clinical outcomes for clients treated by the supervisee" (p.8). The authors argue that the gold standard of a randomised control trial cannot be applied to supervision research as the ethical implications of withholding clinical supervision from a control group preclude this. Instead, they suggest that qualitative descriptive work based upon our own experiences and practices would be a useful way forwards. In fact, the most powerful design for both supervision and consultation may be a mixed methods approach that could capture the quantitative data that might satisfy commissioners, whilst not overlooking the opportunity to collect rich qualitative data to further our empirical understanding of two processes that are (are becoming) so integral to the clinical psychologist's role.

Conclusions and reflections
My choice of assignment title was influenced by the personal resonance that the issues of clinical supervision and consultation have for me. As a second year trainee, I have now been involved in a number of supervisory relationships, all sharing some common characteristics yet all entirely unique
interpersonal experiences. Additionally, my trainee status locates me in an early professionally-developmental stage of my career whereby supervision is particularly powerful and valued. Yet, in contrast to the relative professional vulnerability I feel at this stage and the consequent value I place on clinical supervision, I am a little under 18 months away from being expected to provide clinical consultation to teams.

I approached the preparation and writing of this assignment under the assumption that it would help me to clarify in my own mind the distinction between supervision and consultation, that it would introduce me to widely-used models of both, and that I would learn from existing empirical endeavours as to how supervision and consultation might be evaluated.

I found myself surprised, both at the lack of precise definitions of supervision and consultation, and of the inconsistencies in the understanding of these terms across the professional of clinical psychology. I found myself overwhelmed by a proliferation of models and approaches relating to supervision and consultation, and confused as to why they appear to be so rarely embraced. And finally, I found myself challenged and intimidated by the necessity to evaluate both processes, combined with the enormous methodological complexities involved.
References


Relationship to Change

Problem-Based Learning Reflective Account

One

March 2008
Year One
Beginnings
The concept of Problem-Based Learning is arguably a relatively straightforward one (Wood, 2003) however, when presented to me at the end of the first day of the Clinical PsychD training programme, it appeared the most complex and bewildering thing that I have ever encountered. I felt that my mind was at saturation point, attempting to contain and understand all of the information that had been imparted throughout the day, as I sat quietly contemplating the enormity of what I had taken on. I was simultaneously preoccupied with anxieties sparked by being amongst a group of individuals who would be my colleagues and (hopefully) friends for the duration of training and perhaps beyond. I found myself acutely aware of my every utterance, all the time aiming to strike a balance between appearing professionally competent and personally likeable. My thoughts occurred in an emotional context characterised by feelings of vulnerability and uncertainty, which seemed to be largely due to a sense of being ‘lost’, quite literally. More by luck than by judgement, I had found my way to the campus from a newly rented property that morning, only to spend the majority of the day struggling to find my way around the campus itself and now feeling little comfort at the thought of returning to a residence that did not yet feel like my home.

On reflection, I now realise that my internal state led to my not being entirely receptive to a set of new ideas, however, at the time I understood this as a lack of ability on my part and perceived the other members of the group as having far more theoretical knowledge and practical skills than myself. Whilst concerns around possible negative professional and personal evaluations prevented an expression of my anxiety during our first session, I was able to discuss these concerns with certain other members of the group on a more informal basis throughout the week that followed and was greatly reassured to find that others had also found the experience anxiety-provoking.
Letting go and learning from others

During our second session, the attention of the group turned to our objective of presenting to the rest of the cohort on ‘The Relationship to Change’. Historically, I have found it difficult to work in groups due to my need to be in full control of any piece of work for which I will be evaluated and, for this reason, I found the second session highly frustrating. I became agitated with what I perceived to be excessive discussion and debate concerning our various understandings of the task title. I felt a need to rapidly move the group on to thinking about theoretical models of change with a view to deciding upon a definitive direction for our presentation.

It was at this relatively early point that I began to reflect on my learning style in comparison to the other members of the group. With some level of discomfort, I realised that the way that I believe I learn is one that I have enforced upon myself rather than one that has evolved naturally and I began to recognise flaws in the process. My powerful need to be in control is rooted in an even more powerful need for perfection in my work (a trait that I believe is shared by many Clinical PsychD trainees). The only way in which I feel that I can manage this need is to be as thorough in my work as it is possible to be, therefore, I approach tasks with the attitude that I must be familiar with all previous research and thinking on the subject in question (often an unrealistic task). This is coupled with a deadline-focused state of mind that requires that I immediately begin practically constructing a piece of work. Combined, these two aspects of my learning style often create a state of anxiety that renders me unable to think clearly or work to the best of my ability.

I found that I had little choice but to settle into the pace of the group and as a result I was forced to modify the approach to which I had become so committed. In doing so, I began to appreciate the importance of allocating adequate space solely to planning and preparation and I realised that I was, in fact, acquiring a vast amount of knowledge in these early stages. I began to see this phase less as an overwhelming obstacle, entirely necessary, but preventing me from practically addressing my ultimate task. Rather, I saw it as an exploratory learning process during which I could identify those pieces of information that would be relevant and important for inclusion in our final assignment. Letting go of my ritualistic way of approaching my work feels
unsafe but I now realise that it does not serve to manage my anxiety; it simply contributes to it.

**Identifying ‘our’ models**

There was an early consensus within the group that our presentation should be a balanced account of theory, reflection and clinical application. As such, each group member was allocated a theoretical model of change to research and present briefly in our third session. We identified a diverse set of models that we felt could be applicable to the focus that we had chosen for our presentation, which was the process of change that we were undergoing as a group whilst undertaking the current PBL exercise. Between us, we examined theory including Complexity Theory / Complex Adaptive Systems (Olson & Eoying, 2001), Four Quadrant Model (Plowman *et al.*, 2007), Plan Do Study Act (PDSA) (Langley *et al.*, 1996), Social Learning Theory (Bandura, 1977), Transition Theories (Hopson & Adams, 1976) and Tuckman’s Stages of Team Development (Tuckman & Jensen, 1977).

Individual group members became somewhat protective of the models that they had been allocated and presented them with passion. This led to a cautious and delicate critique of models by the other group members in recognition that a rejection of the model could be misconstrued as a rejection of the individual or the way that they had presented it. This was a possible weakness in our approach that would have been difficult to foresee, however, this ownership attitude to the models functioned very positively in light of the ‘owner’ of one model in particular. I had noticed that this group member had very little confidence in her ability to contribute in a meaningful way and held a misperception of herself as someone who had little to offer. When her model was selected by the group for inclusion in the presentation, the boost to her self-esteem was tangible and it was clear that this served as an indication to her that the rest of the group considered her valuable.

We chose to structure our presentation around two models; PDSA served as a framework within which to discuss our planned and explicit process of change, whilst Transition Theories resonated with the group as a way in which our individual and group experiences of change could be conceptualised. Additionally, it was felt that both models had features that
were applicable to a number of different clinical presentations and change in the therapeutic process.

The imminent presentation
During sessions three and four I had become almost complacent in the ability of our group to accept the different learning-styles and learning needs of individual members and to take these into account in a way that made the sessions an enjoyable space for all. However, session five (the last before the presentation) was difficult and tense as individuals became highly protective of the sections for which they were responsible. I have wondered since whether our general approach of so discretely allocating specific models and sections to individuals was poorly thought-out as group members became almost synonymous with their model / section of the presentation, such that entirely practical critiques were interpreted at a personal level. I remain regretful for failing to offer a particular group member more support when she clearly felt that she was being personally criticised; this was a group member to whom I had become particularly close and I felt a sense of shame for failing to speak-up on her behalf. Ironically, during the same session, I found myself directing a practical critique at another member of the group to whom I was not so close. On reflection, I realised that there was little difference between the two scenarios and became concerned that I had been perceived by this person as a 'bully'. As someone who was bullied throughout my entire school career, I suddenly experienced powerful feelings of shame that I, myself, might have appeared to behave in this way.

We met as a group the morning before we were due to present to the rest of our cohort and members of the programme team and I decided to verbalise my reflections on the last session. This was received well by the group and we were able to, in a sense, repair bonds that had been fractured by conflict that was largely borne out of anxiety about the quality of our impending presentation. It became clear to me at this point that I would inevitably have greater personal rapport with some group members than I did with others, but that this was qualitatively different to professional respect, which is something that I hold equally for all group members.
During the final presentation, I experienced powerful feelings of loyalty to and pride in my fellow group members and noticed the high level of subtlety supportive body language that occurred; reassuring smiles and nods, winks, thumbs-up. It seemed that we metaphorically embraced each other throughout, holding each group member steady, and I genuinely believe that we gave a unique and well-balanced presentation.

Clinical applications
Whilst both of the models considered by our group were felt to be clinically relevant, I have found that an awareness of Transition Theories in particular has impacted upon my clinical practice in my current adult mental health placement. Figure 1 depicts the phases and features of a transition cycle as conceptualised by Hopson and Adams (1976). I find this conceptualisation meaningful both in terms of formulation and in terms of understanding change in the therapeutic process.

In terms of formulation, the cycle reflects the way in which a client may experience and respond to significant life events which may contribute to an understanding of the role of these experiences in the development of a presenting problem. Indeed, whilst working with a client who had recently experienced his first episode of psychosis, I was reminded of Hopson and Adam's (1976) suggestion that multiple transitions can cause a cumulative deterioration in well-being if adequate time for recovery is not available between transitions. This client's childhood and adolescence had been
characterised by a series of significant life events occurring in rapid succession. In addition to this, he reported many of the factors cited by Hopson and Adams (1976) as those inhibiting positive transition outcomes such as economic and emotional insecurity and poor transition management (a lack of preparation for transition and a lack of support during transition).

As regards the process of therapy, the cycle provides a framework for accepting that clients may seemingly deteriorate through the exploration of difficult issues before exhibiting any noticeable relief from their psychological distress. Indeed, it appears that the experience of a crisis can sometimes facilitate progress and growth. However, allowing for this process is rarely possible in a time-limited NHS context and is likely to be viewed as ethically problematic in an atmosphere that seeks to prevent crisis and the accompanying increase in demand on resources. I do, however, feel that awareness of transition cycles may serve to shape realistic expectations in therapy both on the part of the therapist and on the part of the client.
References


Working with people in later life, their families, and the professional network

Problem-Based Learning Reflective Account Two

March 2009
Year Two
Working with people in later life, their families, and the professional network

Problem-Based Learning Reflective Account Two

Beginnings
For the most recent Problem-Based Learning (PBL) exercise, year two PsychD trainees were grouped with year three PsychD trainees in response to positive feedback from the cohorts regarding cross-year working. For clarity, this account will begin with a brief explanation of the task set, and the way in which the group of which I was a part organised itself around this task.

The case presented was that of a 69 year old male, referred to psychology services for assessment of his short-term memory problems and his care needs. The professional network included a social worker expressing concern regarding the client's apparent lack of self-care, and a GP who felt that the client was managing well. A genogram was provided with extensive background information pertaining to the different individuals in the system. As a group, we were asked to identify and locate the problem within the system thinking particularly about the professional network and the definition of professional roles.

During our initial meeting we identified times over the following weeks when we were all able to meet as a group, and scheduled in five one hour sessions to prepare for the final presentation of our thoughts to the rest of our year groups.

Old anxieties, new strategies
My impression of myself, looking back at the reflective account of the first PBL exercise in which I was involved, is that of an extremely anxious trainee, intimidated by an unfamiliar task and an unfamiliar group of people whom I perceived to be more competent than myself:

"On reflection, I now realise that my internal state led to my not being entirely receptive to a set of new ideas, however, at the time I understood this as a lack of ability on my part and perceived the other members of the group as having far more theoretical knowledge and practical skills than myself".
I certainly experienced a similar degree of intimidation during the first meeting for the current PBL exercise, primarily in response to the extent and level of knowledge held by my year three colleagues. The majority of these colleagues were currently on Older People placements and had acquired experience of working systemically from Children and Families and People with Learning Disabilities placements in their second year. Having only just commenced my Children and Families placement, I felt that my systemic thinking was not as advanced as that of my year three colleagues and felt a little reluctant to offer contributions that might be perceived as naive. However, writing in my reflective journal following our first meeting, I note:

"...allows me to reflect on the difference that a year on the PsychD makes. If the second year me sat down to do a piece of work with the first year me, the first year me would be really intimidated... I am looking at the potential third year me and I am looking a lot nearer to being a qualified clinical psychologist".

My previous reflective account also indicates a struggle to synthesise a well-rehearsed individual learning style with the diverse learning styles of other group members:

"I found that I had little choice but to settle into the pace of the group and as a result I was forced to modify the approach to which I had become so committed. In doing so, I began to appreciate the importance of allocating adequate space solely to planning and preparation and I realised that I was, in fact, acquiring a vast amount of knowledge in these early stages".

This was a valuable lesson for me and allowed me to take a different approach this time around. During our first session, I purposely sat back and took notes on behalf of the group, I was less concerned about 'getting to work', I was able to sit and absorb the discussion, contributing where I felt I could, and benefit from the expertise of my year three colleagues, feeling confident that we would meet our presentation deadline. Indeed, following our third meeting, I commented in my reflective journal:

"Strangely felt no desire to take control. Think I got too distracted and interested in the discussions and realised that this was a learning opportunity that I would have missed before by jumping in with some ideas of what we should put on slides".
Being a consultee, and being a consultant

Feedback from my first PBL Reflective Account highlighted a need to make more explicit links between personal and professional learning. For me, the lessons learnt at a personal level during this PBL exercise translated particularly well to the professional context, and particularly well to issues that are very current for practicing clinical psychologists, namely professional consultation.

Driven by initiatives such as New Ways of Working (BPS, 2007) and Increasing Access to Psychological Therapies (Care Services Improvement Partnership [CSIP], 2007), consultancy is increasingly accepted as being a central aspect of the clinical psychologist’s role and, furthermore, as integral to the survival of clinical psychology as a distinct profession (Pilgrim, 2008). New Ways of Working states that “Psychologists should seek to develop their role in contributing to the improved effectiveness of services through process consultancy at systems level, peer consultation and supervision, leadership, and the promotion of effective roles for users and carers” (BPS, 2007, p.4).

As previously mentioned, I recognised the greater experience of my year three colleagues with the older adult client group and felt that their advanced stage in training was evident in the systemic thinking that they displayed. To an extent, I felt that myself and my fellow year two group members were in the position of consultees. Occupying the position of consultee afforded me an experiential learning opportunity which highlighted important issues to be borne in mind when I am in the position of consulting to clinical teams, specifically with regards to deconstructing the notion of clinical psychologist as ‘expert’.

Lake (2008) explains that, when consulting to clinical teams, the clinical psychologist is not placed in the role of expert. He notes that, as in good clinical work, the consultant empowers the consultee by enhancing their own skills rather than locating all knowledge and expertise within themselves. I felt that two of the year three group members had a real awareness of the potential for them to be constructed by us as ‘expert’ and the ease with which they might become very powerful as a result of this. I appreciated the way in which these group members facilitated discussions rather than dominated
them and I feel that the skilful facilitation of one individual in particular allowed me to formulate systemically in a way in which I had not done before.

I was mindful of this individual's approach in a recent situation whereby I was required to consult to the professional network involved with a family whose child had been referred to Child and Adolescent Mental Health Services (CAMHS) for food refusal resulting in serious physical health implications. The GP and Health Visitor, who had worked with this family over a long period of time, were feeling extremely stuck and it was clear from my early consultations with the Health Visitor that she had placed me in an 'expert' role. Following my experiences in the PBL group, I was acutely aware of highlighting the wealth of experience and knowledge that the Health Visitor contributed to our discussions and tried to create an atmosphere of collaboration in our consultations.

In later PBL sessions, as I became more familiar with the material and with the group members, I began to experience our discussions more as peer consultation. We were able to draw upon the diversity of experience and expertise amongst the group members, for example, one member had recently completed a specialist psychodynamic psychotherapy placement and was able to guide the group in formulating using a Malan Triangle (Malan, 1979). I really valued this experience of peer consultation and became aware that this may be something that I wish to seek out when qualified.

In light of the changing professional context for clinical psychology alluded to earlier in this account, it is possible that I will not find myself working within the NHS when qualified and may feel disconnected from my professional peers. Greenburg et al. (1985) noted that private practitioners who lacked formal structure and peer interaction were particularly vulnerable to stress, isolation and burnout. The authors advocated peer consultation as vital for dealing with issues arising in the therapeutic relationship, keeping abreast of professional developments, maintaining ethical principles and maintaining professional standards for competence. Additionally, as a trainee, I am fortunate to work within formal structures that include service user and carer groups. This may not be the case in organisations located within the private or
charitable sector, and advocating for such involvement will be a particularly important part of my role should I find myself working outside of the NHS.

**Power and complacency**

Despite the positive 'consultation-like' experiences discussed above, I feel it important to recognise and consider the difficulties I experienced in my relationship with one of my year three colleagues. I frequently felt that my contributions were dismissed by this group member and I was surprised to find that I did not feel able to be as assertive as I usually would. In my reflective journal, I came to the rather uncomfortable conclusion that:

"When I think about why I don't challenge him, it's entirely due to the fact that he's male and older than me"

Despite often remaining relatively quiet, I noticed the ease with which this group member could dominate and influence discussions when he chose to do so, and I became curious about the processes underlying his rapid emergence as 'leader' at these times. Lord and Maher (1991) argue that decisions about who is a leader, and the attributions that then flow from that judgement, are heavily influenced by the 'leadership prototype' held by the observer. In this case, the 'observers' were five highly educated, independent and assertive women who, despite those characteristics, may have held some degree of masculine prototype of leadership which allowed this individual to take control of the group without challenge.

I suspect that I am often guilty of operating under the assumption that an awareness of power dynamics somehow immunises me from being affected by them. Perhaps I have become complacent in a profession that espouses the value of difference and diversity and have underestimated the ways in which my gender may impact upon my career. I was interested to discover in my reading that this impact may extend beyond professional interactions; Thune et al. (1981) examined co-leaders in several psychotherapy groups and noted that gender was a more important determinant of status than either professional experience or professional affiliation. These issues are particularly pertinent for me as I anticipate an advanced competencies placement in a highly male-dominated organisation in which I will need to take
seriously the fact that my gender may be a very relevant factor in my status and credibility in the workplace.

"We'd better get some reflection in"
Wry smiles were shared around generously when we established at an early point that the presentation of our ideas must be a balanced account of theory, clinical application and reflection. Clearly, we are aware of the expectations placed upon us as trainees, but caution must be exercised to ensure that the meaning behind these expectations is not lost and they do not simply become 'boxes to be ticked' or 'hoops to be jumped through'. As a group, I felt that our approach was a little formulaic, and having a group member who was considered to be particularly adept at reflective thinking, and who took responsibility for this section of the final presentation, allowed the rest of us to opt-out of this process to an extent. In hindsight, I wonder if this was akin to me losing some of my curiosity around the case in question which leads me to be particularly mindful of making space for reflection in clinical supervision rather than simply focusing on the practicalities of the placement.
References


How do we know if IAPT is working?

Problem-Based Learning Reflective Account
Three

February 2010
Year Three
How do we know if IAPT is working?
Problem-Based Learning Reflective Account Three

For the most recent Problem-Based Learning (PBL) exercise, year two PsychD trainees were grouped with year three PsychD trainees in response to positive feedback from the cohorts regarding cross-year working. This was the final PBL task of three in which I have been involved as part of my PsychD training and this account represents my final piece of reflective writing in relation to training.

Throughout training, I have attempted to approach process-focused and reflective-writing assignments as a continuous narrative. Therefore, I have been mindful of reconnecting with themes from previous ‘chapters’ when approaching a new instalment. The account that follows will frequently make reference to my experience of two previous PBL tasks and my reflections upon them as recorded in corresponding reflective accounts. In approaching the present account in this way, I hope to draw together the themes that have dominated my reflective writing over the past three years and to place them in the context of my personal and professional development during this time.

For clarity, this account will begin with a brief explanation of the task set, and the way in which the group of which I was a part organised itself around this task. The ‘problem’ at the centre of our task was ‘How do we know if IAPT is working’? The Improving Access to Psychological Therapies programme (CSIP, 2007) aims to “improve access to evidence based talking therapies in the NHS through an expansion of the psychological therapy workforce and services” (NHS, 2010). Three years after the implementation of the IAPT programme at demonstration sites in Newham and Doncaster, and following the recent publication of the initial evaluation of these sites (Clark et al., 2008), we were tasked with preparing a consultancy report on how the effectiveness of IAPT could be assessed.

During our initial meeting we identified times over the following weeks when we were all able to meet as a group, and scheduled in five one hour sessions
to prepare for the final presentation of our thoughts to the rest of our year
groups.

**Drawing on Case Discussion Group process to inform Problem-Based
Learning reflection**

As one is always grouped with at least some of their fellow Case Discussion
Group (CDG) members for PBL exercises, reflections often converge around
similar central themes, and therefore, the two become inextricably linked. In
my most recent CDG process account, I reflect on the shift in the factors that
contributed to the strong sense of cohesion in our group, noting in particular
"As we move closer towards professional qualification, the factors that
contribute to group cohesion are less personal and more rooted in
professional issues". One such professional issue is the IAPT programme. In
my process account, I note "There has been a strong and consistent sense
from the group that the identity of the professional group that we are
beginning to feel valid members of is under threat as a result of the IAPT
initiative".

In line with views expressed by Marziller & Hall (2009), the members of our
CDG had expressed concerns about what seemed to be an overly simplistic
illness model of mental health difficulties underpinning IAPT. As a group with
a strong emerging professional identity, we became highly protective of
"aspects fundamental to the clinical psychology role, one whereby the
diversity of clients was respected and assumptions were avoided, whereby
holistic formulations led to individually tailored interventions drawing upon the
therapeutic modality that was most appropriate for the client, and therapeutic
transactions took place within an evolving therapeutic alliance based upon
attention to, understanding of and appropriate response to the relationship
between therapist and client".

Having experienced such powerful responses to the IAPT initiative in the
CDG, I quickly noticed an almost identical group response to the PBL task in
our early working sessions. Rather than approaching the task from a curious
position, asking questions and generating hypotheses, we became organised
around sharing our (often negative) thoughts and feelings around IAPT. In
doing so, I feel that we became disconnected from the task in out early
meetings. Rather than problem-solving around useful ways to evaluate the effectiveness of the IAPT programme, we became preoccupied with debating the assumptions underlying the programme and the way in which it had been implemented.

As I had so recently observed in my CDG, powered by the emotive discussions that occurred during PBL sessions, we began to position ourselves as a professional group under threat, engaged in some kind of conflict with the IAPT initiative. I hope that the reader will forgive my drawing on a theory that I have previously used to aid my understanding of CDG process, however, not to refer to Realistic Group Conflict Theory (RCT) (Campbell, 1965) would be to overlook a model which, in my opinion, brings so much clarity to what was happening in those early PBL sessions.

RCT (Campbell, 1965) states that "real conflict of interests, overt, active, or past conflict, and/or the presence of hostile, threatening, and competitive outgroup neighbours, which collectively may be called 'real threat,' cause a perception of threat" (Campbell, 1965, p. 288). The impact of this perception, Campbell argues, is similar regardless of whether a threat actually exists or whether it is simply perceived by the group members. According to Rempel & Fisher (1997) perceived threat can lead to ineffective communication, inadequate coordination and reduced productivity in groups attempting to resolve problems related to the conflict. For me, this describes our early PBL sessions, whereby communication was misdirected towards unhelpfully defensive arguments about IAPT, sessions were somewhat chaotic and lacking in coordination, and little progress was made towards the goal of presenting on 'How can the effectiveness of IAPT be assessed'?

Having these ideas so fresh in my mind enabled me to name the processes that I had recognised. What followed was identification of a crucial factor to be taken into account when considering how the effectiveness of IAPT could be assessed, that being the experiences of the clinical teams responsible for delivering services within the IAPT model. Virtually all members of the group were able to offer anecdotal accounts of colleagues working in teams whereby the implementation of the IAPT programme had been relatively sudden and team members reported feeling inadequately prepared to
accommodate such a significant service development. One group member described the feelings of resentment that had developed in a team who felt that some local valuable service delivery initiatives had been dismissed to 'make room for IAPT'. It occurred to us, therefore, that these teams may have perceived this development as threatening and may have become vulnerable to the same patterns of ineffective communication, inadequate coordination and reduced productivity that we had noticed in our early PBL sessions.

**Threat and defensiveness in clinical practice**

The concept of a clinical team becoming vulnerable to patterns of ineffective communication, inadequate coordination and reduced productivity, as a result of a perceived threat, has been brought to life for me during my Older Adults placement on an inpatient unit. The unit comprises three wards; one ‘functional ward’, one ‘short-stay assessment dementia ward’ and one ‘long-stay dementia ward’. There have historically been some difficulties in creating a therapeutic milieu and a culture of valuing therapeutic input on the one ward in particular. Therefore, one of the key placement objectives identified by my clinical supervisor was to attempt to build professional relationships with staff on this ward in order to create a working alliance to facilitate the introduction of therapeutic activities on to the ward.

I decided to approach this task initially by simply 'being' on the ward in an attempt to understand the day-to-day functioning of the ward and to begin, if possible, to identify what was blocking the changes and developments that had been recommended to the team. Whilst spending time on the ward, I noticed that the clinical team appeared highly defensive in their interactions with me, often spontaneously offering rationale and interpretations for the lack of therapeutic activity on the ward before I had opened a conversation in this area. I was curious about their responses to me and enquired as to the usual patterns of interaction between the ward team and the therapy team (i.e. psychologists and occupational therapists). The team explained to me that members of the therapy team may arrive on the ward to 'observe' without warning and that feedback was often highly critical. It was clear that the ward team perceived this input as highly threatening and that this had precluded a communicative, coordinated and productive working alliance leading to change and improvement on this ward.
Writing on constraints and blocks to change on acute psychiatric wards, Brennan et al. (2006) note that “change requires curiosity, forgiveness and trust, however, on the wards we found these in short supply” (p. 479). The authors also note a sense of “protective defensiveness” within ward teams, whereby the curious team member, perhaps suggesting a change in ward practices, was met with resistance and derision by their peers. Even more concerning, the authors note that a curious client on the ward, highlighting a rule that appeared to be unfair, was met with similar defensiveness and described as “argumentative” in handover.

The cycle of perceived threat, leading to defensiveness, leading to a reduced capacity in professionals to work to their full potential, is as relevant to a group of trainees working on a PBL task as it is to a clinical team on a ward facing the pressures of creating and maintaining a therapeutic environment. Ultimately, failure to recognise these underlying processes impacts upon the quality of the services that are delivered to service-users.

**Learning how not to learn**

A theme that has consistently arisen in my process-focused and reflective-writing assignments throughout the three-year PsychD training is my gradual departure from a learning style that I had become very committed to prior to commencing training. In my first PBL reflective account, I note:

"... I approach tasks with the attitude that I must be familiar with all previous research and thinking on the subject in question (often an unrealistic task). This is coupled with a deadline-focused state of mind that requires that I immediately begin practically constructing a piece of work. Combined, these two aspects of my learning style often create a state of anxiety that renders me unable to think clearly or work to the best of my ability”.

Indeed, my first experience of a PBL task was characterised by a struggle to synthesise a well-rehearsed individual learning style with the diverse learning styles of other group members.

The reflective account corresponding to the second PBL task in which I participated indicated a developing ability to relinquish control and recognise the value of learning through participating as well as learning through doing. By ‘participating’, I refer to the process of absorbing myself in discussion and
debate, engaging in generating hypotheses, testing out ideas in the context of a group of professional colleagues and recognising the impact of anxieties about ‘getting to work’ upon my receptiveness to this formative experience. In my second reflective account, I note:

"... I was less concerned about ‘getting to work’, I was able to sit and absorb the discussion, contributing where I felt I could, and benefit from the expertise of my year three colleagues, feeling confident that we would meet our presentation deadline”

My approach to this most recent PBL task was in stark contrast to the approach that I might have taken in my first year of training and illustrates to me that I have, in effect, learned how not to learn. I was able to allow myself not to be preoccupied with constructing practical presentation materials and imposing direction on the group and had a much more fulfilling learning experience as a result.
References


Case Discussion Group Process Account One:
Summary

September 2008
Year One
Case Discussion Group Process Account One:

Summary

This account will consider, from a variety of perspectives, the experience of being part of a Case Discussion Group (CDG) over the first year of the Doctorate in Clinical Psychology. I will begin by reflecting upon my contribution to the group and how this has evolved over time and I will also attempt to explore this from the perspective of my fellow group members. I will go on to consider the way in which the group has developed over time and discuss the possible underlying processes. I will conclude with a critical consideration of the way in which the group functioned and will attempt to make links between the experience of being part of this group and my personal and professional development.
Case Discussion Group Process Account Two:

Summary

July 2009
Year Two
Case Discussion Group Process Account Two:

Summary

This account will consider, from a variety of perspectives, the continuing experience of being part of a Case Discussion Group (CDG) over the second year of the Doctorate in Clinical Psychology. As in my previous account, I will begin by reflecting upon my contribution to the group and how this has evolved over time and I will also attempt to explore this from the perspective of my fellow group members. I will go on to consider the way in which the group has developed over time and discuss the possible underlying processes. I will conclude with a critical consideration of the way in which the group functioned and will attempt to make links between the experience of being part of this group and my personal and professional development.
Adult Mental Health
Adult Mental Health
Summary of Placement Experience


Service: Specialist Psychological Therapies

Client group: Adults of working age

Presenting difficulties:
Anxiety, panic, depression, psychosis, eating disorder, obsessive compulsive disorder, posttraumatic stress, self-harm, borderline personality difficulties, queried early-onset dementia, queried learning disability, Tourette's Syndrome.

Therapy models:
- Cognitive-Behavioural Therapy (pure approach)
- Cognitive-Behavioural Therapy (integrative approach)
- Narrative Therapy
- Psychoeducation

Settings:
In-patient acute psychiatric care, day hospital, outpatient, client's home, hostels / residential settings.

Assessments:
Neuropsychological assessments, assessments for individual Cognitive-Behavioural Therapy, assessments for group Cognitive-Behavioural Therapy, assessments for individual Narrative Therapy, risk assessments.

Interventions:
Individual CBT (including specialised models such as Trauma-Focussed and CBT for Psychosis), individual Narrative Therapy, Mind Over Mood CBT Group Therapy, Mindfulness, consultation to teams following neuropsychological assessments, systemic consultations.
Teaching, training and presentation:

- Recovery and Social Inclusion: Delivered to regional psychology team
- Presentation of SRRP (see below): Delivered to participating team.
- Presentation of SRRP: Delivered to Deputy Director of Trust.

Research and service development:

- Service-Related Research Project (see this Volume): Performance management in an Assertive Outreach Team: Subjective experiences of team members and implications for client contact time
- Sussex Service-User Involvement Project (see Appendix A)
Extended assessment, formulation and psychoeducation in a Cognitive Model for a male in his late twenties presenting with anger and fear responses to his first experience of psychosis

Case Report One Summary

Adult Mental Health

April 2008
Year One
Extended assessment, formulation and psychoeducation in a Cognitive Model for a male in his late twenties presenting with anger and fear responses to his first experience of psychosis

Case Report One Summary¹

Referral and presenting problem
Tim was referred to the Assertive Outreach Team (AOT) by the Specialist Registrar following an assessment requested by his GP. The referral letter suggested a diagnosis of Paranoid Schizophrenia coupled with a pattern of disengagement from mental health services and non-adherence with a medication regime.

On our first meeting, Tim explained that he wanted to ‘sort out the confused and jumbled information in his head’. This was quickly followed with an expression of fear about what the future held for him as a ‘Paranoid Schizophrenic’. Tim liked the place that he was living and had virtually eliminated all sources of stress in his life. This is significant as he cited stress as the triggering factor for a variety of negative thoughts, feelings and behaviours. Tim recognised that he was ‘hibernating’, having ‘removed himself from society’.

Tim explained that he alternated between having an overactive imagination and feeling a sense of emotional numbness. He also experienced a ‘presence’ daily, particularly when stressed, upset or angry. He does not hear any discernable speech; rather, it is manifested as a painful pressure in his temples accompanied by ‘white noise’. Tim thought it possible that this was a protective mechanism to warn him of emotionally-charged situations, however, he also thought it might attempt to be controlling of him possibly resulting in an aggressive reaction.

Assessment

¹ A complete copy of this report can be found in Volume Two of the Portfolio
Tim's care coordinator and the AOT psychologist emphasised the importance of engaging Tim, by allowing him to speak about his experiences in a non-judgemental context to promote a collaborative understanding. Following an introductory meeting with my supervisor, I went on to visit Tim independently. I assessed Tim over our first four sessions, taking a cautious approach to ensure the development of trust and rapport. Throughout this process, I fed back to the AOT by way of detailed process notes in Tim's file.

A formal risk assessment had been conducted for Tim by the AOT. Tim had attempted suicide four years previously, with no further incidences of self-harm or suicide attempts since. However, Tim continued to report feelings of anger towards himself in response to stressful or emotional situations and, therefore, the potential remained for him causing harm to himself following the exploration of difficult issues in sessions. His emotional arousal was assessed at the end of each session and Tim was encouraged to use his existing effective coping strategies.

Formulation
It was intended that my work with Tim would culminate in a collaborative and detailed formulation. The model described by Garety et al. (2001) was considered a useful framework within which to understand Tim's difficulties as it is flexible enough to incorporate multiple theories (e.g. Social Ranking Theory, Relating Theory and Attachment Theory) in a complex understanding of the origins and maintenance of his presentation.

Intervention
Sessions 1-4: Engagement and assessment
Clients experiencing psychosis are historically difficult to engage in mental health services (Sainsbury Centre for Mental Health, 1998). Tim's Care Coordinator felt that the priority for working with Tim was to gain his trust and enable him to speak about his experiences. My supervisor suggested that I refer to the work of Romme and Escher (1993) for guidance on having conversations with clients about their experiences of psychosis.
I did not make notes during my sessions with Tim, as I did not want him to feel that he was being 'assessed' or 'recorded'. Diagrammatic techniques such as genograms and timelines appeared to facilitate some distance between Tim and the difficult experiences that he was disclosing and they also served to hold his attention and focus.

Sessions 4-8: Collaborative formulation

By session four, I felt that Tim and I had created a safe enough space to begin to explore his difficulties in a more structured way and we began to negotiate session agendas more collaboratively. I began to introduce the cognitive model to Tim by formulating around recent situations and highlighting links between possible core beliefs and conditional rules and assumptions (Morrison, 2004). This facilitated a conversation around some of the avoidant behaviours that Tim engaged in, manifest in Tim's social isolation, fuelled by the fear that he would become angry or upset and lose control over his own actions. We explored an example of this using an ABC approach (Johnstone & Dallos, 2006).

After working through a number of examples, we realised that the situations in which Tim became highly emotional were characterised by a feeling that he was being treated badly, but was powerless to do anything about it. Tim recognised that such situations pushed his 'rage button', and we were able to conceptualise this as a trigger linked to his core beliefs. The identification of a 'theme' running through the situations that Tim responded angrily to seemed to reassure him that he was not randomly aggressive, that his behaviour was understandable and meaningful, and that he had some control over it.

Throughout our sessions, I used Socratic questioning to encourage Tim to generate the therapeutic material. We worked practically, hypothesising diagrammatically on paper, and collaboratively collated the content of all our conversations together for our final formulation.

Sessions 1-8: Psychoeducation

As Tim and I began to develop rapport, he started to enquire about some of the more commonly held beliefs about Schizophrenia portrayed through
popular media. Tim seemed to respond well to normalising approach, sharing information about the prevalence of voice-hearing in the general population (Tien, 1991; as cited in Morrison, 2004), the commonality of beliefs amongst the general population that could be labelled as 'delusional' (Verdoux et al., 1998; as cited in Morrison, 2004) and the acceptability of explanations other than 'madness' for experiences of psychosis (Romme & Escher, 1993).

Outcome
My supervisor and I developed an assessment / therapeutic letter summarising my conversations with Tim and the understandings that we had reached together. It also included reflective passages in italics including my observations, Tim’s comments in response to these observations and further prompts to think about. The letter with some recommendations for how he might continue with the work that we had begun, and he remains engaged with the AOT and aware that he can access the AOT psychologist if he chooses.

References


Neuropsychological assessment with a sixty-year old male presenting with anxiety regarding perceived deterioration in his cognitive functioning

Case Report Two Summary

Adult Mental Health

September 2008
Year One
Neuropsychological assessment with a sixty-year old male presenting with anxiety regarding perceived deterioration in his cognitive functioning

Case Report Two Summary

Referral and presenting problem
Malcolm was verbally referred to psychology services by his Specialist Registrar following an outpatient appointment during which he presented with anxiety. The Specialist Registrar was able to establish that Malcolm's anxiety was rooted in concerns that he had regarding his cognitive functioning. Primarily, Malcolm felt that his general intellectual ability and his memory particularly were deteriorating and he was very concerned about the impact that this was having on his daily functioning. The referral question to be addressed for Malcolm was largely diagnostic and specifically around exploring the possibility of the onset of dementia.

Malcolm reported difficulties with his memory, significantly worsening in the past seven to eight years, which were most noticeable in his daily work as a taxi driver. Malcolm had employed a number of strategies to help him to manage these difficulties. Malcolm explained that his difficulties were significantly worse when he was tired and reported having to go home from work on occasion as he felt too mentally fatigued to continue.

Malcolm had recently lost his father who had suffered with dementia before passing away at the age of 95. Malcolm described his fear that he was also developing dementia. Malcolm felt that his memory and general intellectual abilities had deteriorated significantly relative to what they had been in the past.

Assessment
A detailed personal and medical history was taken and the following neuropsychological tests were selected for administration:

2 A complete copy of this report can be found in Volume Two of the Portfolio
• Wechsler Test of Adult Reading<sup>UK</sup> (WTAR; The Psychological Corporation, 2001)
• Wechsler Adult Intelligence Scale<sup>UK</sup> (WAIS-III; Wechsler, 1997)
• Wechsler Memory Scale<sup>UK</sup> (WMS-III; Wechsler, 1998)

Formulation
Based upon Malcolm’s account of his presenting problem, his medical and personal history and the relevant literature, it was hypothesised that Malcolm’s performance on neuropsychological tests would indicate general deterioration relative to his estimated pre-morbid level of functioning, most evident in the domains of working memory and processing speed.

The findings from the neuropsychological tests administered indicated that Malcolm is functioning in the ‘Average’ to ‘High Average’ range compared to others of his age and that his scores are consistent with those predicted from estimates of his pre-morbid functioning.

It was possible that Malcolm had become accustomed to a systematic way of working in his previous career which involved regular planning and recording of his schedule. Malcolm cited his difficulties as noticeable over the past seven to eight years, which corresponded with his change of job and the time that he stopped using his diary. Therefore, it might be hypothesised that the difficulties reported by Malcolm had been in existence for many years but had been disguised by the use of his diary, which when stopped, highlighted his difficulties in quite a dramatic way.

In the context of Malcolm’s father’s difficulties and his own medical history, it appears that he became very anxious at this time around the possibility of developing dementia. He then became highly vigilant of his cognitive abilities and seems to have interpreted his observations as evidence that his memory was deteriorating. This in turn increased his anxiety, which in turn impacted upon his cognitive functioning, and so on. It is possible that this became a maintaining cycle for Malcolm.
Intervention and Outcome
There did not appear to be adequate evidence to suggest that Malcolm was experiencing the onset of dementia. A full written report was sent to Malcolm and it was recommended that he attend for routine re-testing in one to two years time in order to identify any possible deterioration.

References


Children and Families
Summary of Placement Experience


Service: Child and Family Consultation Service

Client group: Children from birth to 18 years old and their families.

Presenting difficulties:
Anxiety, panic, phobia, depression, anger, behavioural difficulties, bereavement, neuro-developmental difficulties (including organic and/or genetic conditions from birth and as the result of illness), learning difficulties, Chronic Fatigue Syndrome, Attention Deficit Hyperactivity Disorder, Autistic Spectrum Disorder (including Asperger’s Syndrome), disrupted attachment resulting in disordered eating and failure to thrive.

Therapy models:
- Cognitive-Behavioural Therapy
- Narrative Therapy
- Cognitive-Developmental approach
- Systemic approach
- Psychoeducation

Settings:
Outpatient, GP surgeries, client’s home, schools.

Assessments:
Neuropsychological assessments, assessments for individual Cognitive-Behavioural Therapy, assessments for group Cognitive-Behavioural Therapy, systemic assessments with families, risk assessments.

Interventions:
Individual CBT, group CBT / Narrative Therapy, consultation to families, clinical teams and schools following neuropsychological assessments,
consultation to health visitors, systemic consultations, referral to Child Protective Services.

Teaching, training and presentation:
  • 'A four year-old girl exhibiting non-organic failure to thrive': Delivered to psychology department meeting.
  • 'Anxiety management group for 7-10 year olds using an integrative therapeutic approach': Delivered to MDT business meeting.
  • Implications of results of Lock Assessment: Delivered to Play Therapy Workers.
  • Consultation to Primary Mental Health Worker in devising program for parent group to parallel Anxiety Management Group for children.

Research and service development:
  • Development of Anxiety Management Group Program. Full program and materials left as model for future use.
  • Data collection and entry for CAMHS Outcome Research Consortium and work with assistant psychologists to maximise response rates.
An anxiety management group for 7-10 year olds using an integrative therapeutic approach:
Case Report Summary

Children and Families

April 2009
Year Two
An anxiety management group for 7-10 year olds using an integrative therapeutic approach:

Case Report Summary

Referral and presenting problem

Referrals were received to a CAMHS team of 7-10 year olds presenting with a range of anxiety-related difficulties.

Assessment

Screening interviews were conducted. Key areas to be assessed in screening were:

- Is anxiety the child's primary presenting difficulty?
- Is anxiety the result of something that cannot be adequately addressed in this particular group setting, e.g. trauma, obsessive-compulsive difficulties?
- Are there serious risk or child protection issues that require stabilisation before participation in a group can occur safely?
- Is the child's level of anxiety so great as to make the group setting traumatic and unlikely to be helpful at this stage?
- Is the child developmentally able to engage with the content of the group?
- Are there cultural or ethnic factors (e.g. English not the child's first language) that might make it difficult for the child to engage in the group?
- Can both child and parent(s) be available for six consecutive weekly groups?
- Are both child and parent(s) motivated and ready to engage in therapy?

A relatively wide inclusion criterion was adopted for the AMG, providing that the child was within the specified age-range and met the screening criteria.

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3 A complete copy of this report can be found in Volume Two of the Portfolio
Formulation
A group formulation was adapted from Carr (1999), although some adaptations were made to make it relevant to the AMG. Carr (1999) includes biological factors, factors pertaining to family interactions with services, and factors relating to the cognitive style and personality of parents in a comprehensive formulation of child anxiety difficulties. It was not considered appropriate to include these factors in the AMG formulation as adequate information was not gathered in screening assessments to make inferences in these areas. Family systems factors were taken into consideration and are included here. However, as previously stated, the parental group was designed to teach the skills necessary to support children in the home environment and was not a family therapy intervention.

Intervention
An Anxiety Management Group (AMG) was provided in a CAMHS outpatient setting for 7-10 year olds presenting with a range of anxiety-related difficulties. The therapeutic approach was integrative drawing on cognitive-behavioural, psycho-educational and narrative techniques. Therapy was delivered in six weekly sessions lasting for an hour and a half each. The group was facilitated by a second year trainee clinical psychologist (myself) and two assistant psychologists. A parallel parents' group was provided (facilitated by a primary mental health care worker and an assistant psychologist), the program for which was matched with the program for the AMG. The objective for the parents group was to provide the same psychoeducation the AMG to ensure that the implementation of skills would be well supported between sessions and more likely to generalise to the home environment. Whilst some attention was given to the maintaining and protective roles that families can play, this was not a planned family therapeutic intervention as it was not considered appropriate to address complex issues relevant to specific families in the group setting.

Outcome
The children attending the AMG and their parents were asked to complete two questionnaire measures both before the group commenced and at the one-month follow-up group. These were the Strengths and Difficulties Questionnaire (SDQ: Goodman, 2001) which was completed by the parent(s),
and the Spence Children’s Anxiety Questionnaire (SCAS: Spence, 1998) which was completed by the child. Improvements were observed on standardised measures and anecdotally reported by parents and children.

References


People with Learning Disabilities
People with Learning Disabilities

Summary of Placement Experience

**Dates:** 4th April 2009 – 25th September 2009

**Service:** Community Team for People with Learning Disabilities / Positive Behavioural Support Team

**Client group:** Adults of working age with Learning Disabilities.

**Presenting difficulties:**
Challenging behaviour, communication difficulties, Autistic Spectrum Disorder, anxiety, self-harm, Obsessive Compulsive Disorder, queried personality disorder, low mood, first episode psychosis, relationship / familial difficulties, parenting difficulties, post-traumatic stress symptoms.

**Therapy models:**
- Positive Behaviour Support
- Narrative Therapy
- Systemic approach

**Settings:**
Outpatient, client's home, residential settings, day services, schools.

**Assessments:**
Neuropsychological assessments, long-term functional assessment and functional analysis, assessment for individual Narrative Therapy, assessment to inform appropriate placement, parenting assessment, risk assessments.

**Interventions:**
Individual Narrative Therapy, consultation to families, clinical teams, schools and residential settings following neuropsychological assessments, systemic consultations with families, development of behaviour support plans based upon functional analysis and training in techniques to residential settings.
Teaching, training and presentation:

- Working with dysexecutive symptoms in clients with a diagnosis of Down Syndrome: Delivered to staff at supported living centre.
- Implementation of behaviour support plan: Delivered to staff at day placement.

Research and service development:

- Data collection and entry for national prevalence study of challenging behaviours.
Narrative Therapy with a twenty-five year old female, diagnosed with a mild learning disability and presenting with anxiety, obsessive compulsive and self-injurious behaviours and a queried diagnosis of 'Emotionally Unstable Personality Disorder':

Oral Case Presentation Summary

People with Learning Disabilities

September 2009
Year Two
Narrative Therapy with a twenty-five year old female, diagnosed with a mild learning disability and presenting with anxiety, obsessive compulsive and self-injurious behaviours and a queried diagnosis of ‘Emotionally Unstable Personality Disorder’:

Oral Case Presentation Summary

Referral and presenting problem
Charlotte was a 25 year-old female with a diagnosis of mild learning disability who was referred to psychology by the Consultant Psychiatrist. In his referral, the psychiatrist explained that he felt that Charlotte would benefit from therapeutic input regarding her difficulties with anxiety, obsessive-compulsive behaviours and self-injurious behaviours. He had also suggested a diagnosis of ‘Emotionally Unstable Personality Disorder’ due to Charlotte’s accounts of repeated patterns of intimacy, dependency rejection and abandonment in relationships. Charlotte had not previously had any therapeutic input for these difficulties.

Assessment
When my clinical supervisor met with Charlotte for an initial psychology assessment, she was struck by the story that Charlotte told about herself. This was a story that was dominated by themes of Charlotte being difficult, demanding, dependent, burdensome and unable to cope with adversity and unable to maintain healthy relationships. The stories that Charlotte told about others (primarily her family) were dominated by themes of intolerance, lack of understanding and failure to respond to Charlotte’s needs. These themes were evidenced by Charlotte in numerous examples of events from childhood to the present which she gave as examples of these problematic aspects of her character and her relationships. The narrative that Charlotte presented seemed extremely well-rehearsed and completely accepted as truth by her.
Formulation
If we are to understand formulation as an explanation of the causes (predisposing, precipitating and maintaining factors) of a client's 'problem' which indicates the priorities for therapeutic intervention (Butler, 1998; as cited in Harper & Spellman, 2006), then formulation as a concept could be argued not to fit particularly well with Narrative Therapy as an approach within the social constructionist tradition.

Harper and Moss (2003; as cited in Harper & Spellman, 2006, p. 102) "If clinical work is seen as a series of dialogues or conversations, then a therapist's formulation is one person's story (their story) and account of that conversation. From this viewpoint, a formulation is a structured story for therapists and clients which gives one account of why things are the way they are and what might need to happen for things to change. It provides an organising story which orients therapist and client towards ways forwards".

Formulations are stories which are constructed rather than discovered, and it is the usefulness and fit for the client that is most important. Narrative therapists see formulation and therapy as interwoven. One way to record this ongoing process is with the use of therapeutic maps (White, 2007).

Intervention
Using therapeutic maps, Charlotte and I worked on 'thickening the narrative' of Charlotte as brave, someone who faced difficult circumstances and coped with them, someone who had great strength and experience to draw upon.

Outcome
For Charlotte, a successful outcome came in the shape of spending a day at Chessington World of Adventures, completely independently, with a friend rather than a support worker. Charlotte thought that, if therapy had been successful, others would notice that she needed to make contact less often for reassurance. She thought that it would be particularly significant if she were able to cook an entire meal without having to telephone her lead support worker throughout for reassurance, and the support worker in question confirmed that this would be quite significant. She achieved both of these goals.
References

Older Adults
Older Adults
Summary of Placement Experience

**Dates:** 14th October 2009 – 26th March 2010

**Service:** Older Adults Clinical Psychology and Neuropsychology Service

**Client group:** Older adults 65 years of age and above.

**Presenting difficulties:**
Anxiety, panic, Obsessive-Compulsive Disorder, depression, psychosis, dementia (Korsakoff’s Syndrome, Frontotemporal, Vascular, Alzheimer’s Disease), challenging behaviour,

**Therapy models:**
- Cognitive-Behavioural Therapy
- Psychodynamic approach
- Systemic approach
- Motivational models
- Psychoeducation

**Settings:**
In-patient acute psychiatric care, in-patient rehabilitation / continuing care, outpatient, client’s home, residential settings.

**Assessments:**
Neuropsychological assessments, assessments for individual Cognitive-Behavioural Therapy, assessments for group Cognitive-Behavioural Therapy, assessments for Cognitive Stimulation group, functional behavioural assessments and functional analysis, carer assessments, risk assessments.

**Interventions:**
Individual CBT, CBT group therapy, Cognitive Stimulation group, Mindfulness, consultation to clinical teams following neuropsychological assessments, systemic consultations to families and residential settings, development of
behaviour support plans based upon functional analysis and training in techniques to residential settings.

Teaching, training and presentation:

- Health of the Nation Outcome Scale 65+: Delivered to nurses, ward managers, occupational therapists and health care assistants.
- Delivering modular therapeutic group for inpatient older adults presenting with functional mental health problems: Delivered to nurses.

Research and service development:

Development of eight session, modular therapeutic group for inpatient older adults presenting with functional mental health problems. Development of session programmes, development of session materials, development of outcome measures.

Evaluation of preliminary outcome data relating to modular therapeutic group for inpatient older adults presenting with functional mental health problems.
Assessment and consultation to an inpatient ward team regarding a seventy-five year old male with a diagnosis of Frontotemporal Dementia presenting with 'Challenging Behaviours'

Case Report Summary

Older Adults

April 2010
Year Three
Assessment and consultation to an inpatient ward team regarding a seventy-five year old male with a diagnosis of Frontotemporal Dementia presenting with ‘Challenging Behaviours’

Case Report Summary

Referral and presenting problem
Douglas was a seventy-five year old retired man. Douglas was referred to the psychology service by the manager of the dementia assessment ward to which he had been admitted under Section 2 of the Mental Health Act. The referral requested an assessment of a number of Douglas's behaviours which were experienced as 'challenging' by the ward clinical team. Following an incident that occurred between Douglas and a female resident at the Elderly Mentally Infirm (EMI) home in which he was living, Douglas was subject to an ongoing police investigation.

The behaviours displayed by Douglas identified as 'challenging' in consultation with the ward clinical team were:

1) Sexually explicit verbal outbursts
2) Sexually inappropriate behaviours towards female members of staff and female patients on the ward, specifically, placing his hand in the groin or breast area of these individuals.
3) Verbally and physically aggressive behaviours, specifically, attempting to hit out at members of staff

The clinical team had reported difficulties in understanding and responding to these behaviours and the ward manager expressed concerns regarding the potential of these behaviours to cause difficulties in accessing a residential placement for Douglas following his discharge from the ward. Douglas's son Graham and daughter-in-law Isla reported similar concerns.

5 A complete copy of this report can be found in Volume Two of the Portfolio
Assessment
A direct therapeutic intervention with Douglas would not have been appropriate at the time of referral due to Douglas's acute cognitive difficulties and the nature of the referral question. In consultation with my clinical supervisor, it was agreed that my assessment should be conducted indirectly with key involved parties in order to inform consultation to the ward clinical team who would be responsible for implementing recommendations for intervention.

The following sources of information were used for the assessment:

- Interviews with Dementia Assessment Ward Manager
- Interviews with Occupational Therapist
- Review of available past notes and correspondence
- Interviews with Douglas's son and Daughter-in-Law
- Interview with Unit Manager, EMI Residential Home
- Structured observations of Douglas on Dementia Assessment Ward

Due to the circumstances under which Douglas was admitted, a multidisciplinary complex risk-assessment was conducted immediately on his arrival. The outcome of this was that Douglas was subject to one-to-one constant observation. The ongoing police investigation presented some obstacles to the initial engagement of Douglas's family members and the ward team. Both parties expressed concerns regarding the way in which the information I gathered would be used. The Detective Sergeant leading the investigation was keen to know whether the resulting report would be made available to her. It was clear that there was a need for absolute clarity around my involvement, primarily that:

- The purpose of my assessment was to inform the clinical care of Douglas only
- There would not be an assessment of his cognitive function or mental capacity
- The assessment would not serve as a court report; this was outside of my level of competence
I would not speak with the Detective Sergeant about Douglas; all queries should be directed to his Consultant Psychiatrist

The report resulting from my assessment would not be made available to the police, however, it was possible for the police to access the report by requesting access to his medical notes as part of a criminal investigation.

These parameters and details of how they had been communicated to everyone involved were recorded in Douglas's notes before I commenced assessment.

Formulation
The format for the formulation was taken from McGill (1993) and was chosen due to its accessibility to all interested parties. It describes the way in which challenging needs and challenging environments interact to generate challenging behaviour.

Douglas's primary 'Challenging Need' was his diagnosis of Frontotemporal Dementia (FTD). Whilst Douglas could be considered to be organically predisposed towards some of his challenging behaviours, it was hypothesised that the displaying of these behaviours was functional as opposed to a random manifestation of underlying neurological processes.

Intervention
A decision was made to use Positive Behavioural Support (PBS: Carr et al., 1990; Horner et al., 1990; LaVigna & Donnellan, 1986) as a guiding philosophy for intervention with Douglas.

In accordance with the PBS philosophy, an individualised multi-component intervention plan was developed using a framework designed by LaVigna & Willis (1995) taking into consideration the proactive strategies of ecological changes, positive programming and focused support. Reactive strategies were given less emphasis but recommendations were provided for situational management. This intervention was presented in narrative form in a Psychology Assessment Report which was distributed to the Consultant.
Psychiatrist, Care Coordinator, Occupational Therapist, Ward Manager, Next of Kin, GP.

**Outcome**

As a team, we agreed that a successful treatment outcome would be represented by a reduction in the frequency and severity of incidents of challenging behaviour evidenced through the ward's untoward incident recording system, and by Douglas's scores on the Dementia Care Mapping tool (DCM: Kitwood & Bredin, 1993).

It is not possible for me to comment on the process or outcome of intervention as the completion of my report coincided with the completion of my placement. It was unfortunate that I was not able to consult with the ward team throughout the intervention phase but I was pleased to receive a recent update indicating that incidents of challenging behaviour have reduced significantly. As the role of Clinical Psychologists continues to move towards indirect consultation, it may be necessary for me to develop tolerance with regards to not being present for the duration of an intervention.

**References**


Advanced Competencies
Advanced Competencies
Summary of Placement Experience

**Dates:** 7th April 2010 – 30th September 2010

**Service:** Department of Community Mental Health, HM Royal Navy

**Client group:** All clients are serving members of the UK armed forces and are adults of working age. The DCMH serves a catchment area rather than a specific service, so clients can be members of the Army, Navy or RAF.

**Presenting difficulties:**
Presenting difficulties largely replicate those seen in a civilian CMHT, although clients with experiences of Child Sexual Abuse and those with a diagnosis of PTSD are perhaps more common in this setting than might be found in a civilian CMHT. Work in this setting has a large occupational component and the DCMH has dual responsibilities to individual clients and to the UK Armed Forces as a whole. The occupational status of clients must be continually monitored and reviewed during therapeutic work and DCMH liaises closely with clients’ Chain of Command to ensure the management of risk for both the client and the wider service.

**Therapy models:**
The DCMH as a whole work primarily from a CBT approach. Adherence to NICE guidelines for evidence-based interventions is emphasised in this service, but there are opportunities to work creatively under specialist supervision. Knowledge of presentation specific models of CBT is important for this placement, particularly CBT for PTSD. EMDR is also used widely in this service and it would be possible for a trainee to complete Level One training during a placement.

**Settings:**
Outpatient and outreach to client’s place of work.
Assessments:
Neuropsychological assessments, assessments for individual Cognitive-Behavioural Therapy, occupational risk assessments.

Interventions:
Individual CBT, consultation to clinical teams following neuropsychological assessments, systemic consultations to Chain of Command in client’s occupational setting.

Teaching, training and presentation:
Models of Reflective Practice: Delivered to nurses

Research and service development:
One day per week formal consultation to 'Shackleton Project', intensive rehabilitation and return to work programme.

Re-development of programme including review of historical outcome data, development of referral criteria, assessment protocol, programme design, outcome measurement, analysis and interpretation of outcome data, production of formal report detailing re-development.
Research Dossier
Performance management in an Assertive Outreach Team: Subjective experiences of team members and implications for client contact time

Service-Related Research Project

July 2008
Year One
ABSTRACT

Introduction
The modern NHS is moving towards creating a culture of performance management. The trust upon which the present study focuses is actively working towards achieving Foundation Status and creating a culture of performance management. This has impacted upon Assertive Outreach Teams in the area for whom caseload targets were implemented in 2006.

The present study explores the AOTs subjective experience of being performance managed and investigates differences in client contact time before and after the implementation of the caseload target directive.

Methodology
The subjective experience of the team was explored using a focus group methodology and analysed using Interpretative Phenomenological Analysis. Quantitative data pertaining to client contact time was accessed from the trust database and analysed with independent t-tests using SPSS.

Results
The main themes emerging from analysis of focus group data were the importance of clarity in communication, access to information and recognition of the immediate impact of performance management decisions at service-delivery level, particularly with regards to team identity and fidelity to the AOT model. Quantitatively, per client per week average contact time (arguably the measure of interest) with clients had not decreased significantly following implementation of the caseload target directive.

Discussion
It appears that better communication between executive and service-delivery teams might highlight some commonalities in experiences of performance management, thus promoting increased cohesiveness and improved dynamics. Better communication and easier access to information may also be a first step to teams owning their performance management and reclaiming identity and autonomy.
Introduction

Performance Management in the NHS

Performance management specialists Actuate Corporation (2008) note that, historically, large amounts of data have been collected by healthcare facilities serving primarily to satisfy regulatory and accreditation bodies whilst little organisational change has resulted. However, “healthcare organisations now recognise the need to merge the accepted practice of outcomes management and process management into a more comprehensive approach – Performance Management. This takes into consideration the wide range of key performance indicators that impact the success of an organisation” (Actuate Corporation, 2008, ¶ 5).

The move towards creating a culture of performance management in the NHS has resulted in a number of initiatives designed to identify those areas in need of quality improvement. The UK Healthcare Commission is integral to this process and in 2006, published the results of the first Annual Health Check (Healthcare Commission, 2006). Despite improvement in some areas, a significant number of trusts failed to meet performance targets and PCTs in particular were highlighted as struggling to meet performance requirements.

The trust which is the focus of the present study serves a catchment population of 1.5 million people. According to the Healthcare Commission (2007, ¶1) the trust “provided a good quality of service to patients. It was good at managing its finances. In a recent survey of trusts in England, patients rated this organisation as below average in terms of their overall experience”.

The trust is actively working towards achieving Foundation Status and creating a culture of Performance Management. One of the services that has experienced the impact of this is the Assertive Outreach Teams (AOTs).

Assertive Outreach services

The National Service Framework for Mental Health (Department of Health, 1999) includes guidance for the establishment and implementation of the Assertive Outreach Model for all Health Authorities by 2002:

Assertive outreach or assertive community treatment is a form of intensive case management that provides a clinically effective approach to managing the care of
severely mentally ill people in the community. Staff providing comprehensive assertive outreach care for clients will visit them at home, act as an advocate, and liaise with other services such as the GP or social services. Help is usually needed to find housing, secure an adequate income, and sustain basic daily living - shopping, cooking, and washing, for example. Opinion varies about the optimum staff-client ratio for assertive outreach. In some settings the ratio is a low as 1:12.

(Department of Health, 1999, p. 47).

Prior to 2006, the NSF target for the trust in the present study was simply that AOTs existed and met implementation guidance. However, in 2006 the PCT was subjected to a degree of pressure to enhance performance management of the AOTs in the area (Name anonymised [Deputy Director], personal communication, 11th January 2008). Thus, at the end of 2006, the Strategic Health Authority implemented caseload targets for AOTs, calculated as illustrated in Figure 1.

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**Estimation of catchment population potentially meeting criteria for AOT services using Mental Illness Needs Index (MINI: Glover et al, 1996)**

Based upon MINI figure for locality, funding of appropriate number of Care Coordinator posts based upon NSF recommendation of 10-12 clients per worker

MINI figure imposed by PCT Mental Health Commissioning Team as caseload target for the team

Implementation of financial penalties for failure to achieve and maintain caseload target by the PCT as part of 2007-2008 Service Level Agreement

**Figure 1: Calculation of caseload targets**

The resulting total caseload target for the area of interest in the present study was 245, with 105 allocated to the team that are the focus of the present study. This one team is split over two geographical bases and the required increase in caseload was higher for base one than for base two. The target for base one represented double the caseload for which the AOT was providing a service at the time (Name anonymised [AOT Leader], personal communication, 11th January 2008).
Statement of the Problem
Members of the AOT anecdotally report wide ranging ramifications of the introduction of caseload targets. In addition to general feelings of increased stress and lowered morale, the team cited implications for the degree to which the service was able to remain faithful to the AOT model. Considering that an adequate number of care-coordination posts had been funded to ensure caseloads of no more than 10-12 per AOT professional (see Appendix A for team breakdown), it was important to explore why the increases in caseload had been experienced in this way.

The team had not had access to a protected space in order to express their views and the subjective experiences of the AOT professionals had not been qualitatively explored and quantitative data pertaining to the possible impact on the amount and use of client contact time had not been accessed. It was important to the team that both their subjective experiences of the process and any measureable impact upon their work was communicated at executive level in the anticipation of further performance management initiatives in the near future.

Qualitative research questions
1) What were the subjective experiences of individual team members and the team as a whole before, during and after the implementation of the caseload target directive?
2) How did individual team members and the team as a whole make sense of the experience of being performance managed in this way?

Quantitative research questions
1) Has direct contact time with individual clients decreased since the caseload target directive was implemented?
Hypothesis 1 (one-tailed): Direct contact time with individual clients will be significantly less for a three month period after the implementation of the caseload target directive (post-test) compared to a three month period before the implementation of the caseload target directive (pre-test).

2) Has the way in which AOT professionals use their time changed since the caseload target directive was implemented?
Hypothesis 2 (one-tailed): indirect contact time with individual clients will be significantly more for a three month period after the implementation of the caseload target (post-test) directive compared to a three month period before the implementation of the caseload target directive (pre-test).
Methodology
This study is a mixed methods design. The methodology section will address the qualitative and quantitative research questions separately.

Qualitative research questions
Participants
Participants were a purposively sampled group who responded to an introductory email sent to all members of the AOT. This group numbered eight AOT professionals of various disciplines. Four had been working in the team when the caseload target directive was implemented and four had joined since. Of the total eight, three were care-coordinators. It was not considered appropriate to apply exclusion criteria based upon role or time working with the AOT as there were no grounds to assume that the impact of the directive had only been experienced at care-coordinator level, or that it was not relevant for those who had joined the team after implementation.

Data collection
Data was collected via a focus group. This allowed for the time efficient collection of a large amount of data which was important in a busy NHS service. It was hoped that the group dynamics would elicit the most salient themes and that the discussion of difficult professional issues would be eased by the supportive group setting. Whilst it was desirable for the focus group to reflect the multi-disciplinary composition of the AOT, it was important to consider the possible implications of the nature of the group (i.e. mixed roles and possible power relationships between professionals) for the content of the conversations that occurred (Robson, 2002).

Procedures
The focus group was held at the team base. An introductory account was given (see Appendix B) and information sheets were distributed (see Appendix C). Participants were asked to give basic demographic information and to sign the information sheets as an indication of their informed consent to participate. The focus group was guided by a pre-prepared schedule (see Appendix B) which was subject to several redrafts with input from the field supervisor. Due to the emotive issues being addressed, the schedule began with broad questions to generate early conversations, moving towards more
specific questions that were suspected to be particularly relevant to the team. The focus group was video- and audio-taped for transcribing purposes; both the tape and transcription will be stored securely at the University of Surrey until 2010.

Analysis
The theoretical underpinnings of Interpretative Phenomenological Analysis (IPA) are consistent with the qualitative research questions in the present study, focusing on individual personal lived experience and how individuals make sense and meaning of these experiences. Therefore, IPA was selected as the most appropriate framework within which to address them.

The researcher in the present study spent a brief period on rotation with the AOT. It was necessary to consider the double hermeneutics operating in this work, in particular in the balance between empathic and critical hermeneutics (Ricoeur, 1970, as cited in Lyons & Coyle, 2007) and to be mindful of this throughout the analytic process.

Quantitative research questions
Participants
Data was sourced from the trust database. AOT members are required to record the length of each contact in minutes and to differentiate between direct and indirect contact. Direct contact refers to face-to-face meetings between professionals and staff, whereas indirect contact generally refers to telephone contact with the client or consultations with other involved professionals or carers.

Data Collection
Data was collected by running a query on the trust database. A request was made to the Information Department (see Appendix D) and was authorised by the Deputy Director of the trust.

Procedures
A request was submitted to the Information Department for:

1) Total hours of contact time between AOT professionals and AOT clients, per week from the beginning October 2006 to the end
December 2006 and per week from beginning October 2007 to end December 2007.

2) Total caseload per week from the beginning October 2006 to the end December 2006 and per week from beginning October 2007 to end December 2007.

Total contact time was then averaged over the caseload per week to give average contact time per client per week.

It should be noted that the three months directly before and directly following the implementation of the caseload target directive were not selected as the pre- and post-test measuring points as this occurred at a time when rates of annual leave are generally high.

Analysis
Exploratory data analysis indicated that assumptions of parametric tests were met and independent $t$-tests were conducted using SPSS to look for significant differences in client contact time at pre- and post-test. Similarly, independent $t$-tests were conducted to look for significant differences in the amount of direct and indirect contact time at pre- and post-test. It was considered appropriate to view the pre- and post-test data as independent as it was probable that the staff profile and professional climate of the team would differ between the two time points.
Results

The results section will address the qualitative and quantitative research questions separately. Output for the quantitative data analysis is organised by base to take into account the larger increase in caseload at base one.

Qualitative research questions

Preliminary readings of the transcript allowed the identification of a number of themes. Further readings revealed connections between some of these and allowed the emergence of a number of superordinate themes. Within each superordinate theme, a number of sub-themes were identified. Superordinate themes and sub-themes were organised into a summary table including illustrative quotations (see Table 1). Due to the word-limit, it is not possible to provide an analytic narrative here. The full transcript is not included as an appendix but is available on request from the researcher.
and around social isolation and occupation (f55-567)
you see what I mean, it's [kind] of like if your [occupation] is to do [planned] people, or work that
I guess it's (just) because you impair those aspects of ATl functioning and that we want to do now.

Building relationships with others and being in a healthy social circle helps the island, the island.
It's not just your school. ATl is generally a model of something like a health circle.
so these are maybe how you think of something. We know what was it assumed in the model (f55-567).

I think the model of being a healthy social circle at school maybe that fact that
so when you think of that, it's not the circle at school. It's more like to organize some of the

and that many of the ATl skills are also in the social world of the groups and

whereas the social circle concerned where people are in the circle that we should do in our environment. It seems to

I think they can function as ATl (f55-567).

(Two iterations)

We and what, where me is of course I don't really know anything about people's worries and in our meeting

we don't know if they know that kind of thing. We're not doing any research, so to speak, to get of the circle and

the kind of thing that's happening. Some of the research and some of the experience that we have is not

clearing of the circle. Knowledge of things that we're not sure of. It is not that we know the exact

and that you know the exact things that are knowledge of the circle.

If you think about some of the experiences of the ATl model of the way you know the part of it is a model.

ACT model (f55-567)

This was being for multidisciplinary reasons being solid, slow, more and more away from something
towards the

(Two iterations)

A key (f55-567)

We are not that kind of what we're doing to that kind of course. They were trying to get in there

we're not to be doing this kind of looking at kind of course kind of about our experiences a second. If

the line is doing it to some, what we're saying. (f55-567)

With the amount of skill we have and the amount of career that are expected of us (f55-567)

The key factor is that the model that is becoming more in people and the idea was more that what

fit to the ACT model
there now people. (nrs 14:25).
the you set it XXXX the it was very something that was kind of drawing boxes in a way by going to set it.

It is in terms of the consultants, not. I don't know how you've experienced it because you weren't there but

and the other thing that my point of view was least into account was the particular discipline of

closure in the product. I remember that we were kind of in terms of learning in a hurry we kind

I think we were slightly more sort of aspiring as a team and sort of will find a way of doing with this.

You found yourself actually and you either take them or you're back where learning in you having a job.

I've been through the XXXX but I couldn't do anything and change and you feel really unresolved and

In the teamwork from the is really mind numbing and stage and you feel really unresolved and

their emotional work. 86-125

In the emotional work. 86-125

Individual team members, emotional well-being

Research Dossier: Service: Related Research Project
We were all kind of speculating (lines 208-209).
<table>
<thead>
<tr>
<th>People's needs really doesn't appear to be any number or their doesn't really seem to be any number.</th>
</tr>
</thead>
<tbody>
<tr>
<td>People's needs really are going to number (issue 106-107)</td>
</tr>
<tr>
<td>People's needs really don't appear to be any number and there doesn't really seem to be any.</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Professional concerns</th>
<th>Discussion with numbers</th>
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<tbody>
<tr>
<td>How it could have been done</td>
<td>How it could have been done</td>
</tr>
<tr>
<td>37-78%</td>
<td>37-78%</td>
</tr>
<tr>
<td>and XXXX needs it for data, the point of it can tell you anything about clinical outcomes (e.g.)</td>
<td>and XXXX needs it for data, the point of it can tell you anything about clinical outcomes (e.g.)</td>
</tr>
<tr>
<td>I think in line with this, it also been done to more Medically validity, among other things, people the opportunity to get know a</td>
<td>I think in line with this, it also been done to more Medically validity, among other things, people the opportunity to get know a</td>
</tr>
<tr>
<td>Let more of the differences would make a huge difference (e.g. 24.7%.</td>
<td>Let more of the differences would make a huge difference (e.g. 24.7%.</td>
</tr>
<tr>
<td>The problem is with their data and they don't do anything about it</td>
<td>The problem is with their data and they don't do anything about it</td>
</tr>
<tr>
<td>So now, how come and go look at how he is doing it (e.g. 71.7%-73%).</td>
<td>So now, how come and go look at how he is doing it (e.g. 71.7%-73%).</td>
</tr>
<tr>
<td>Sounds to me people would have to look at this conclusion we understand the stresses of let</td>
<td>Sounds to me people would have to look at this conclusion we understand the stresses of let</td>
</tr>
<tr>
<td>In the conclusion we understand the stresses of let</td>
<td>In the conclusion we understand the stresses of let</td>
</tr>
<tr>
<td>Let more of the differences would make a huge difference (e.g. 24.7%.</td>
<td>Let more of the differences would make a huge difference (e.g. 24.7%.</td>
</tr>
<tr>
<td>37-78%</td>
<td>37-78%</td>
</tr>
<tr>
<td>and XXXX needs it for data, the point of it can tell you anything about clinical outcomes (e.g.)</td>
<td>and XXXX needs it for data, the point of it can tell you anything about clinical outcomes (e.g.)</td>
</tr>
</tbody>
</table>
Quantitative research questions

**Base one**

Table 2 shows descriptive statistics for base one. Direct, indirect and thus total mean client contact time increased at post-test reflecting the increase in caseload (see also Figure 2), although the degree to which this value is meaningful could be questioned due to the substantial deviation around the mean. Average per client per week contact time had decreased at post-test (see also Figure 3).

<table>
<thead>
<tr>
<th></th>
<th>2006</th>
<th>SD</th>
<th>2007</th>
<th>SD</th>
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</thead>
<tbody>
<tr>
<td>Direct contact</td>
<td>1646.54</td>
<td>600.18</td>
<td>2533.86</td>
<td>1064.26</td>
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<tr>
<td>Indirect contact</td>
<td>46.15</td>
<td>72.95</td>
<td>58.57</td>
<td>76.65</td>
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<tr>
<td>Total contact</td>
<td>1692.69</td>
<td>600.63</td>
<td>2592.43</td>
<td>1075.66</td>
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<tr>
<td>Per client per week average</td>
<td>48.38</td>
<td>17.84</td>
<td>41.08</td>
<td>17.03</td>
</tr>
</tbody>
</table>

**Figure 2: Mean client contact time pre- and post-test for base one**
Figure 3: Average per client per week contact time pre- and post-test for base one

The distribution of data pertaining to base one was confirmed as being not significantly different from normal (see Appendix E). Levene’s Test confirmed homogeneity of variance for the data pertaining to base one and inferential statistics were read with equal variances assumed.

Table 3: Independent t-tests for base one data

<table>
<thead>
<tr>
<th></th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
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<tr>
<td>Direct contact</td>
<td>-2.64</td>
<td>25</td>
<td>0.01&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Indirect contact</td>
<td>-0.43</td>
<td>25</td>
<td>0.67&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Total contact</td>
<td>-2.65</td>
<td>25</td>
<td>0.01&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Per client per week average</td>
<td>1.08</td>
<td>25</td>
<td>0.28&lt;sup&gt;d&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>a</sup> adjusted one-tailed = 0.00  
<sup>b</sup> adjusted one-tailed = 0.33  
<sup>c</sup> adjusted one-tailed = 0.00  
<sup>d</sup> adjusted one-tailed = 0.14

Table 3 summarises the results of the independent t-tests for base one data. When adjusted to reflect the one-tailed hypothesis, the increases in direct and total contact at post-test were shown to be statistically significant. Indirect and per client per week average contact time were not shown to be significantly different at post-test from pre-test.
**Base Two**

Table 4 shows descriptive statistics for base two. Direct and total mean client contact time was lower at post-test, although again, the degree to which this value is meaningful could be questioned due to the substantial deviation around the mean. Indirect mean client contact time had increased at post-test for base two, with a smaller deviation around the mean (see also Figure 4). Average per client per week contact time had decreased at post-test (see also Figure 5).

### Table 4: Mean and standard deviation values for client contact time pre- and post-test for base two

<table>
<thead>
<tr>
<th></th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$X$</td>
<td>$SD$</td>
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<tr>
<td>Direct contact</td>
<td>1087.69</td>
<td>332.61</td>
</tr>
<tr>
<td>Indirect contact</td>
<td>3.85</td>
<td>9.60</td>
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<tr>
<td>Total contact</td>
<td>1091.54</td>
<td>332.25</td>
</tr>
<tr>
<td>Per client per week average</td>
<td>36.52</td>
<td>10.99</td>
</tr>
</tbody>
</table>

**Figure 4: Mean client contact time pre- and post-test for base two**
The distribution of data pertaining to base two was confirmed as being not significantly different from normal for direct, total or per client per week average contact. However, the distribution of data pertaining to indirect contact for base two was indicated as significantly different from normal (see Appendix E). Levene’s Test confirmed homogeneity of variance for the direct contact, total contact and per client per week average data pertaining to base two, therefore, inferential statistics for this data were read with equal variances assumed. Levene’s Test indicated heterogeneity of variance for the indirect contact data and inferential statistics for this data were read with equal variances not assumed.

<table>
<thead>
<tr>
<th>Table 5: Independent t-tests for base two data</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Direct contact</td>
</tr>
<tr>
<td>Indirect contact</td>
</tr>
<tr>
<td>Total contact</td>
</tr>
<tr>
<td>Per client per week average</td>
</tr>
</tbody>
</table>

a adjusted one-tailed = 0.31
b adjusted one-tailed = 0.00
c adjusted one-tailed = 0.36
d adjusted one-tailed = 0.29
Table 5 summarises the results of the independent $t$-tests for base two data. When adjusted to reflect the one-tailed hypothesis, direct, total and per client per week average contact time were not shown to be significantly different at post-test from pre-test. Indirect contact was shown to be significantly higher at post-test from pre-test. Although the heterogeneity of the indirect contact data was taken into account, the data was not normally distributed so it cannot be considered to meet the assumptions of a parametric test. A non-parametric equivalent should be conducted to confirm significance.
Discussion

Key findings
The qualitative research questions in the present study were concerned with the subjective experiences of individual team members and the team as a whole before, during and after the implementation of the caseload target directive, and with how individual team members and the team as a whole made sense of the experience of being performance managed in this way. What emerged was the importance of clarity in communication, access to information and recognition of the immediate impact of performance management decisions at service-delivery level, particularly with regards to team identity and fidelity to the AOT model.

Quantitatively, per client per week average contact time (arguably the measure of interest) with clients had not decreased significantly following implementation of the caseload target directive. At base two indirect contact time had significantly increased, however, there are a number of possible methodological limitations that might reduce the degree to which the quantitative results can be confidently accepted.

Critical evaluation
There are a number of limitations involved in the present study. In sourcing quantitative information from the trust database it was understood that validity might be compromised by irregularities in patterns of inputting. The comparability of the pre- and post-test time periods was not explored in detail. Although particular months of the year were chosen in order to minimise the likelihood of substantial numbers of staff being absent due to annual leave, actual staff quotas for each year were not established. Additionally, sickness rates may have differed between years.

Ideally, a focus group would have been conducted at executive level in order to capture an alternative perspective on performance management in the trust. As detailed below, this was achieved somewhat in the process of disseminating the results.
Dissemination of results and service implications

The results of this research will be presented to those who participated at a team meeting in the near future. However, as a first stage to feeding back the results of the present study to key informants, a meeting was arranged between the researcher, the AOT psychologist and field supervisor, the Head of Acute Services and the Deputy Director of the trust.

This time was used primarily to discuss themes emerging from the focus group, however it was also valuable in providing the researcher with a broader understanding of the multiple levels over which the pressures of performance management are experienced. At executive level these pressures are experienced, for example, by the requirement to reduce spending by 3% per year whilst maintaining the same level of service (Name anonymised [Deputy Director], personal communication, 12th June 2008) and by consistent evaluation from organisations such as Monitor.

Based upon themes emerging from this research, it is possible that better communication between executive and service-level teams might highlight some commonalities in experiences of performance management, thus promoting increased cohesiveness and improved dynamics. Better communication and easier access to information may also be a first step to teams owning their performance management and reclaiming identity and autonomy.
References


## Appendix A

<table>
<thead>
<tr>
<th>Position</th>
<th>Whole Time Equivalent</th>
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<tbody>
<tr>
<td>Dr (Consultant)</td>
<td>1.00</td>
</tr>
<tr>
<td>Dr (Senior House Officer)</td>
<td>1.00</td>
</tr>
<tr>
<td>Dr (Staff Grade)</td>
<td>0.20</td>
</tr>
<tr>
<td>Team Leader</td>
<td>1.00</td>
</tr>
<tr>
<td>CPN (on secondment to AOT)</td>
<td>1.00</td>
</tr>
<tr>
<td>CPN (on secondment to AOT)</td>
<td>1.00</td>
</tr>
<tr>
<td>CPN</td>
<td>1.00</td>
</tr>
<tr>
<td>CPN</td>
<td>0.60</td>
</tr>
<tr>
<td>CPN</td>
<td>1.00</td>
</tr>
<tr>
<td>CPN</td>
<td>1.00</td>
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<tr>
<td>Social Worker</td>
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</tr>
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</tr>
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</tr>
<tr>
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</tr>
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</tr>
<tr>
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<td>0.67</td>
</tr>
<tr>
<td>Community Support Worker</td>
<td>1.00</td>
</tr>
<tr>
<td>Community Support Worker</td>
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</tr>
<tr>
<td>Administrative Assistant</td>
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</table>
Appendix B

SRRP Focus Group:

Introduction and background:

Firstly I'd like to welcome you to this focus group discussion and thank you for agreeing to participate in this study. I'm aware that you probably all know one another quite well already, but I'll briefly introduce myself. My name is [Name] and I'm a trainee Clinical Psychologist from Surrey University on placement at [Placement Location]. As part of this placement I've spent some time working with the AOT under the supervision of [Supervisor].

I'm particularly interested in the experiences of Mental Health Professionals working in the Assertive Outreach Team with regards to the recent introduction of caseload targets. I'll give you some background to how my interest in this developed; whilst working with the AOT, I discovered that prior to 2006, the externally prescribed National Service Framework target for the [NHS Trust] was simply that Assertive Outreach Teams existed and met implementation guidance. However, last year, [Primary Care Trust] was subjected to a degree of pressure to enhance performance management of the AOTs in [PCT]. Thus, at the end of 2006, [Strategic Health Authority] implemented caseload targets for the AOTs in [PCT]. The total caseload target for [PCT] was 245, with 105 allocated to [Team]. After listening to the anecdotal accounts of some team members, it occurred to me that the majority of people had fairly strong opinions on caseload targets and the way in which they affected the day-to-day operation of the AOT, and I wanted to find out more.

On completion of the project, I will be organising a session during which to feed back the findings to you and everyone will be welcome to this regardless of whether they participated in this group. I am also intending to provide [Deputy Director] with a copy of the report and I hope that it will be useful way for the team to communicate with him regarding how policy decisions are implemented at team level.

Please remember that there are no right or wrong answers today. I'm just interested to find out about your own thoughts and opinions. Broadly speaking, I'd just like to get an idea of what you know about caseload targets and to find out if they have impacted on you in your work, and if so, how. I'd like the group to have an interesting and useful discussion in a respectful but thought provoking manner, and in line with that, I've come up with some ground rules to ensure that people feel safe when sharing their opinions:

1) One person shares at a time
2) Everything spoken about within this group remains within this group
3) Feel free to respectfully challenge others

Is there anything else you'd like to add?

(sign consent forms)

Group Schedule

What comes to mind when I mention caseload targets?

What is the rationale behind caseload targets, as you understand it?

What is your understanding of how caseload targets are calculated?
Can you comment on the caseload target for your team? Is it appropriate?
Inappropriate?

Before caseload targets were introduced for this team, were you aware of the plans to implement this directive?

Do you have any recollections of the time when caseload targets were introduced for the team?
- Positive or negative?
- What would have made it easier / harder?

When caseload targets were introduced, were you able to access information regarding the rationale for this directive?
- Who did you contact?
- What was the response?
- How did you feel?

Were there any immediate effects on your daily working practices?
- What were these effects? What did they look like in practice?
- Referral patterns
- Use of staff time (i.e. assessments vs. ongoing clients)
- Contact time with clients

Are there any ongoing effects?
- What are these effects?
- How do they affect your day-to-day practice now?

On reflection, has the introduction of caseload targets impacted upon the AOT as a whole?
- What does it mean to you to function as an AOT?
- Can you function as an AOT?
- Does this affect how you feel about being part of an AOT?
Appendix C

Focus Group Information Sheet

Thank you for agreeing to participate in a focus group for a Service-Related Research Project looking at the impact of caseload targets on mental health professionals working in an Assertive Outreach service.

No prior knowledge is required for participation in this group. I’d simply like to get an idea of what you know about caseload targets and to find out if they have impacted on you in your work. The group will function as an informal discussion structured around a number of key questions designed to gather your views on all aspects of the caseload target directive.

Please read the following points carefully:

- Your participation in this group is confidential and you will not be identified in the final report; group members will be referred to as ‘Participant 1, Participant 2’ etc.
- You will be asked for some basic demographic information in order to provide an overall group profile (see overleaf). This information will not be linked to individual participants or their comments in the final report, and as such, will not serve as identifiable information.
- All participants should feel that the group is a safe and appropriate space in which to honestly express their opinions, therefore, it is expected that all members of the group agree that the content of the discussion will remain confidential. Differences of opinion will almost inevitably exist and group members should feel free to respectfully challenge others.
- If, at any point, you should decide that you do not wish to be involved in the group, you are free to withdraw.
- The group will be recorded to video tape to aid analysis. Content will be analysed on a group-wide basis whereby the most common points and themes will be identified. Individual members of the focus group will not be identified and their comments will not be attributed to them by name in the final transcript or report.
- The video tape of the focus group will be stored securely by the researcher throughout the analysis phase and, thereafter, stored securely at the University of Surrey. The only individuals with access to this tape will be the researcher and the member of the academic team responsible for supervising the research project.
- On completion of the project, the findings will be fed back to the team by the researcher and there will be an opportunity to ask questions and make comments. A copy of the final report including the transcript of the focus group will be provided for the team to keep.
- A copy of the final report including the transcript of the focus group will also be provided to the Executive Director and Deputy Director for

If you have any queries or concerns, please feel free to contact me at
Consent

I have read and understood the information above and I give my informed consent to participate in this research project.

Signed: Date:

Demographic Information

Job title:

Time in current post:

Care-coordinator? : Yes No
(Please circle)
Appendix D

Request for Workforce or Clinical Information

<table>
<thead>
<tr>
<th>Name:</th>
<th>Contact No.</th>
</tr>
</thead>
</table>

**Dept / Team:** Specialist Psychological Therapies ( |
Assertive Outreach Team ( |

<table>
<thead>
<tr>
<th>Date Requested:</th>
<th>Date Required:</th>
</tr>
</thead>
<tbody>
<tr>
<td>26/03/08</td>
<td>As soon as possible but latest 01/06/08</td>
</tr>
</tbody>
</table>

**Type:**

- Workforce [✓]
- Clinical [✓]

No personally identifiable data pertaining to individual employees or clients required

**Report required:** please include detail of the information required in the report e.g. employee number, name, admit date, etc.

**For Assertive Outreach Teams:**

1) Total hours of contact time between AOT professionals and AOT clients, per week from beginning October 2006 to end December 2006 AND per week from beginning October 2007 to end December 2007

(Hours of contact time between *individual* AOT professionals and their clients not required. Rather, the total number of hours and minutes that AOT professionals as a group spent in direct contact with clients per week)

2) Total caseload per week from beginning October 2006 to end December 2006 AND per week from beginning October 2007 to end December 2007

(AOT caseload varies on a weekly basis)

No personally identifiable data pertaining to individual employees or clients required

**Reason for Request:**
I am a Trainee Clinical Psychologist (Surrey University) working with the [redacted] NHS Trust Assertive Outreach Team (AOT) in [redacted]. I am required to undertake a piece of service-evaluation work as part of my Doctorate in Clinical Psychology. In addition to a one-off focus group that I am planning to conduct with AOT professionals to hear their views regarding the impact of caseload targets upon the team, I am hoping to look at average contact time with AOT clients before and after the introduction of caseload targets (with financial penalties).
Appendix E

Normality of distribution of data pertaining to base one:

- Direct contact: Kolmogorov-Smirnov Z = 0.46; $p \geq 0.05$
- Indirect contact: Kolmogorov-Smirnov Z = 1.24; $p \geq 0.05$
- Total contact: Kolmogorov-Smirnov Z = 0.54; $p \geq 0.05$
- Per client per week average: Kolmogorov-Smirnov Z = 0.72; $p \geq 0.05$

Normality of distribution of data pertaining to base two:

- Direct contact: Kolmogorov-Smirnov Z = 0.437; $p \geq 0.05$
- Total contact: Kolmogorov-Smirnov Z = 0.511; $p \geq 0.05$
- Per client per week average: Kolmogorov-Smirnov Z = 0.386; $p \geq 0.05$
- Indirect contact: Kolmogorov-Smirnov Z = 1.78; $p \leq 0.05$
Dear Laura,

Thank you for the interesting and useful presentation yesterday about your Service Related Research Project regarding caseload targets in the AOT. The team and I are very appreciative of this piece of work and we hope to take forward some of the ideas and implications we discussed yesterday.

Chartered Clinical Psychologist

18th September 2008
From: Hart Laura

Sent: 23/07/2008

To: Laura

Cc: 

Subject: AOT Caseload and Performance Research

Laura

Thanks you for meeting with me and outlining the progress on your research. I found our discussion very useful and informative. In particular, the various perspectives and impact that performance measures and their application have on how they are received and applied.

I do hope it was useful as I found it insightful and will certainly ensure that in future, the introduction of new performance measures for particular teams and services is set in context of the wider performance framework.

I hope the final elements of the research come together without trauma and look forward to receiving the final report.

Many thanks again
‘At the moment, we’re just sharing the space, not sharing the experience’:
Invesitgating division in a shared learning environment

Qualitative Research Project Abstract

July 2008
Year One
Abstract
Whilst there are benefits to inter-professional learning, bringing multiple viewpoints to the classroom can result in tension (Crow & Smith, 2003). This study aimed to explore the experience of counselling and clinical psychology trainees in joint weekly research methods teaching sessions. The research sought to explore the constructions of reality which resulted from the different subjective experiences and how the professionals in the two groups made sense of these experiences. Interpretive Phenomenological Analysis (IPA) was used to analyse the transcripts of two focus groups, one made up of six clinical trainees and another of two counselling trainees. Seven superordinate themes arose from the analysis and the report focuses on the theme of ‘division’ as this was of most relevance to the research question. Firstly the theme ‘we all write separate reports’ was important in illustrating the trainees were unable to work towards a common goal, and were blaming course structure for divisions. Further ‘it wasn’t the right kind of room’ was a reflection of the limitations in the physical environment. Finally ‘it seems almost symbolic’ is concerned with the trainees’ responsibilities to integrate with the other group, and focused on trainees choices to sit with members of their own cohort and not seek collaboration. It was concluded that rather than being a shared learning environment, the research lectures simply functioned as shared teaching. To overcome divisions more cooperation is required, with a reliance on others to achieve common goals. Limitations and implications for practice are discussed.
Major Research Project

Post-Traumatic Growth in Military Personnel with Suspected Mild Traumatic Brain Injury

By

Laura Marie France

July 2010

Year Three
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<td>Conclusion</td>
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<td>References</td>
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<td>Appendix B</td>
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<td>Appendix C</td>
<td>247</td>
</tr>
<tr>
<td>Appendix D</td>
<td>253</td>
</tr>
</tbody>
</table>
Whenever one is confronted with an inescapable, unavoidable situation, whenever one has to face a fate that cannot be changed . . . What matters most of all is the attitude we take toward suffering, the attitude in which we take our suffering upon ourselves.

Victor Frankl, 1963
Abstract

Introduction
This research addresses the issue of Posttraumatic Growth (PTG) in military personnel with suspected mild Traumatic Brain Injury (mTBI). The focus on serving military personnel is informed by the intensity of the current operational climate for the British Armed Forces, and the increased rates of physical and psychological injuries resulting from this (Defence Medical Services Department [DMSD], 2008). In particular, mTBI has been labelled the 'signature injury' of contemporary conflicts (Okie, 2005; Warden, 2006; Xydakis et al., 2005)

Traditionally, the primary focus in medical and psychological research literature pertaining to experiences of trauma has been the ways in which such experiences can precipitate severe psychological and physiological difficulties (Tedeschi & Calhoun, 2004). However, in line with the broad paradigm shift towards Positive Psychology (e.g. Seligman, 2002), research attention has been directed towards the potential for individuals to grow and develop as a result of adversity (Tedeschi & Calhoun, 2004).

Methodology
The present study was a correlation design using cross-sectional survey methodology. A non-probability, purposive sampling technique was employed to identify participants with a diagnosis of 'Definite' or 'Possible' mTBI following assessment by the UK Defence mTBI Team. Forty-one patients responded to a postal questionnaire; all participants were male, White British, serving members of the UK armed forces, with a mean age of 30.5. The majority of the sample sustained their injury as the result of a blast with a mean time since injury of 18.7 months. Participants completed a Demographic Questionnaire, the Hospital Anxiety and Depression Scale (HADS: Zigmond & Snaith, 1983), the Post Traumatic Growth Inventory (PTGI: Tedeschi & Calhoun, 1996), the Post Traumatic Stress Disorder Checklist – Military Version (PCL-M: Weathers et al., 1993) and the NEO Five-Factor Inventory (NEO-FFI: Costa & McCrae, 1992).
Results
Serving military personnel with suspected mTBI were found to report PTG at a comparable level to civilians who have sustained mild to severe TBI (Powell et al. 2007). There was a significant, negative correlation between scores on the PTGI and scores on the Conscientiousness domain of the NEO-FFI ($r = -0.311$, $p = 0.05$). There were no significant correlations between PTG and scores on the HADS Anxiety scale or PCL-M, but the Personal Growth factor of the PTGI was significantly negatively correlated the HADS Depression scale ($r_s = -0.344$, $p = 0.03$). There was no significant correlation between scores on the PTGI and time since injury, but there was a significant negative correlation between the Personal Strength Factor of the PTGI and the age of respondents ($r = -0.456$, $p = 0.00$).

Discussion
The findings of the present study suggest that serving military personnel with suspected mTBI do experience PTG at a comparable level to civilians who have sustained mild to severe TBI. Those who were highly conscientious reported lower levels of growth. Those who reported greater growth in the area of personal strength reported fewer symptoms of depression and were younger in age. The methodological limitations of the present study are discussed in addition to implications for further research and clinical practice.
1. Introduction

This research addresses the issue of Posttraumatic Growth (PTG) in military personnel with suspected mild Traumatic Brain Injury (mTBI). It sets out to explore the existing distinct areas of research literature regarding both PTG and mTBI before going on to contemplate the way in which these concepts have been considered together, thus, placing the rationale, objectives and hypotheses for the present study in context.

The focus on serving military personnel is informed by the intensity of the current operational climate for the UK armed forces, and the increased rates of physical and psychological injuries resulting from this (Defence Medical Services Department [DMSD], 2008). Improved protective equipment and advanced medical expertise mean that many members of the armed forces are surviving injuries that would have been fatal in previous conflicts (Hoge et al., 2008). Indeed, recent statistics presented by Defence Analytical Services and Advice (DASA, 2010) indicate that survival from injuries almost certainly fatal one year ago, is now common. Thus, the responsibility of health professionals to provide evidence-based interventions for the posttraumatic difficulties experienced by some survivors is paramount.

Traditionally, the primary focus in medical and psychological research literature pertaining to experiences of trauma has been the ways in which such experiences can precipitate severe psychological and physiological difficulties (Tedeschi & Calhoun, 2004). This research has necessarily directed attention towards those who enter the medical or therapeutic system due to the impact of their difficulties upon their daily functioning. As such, the focus of empirical research with populations who have experienced traumatic life events has been predominantly problem-focused and somewhat negative.

However, in line with the broad paradigm shift towards Positive Psychology (e.g. Seligman, 2002), Acceptance and Commitment approaches (e.g. Hayes & Smith, 2005) and Recovery models (e.g. Copeland, 1997; Repper & Perkins, 2003), research attention has been directed towards the potential for individuals to grow and develop as a result of adversity (Tedeschi & Calhoun, 2004). A recent Operational Mental Health Needs Evaluation (OMHNE,
McAllister, 2010) highlighted that UK military personnel returning from Operation Herrick in Afghanistan report increased self-confidence and a more positive view of themselves. These reports may indicate that some military personnel returning from Afghanistan are experiencing 'Posttraumatic Growth'.

1.1 Posttraumatic Growth

The notion that significant, positive personal change can result from major, traumatic life events is not a new one; influential twentieth century writers including Caplan (1964), Dohrenwend (1978), Frankl (1963), Maslow (1971) and Yalom (1980) alluded to the capacity of individuals to grow through adversity. There is now a body of contemporary empirical evidence suggesting that even those individuals exposed to the most traumatic of events might perceive some benefits and/or gains as a result of their experiences (Tedeschi & Calhoun, 1996). This phenomenon is variably referred to in the research literature as 'Thriving' (Cohen et al., 1998), 'Stress-related Growth', 'Benefit-finding' (Helgeson et al., 2006) and 'Posttraumatic Growth' (PTG: Tedeschi & Calhoun, 1996).

In a surge of research interest in the late 1980s and early 1990s, perceived benefits and/or gains following trauma were reported by individuals who had experienced a variety of traumatic life events including sexual assault and sexual abuse (Drauker, 1992; Frazier et al., 2001), bereavement (Edmonds & Hooker, 1992; Hogan et al., 1996; Lehman et al., 1993; Nerken, 1993), cancer (Collins et al., 1990; Cordova et al., 2001), diagnoses of HIV (Bower et al., 1998; Schwartzberg, 1993), major cardiac events (Affleck et al., 1987), transportation accidents (Joseph et al., 1993), natural disasters (Thompson, 1985) and military combat (Elder & Clipp, 1989; Lee et al., 2010; Sledge et al., 1980).

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6 For the purposes of the present study, the term 'Posttraumatic Growth' will be used in accordance with the standardised measure chosen for the collection of data (The Posttraumatic Growth Inventory; Tedeschi & Calhoun, 1996) and the operationalised definition of the phenomenon of interest for this research. Whilst each of the terms noted in the main text seems to imply a 'value-added' response to trauma, the theoretical underpinnings are subtly different and indiscriminate use contributes to ongoing confusion between these concepts (Butler, 2007).
In these early studies, a variety of methods were used to capture the responses of persons following a traumatic experience ranging from semi-structured interviews to self-report scales, and definitions of 'growth' varied greatly between studies. Taken together, these studies suggested to Tedeschi and Calhoun (1996) that there were at least three broad categories of perceived benefits following trauma; changes in self-perception, changes in interpersonal relationships, and a changed philosophy of life. Tedeschi and Calhoun first used the term 'Posttraumatic Growth' in their 1996 paper describing the development of a tool with which to quantify it. The Posttraumatic Growth Inventory (PTGI) assesses 'positive psychological change experienced as a result of the struggle with highly challenging life circumstances' (Tedeschi & Calhoun, 2004, p.1) and comprises the five factors that make up this multidimensional concept:

i. Relating to others: developing stronger bonds with loved ones, re-establishing relationships with estranged family members and friends, gaining more compassion for others, particularly those who have experienced similar stresses.

ii. New possibilities: beginning to make choices in a more conscious manner according to a life plan. Attempting to change things perceived as needing to be changed.

iii. Personal strength: Expressing greater self-reliance and feeling more able to accept how things turn out. Recognition of personal vulnerability, but development of personal strength that may help in hardships to be encountered in the future.

iv. Spiritual change: Re-evaluating spiritual beliefs, associating with a community of similar believers, connecting with spiritual roots. Not restricted to beliefs within a recognised faith system; engagement with fundamental existential questions can occur.

v. Appreciation of life: Trying to live each day more fully, rethinking values and priorities about what is important in life, acting differently in accordance with changed values and priorities.

Adapted from Tedeschi & Calhoun (1996)
Tedeschi and Calhoun (1996) administered the PTGI to 604 college students (199 men and 405 women) who had identified themselves as having experienced a significant negative life event in the past five years, with the majority occurring between two and four years ago. The resulting reliability and validity statistics are reported in Section 2, Methodology.

The PTGI is the most widely used standardised tool reported in the empirical literature (Helgeson et al., 2006), and whilst the development of a scale to capture this phenomenon represents an advance from the ways in which data was collected in the studies of the late 1980s and early 1990s, it is important to remain mindful that the PTGI captures only areas of growth that it has been designed to and may overlook psychological gains or benefits in other areas (Park, 2004).

1.2 The process of Posttraumatic Growth

Figure 1.1 depicts the model proposed by Tedeschi and Calhoun (2004) to explain the process of PTG.7

Tedeschi and Calhoun’s (2004) understanding of the processes underpinning change following trauma concur with widely accepted models of Posttraumatic Stress Disorder (PTSD), particularly Janoff-Bulman’s (1992) ‘Shattered Assumptions’ model. Tedeschi and Calhoun (2004) note that all individuals develop an ‘Assumptive World’ which informs their understanding of other people, the world and their place within it. As depicted in Figure 1.1, ‘A psychologically seismic event can severely shake, threaten or reduce to rubble many of the schematic structures that have guided understanding, decision-making and meaningfulness’ (p. 5). This shattering of an individual’s assumptive world is accompanied by high levels of psychological distress. This affective component, Tedeschi and Calhoun (2004) argue, is key to the

7 A number of alternative theoretical models have been proposed to explain the process underpinning the development of the multidimensional phenomenon of PTG as operationalised by Tedeschi and Calhoun (1996). It is not possible to provide a review of all of these models here, but the interested reader can be referred to Aldwin (1994); Carver and Scheier (1998); Janoff-Bulman (2004); Miller and C’deBaca (1994); Zoellner & Maercker (2006).
transformative aspect of PTG, allowing the process to move beyond lessons learnt on an intellectual basis.

Figure 1.1
The process of posttraumatic growth (Tedeschi & Calhoun, 2004)

Park (2004) notes that the notion of a shattered assumptive world resulting in growth, as opposed to stress, is speculative. Whilst changed worldviews in survivors of trauma experiencing posttraumatic stress are relatively well supported empirically (Foa et al., 1999), evidence for changed worldviews in those who report PTG is sparse and Park suggests that a gradual 'meaning-
making' process is more plausible. Park notes that the next stage in Tedeschi and Calhoun's model, pertaining to cognitive processing and rumination, is far better supported by the research literature.

The role of cognitive processing in psychological responses to trauma is well-documented. In Horowitz's (1986) cognitive processing model, symptoms of intrusion following trauma are viewed as the organism's attempts to assimilate or accommodate schema-discrepant material. Such models of cognitive processing are most often used to explain the symptoms of PTSD, however, models of PTG following trauma also see cognitive processing of the event as crucial (Linley & Joseph, 2004; Tedeschi & Calhoun, 2004).

As depicted in Figure 1.1, Tedeschi and Calhoun (2004) note that immediately following trauma, cognitive processing tends to be automatic, in the form of intrusive thoughts and images and negative rumination. If this processing is effective, they argue, it eventually leads to a further ruminative process whereby the individual disengages with previous life goals that may no longer be attainable and assumptions that cannot accommodate the reality of their traumatic experience. New goals and assumptions begin to formulate, which gives the individual a sense of moving forwards in life again. Within this model, persistent distress is viewed as maintaining active cognitive processing over time and maximising time available for growth.

Tedeschi and Calhoun (2004) note the apparent paradox in the suggestion that persistent processing of an event (or, rumination) can lead to a positive outcome, particularly in the context of evidence for a relationship between rumination and negative affect (Nolen-Hoeksema & Morrow, 1991; as cited in Tedeschi & Calhoun, 2004). This apparent paradox, they argue, arises from the restriction of the term 'rumination' to negative, self-critical thought patterns, whereas, as noted by Martin and Tesser (1991; as cited in Tedeschi & Calhoun, 2004), rumination can involve making sense, problem-solving, reminiscence and anticipation.

A number of studies have found that reports of PTG are accompanied or predicted by high levels of cognitive processing. Calhoun et al. (2000)
recruited 54 undergraduate students who had experienced a major traumatic event in the past three years and asked them to complete a number of measures including the PTGI and a composite assessment of rumination comprising items from a number of scales. Multiple regression analysis revealed that event-related rumination soon after a traumatic event was associated with higher levels of PTG. This confirmed earlier findings of Bower et al. (1998) who reported experiences of personal growth related to deliberate, repetitive, cognitive processing in men diagnosed with HIV infection.

Tedeschi and Calhoun (2004) cite the importance of social support throughout the various stages of rumination following a traumatic experience. Neimeyer (2001) has highlighted the way in which supportive others can facilitate PTG by providing a space in which narratives can be developed about changes that have occurred and alternative perspectives can be offered that can be integrated into schema change. Support offered by those who experienced the trauma alongside the individual is particularly powerful as perspectives from these parties may hold more credibility for the survivor (Tedeschi & Calhoun, 1993).

The cognitive rebuilding that is precipitated by a psychologically seismic event, Tedeschi and Calhoun (2004) explain, takes into account the reality of a changed life following trauma, produces schemas that incorporate the trauma and possible future events, and are more resistant to being shattered. This, they argue, is experienced as PTG which, the authors note is closely related to wisdom. Wisdom is characterised particularly by some of the paradoxes involved in surviving a traumatic event, for example, understanding that a trauma must be left behind, but also woven into an individual’s life narrative for the future. The construction of this personal narrative, it is argued, is essential for the individual’s recognition of areas of growth (Tedeschi & Calhoun, 2004).

Undoubtedly, the area of PTG is relatively young in empirical terms and a great many questions relating to the underlying process, relationships with other key variables, distinctions and overlap with related concepts and
implications for clinical practice, remain unanswered. Major criticism for Tedeschi and Calhoun's model of PTG comes from a body of literature suggesting that self-reported PTG simply reflects a tendency to make positive self-attributions in order to protect oneself from distress (McFarland & Alvaro, 2000). Helgeson et al. (2006) summarise the lack of consensus regarding what reported growth outcomes actually reflect by suggesting that a variety of processes might be represented, including actual changes in an individual's life, coping strategies employed by the individual, and cognitive manipulations directed by self-enhancement biases meant to alleviate distress.

Despite ongoing theoretical debate, the development of a standardised tool for measuring PTG as operationally defined by Tedeschi and Calhoun (1996) has prompted empirical attempts to establish an understanding of the personal and situational context in which PTG might occur. Some of the findings relevant to the present study are discussed below.

1.3 PTG and PTSD
Due to the central role that cognitive processing is thought to play in both stress and growth responses to trauma, Butler (2007) suggests that symptoms of PTSD are related to PTG in a way unique from other areas of 'distress', such as anxiety or depression, despite often being included in this category in research examining the relationship between PTG and other key variables.

Helgeson et al. (2006) extensive meta-analysis of growth studies indicated an overall pattern of positive relationships between symptoms of PTSD and PTG. Butler et al. (2005) investigated experiences of PTG in an internet convenience sample of individuals involved in the 9/11 terrorist attacks and found a curvilinear relationship between PTSD and PTG. In their sample, reported levels of growth increased as symptoms of posttraumatic stress increased, up until the level at which the chosen instrument indicated PTSD 'caseness', after which increasing symptoms of PTSD were associated with a decline in reported levels of growth. Butler et al. (2005, p.373) suggest that symptoms of PTSD at 'subsyndromal' levels represent cognitive processing
associated with PTG. However, when symptoms of PTSD reach 'syndromic' levels, PTG becomes less likely.

1.4 PTG and psychological well-being

Tedeschi and Calhoun (2004) explain that PTG is most likely a consequence of attempts at psychological survival, which can occur alongside the residual psychological distress resulting from a traumatic experience. The authors note the lack of relationship between PTG and Neuroticism observed in the validation of the PTGI (Tedeschi & Calhoun, 1996) and note that PTG represents a separate construct to psychological health.

Therefore, growth and distress are able to co-exist in the same individual. For example, Cordova et al. (2001) matched breast cancer survivors with healthy controls and observed that, although they did not differ on levels of depressive symptoms, the cancer survivors reported higher levels of PTG. In a military sample, Elder and Clipp (1989) noted that their sample of WWII and Korean conflict veterans regarded their combat experience from a dual perspective, seeing both positive and negative consequences for themselves.

However, the indications from the wider research literature remain mixed, variably documenting positive, negative and null relations of PTG to psychological well-being (Linley & Joseph, 2004). This is reflected in the small body of research literature investigating PTG in brain injured patients, the focus of the present study. For example, in McGrath and Linley’s (2006) study of PTG in brain injured patients, scores on the PTGI were positively correlated with anxiety and depression as measured by the Hospital Anxiety and Depression Scale (HADS: Zigmond & Snaith, 1983). Conversely, in a retrospective, long-term follow-up of patients who had sustained brain injury between nine and 24 years ago, Hawley and Joseph (2008) found that levels of depression and anxiety were negatively related to positive psychological growth. Powell et al. (2007) found no significant relationship between PTG, anxiety or depression (assessed using the PTGI and HADS) in their sample of brain injured clients.

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8 There are, however, some methodological issues covered later in this discussion which indicate a cautious interpretation of the results from this study.
Tedeschi and Calhoun (2004) assert that the lack of consistent relationship between PTG and standardised measures of psychological distress simply illustrates the fact that the two concepts are independent of one another. A traumatic experience, they note, remains an ultimately distressing event; the development and maintenance of growth requires periodic cognitive and emotional reminders that, whilst unpleasant, remind both of what has been lost and what has been gained (Tedeschi & Calhoun, 2004). As such, Tedeschi and Calhoun (2004) assert that psychological growth and what most clinicians might recognise as ‘good coping’ are not the same thing, although they may well overlap. With the removal of all distress through successful coping, they argue, the most productive period of growth may come to an end.

The contrasting viewpoint, that reports of growth actually reflect a form of coping through positive reinterpretation abounds in commentaries on the concept of PTG (e.g. Park, 2004), too many and too diverse to adequately consider in this review. Aldwin and Levenson (2004) argue that, in fact, the crucial role of coping strategies as mediators in the relationship between stress and growth has been overlooked in this debate. Helgeson et al. (2006) summarise the way in which the ‘growth as outcome Vs growth as coping process’ debate is related to psychological well-being; if reports of growth actually represent coping strategies used to manage distress, the success of these strategies will determine whether reported growth is associated with positive or negative psychological outcomes.

The relationship between psychological growth and psychological well-being is further complicated by the numerous variables hypothesised to moderate it (Park, 2004). For example, findings from Helgeson et al. (2006) meta-analysis of 87 investigations of growth indicated that growth was associated with lower levels of depression and greater well-being, but that this relationship was moderated by the length of time that had passed since the traumatic experience, thus, growth was more likely to be related to well-being the more time that had passed since trauma. This may lend support to the argument of Tedeschi and Calhoun (1995), that posttraumatic growth is incremental over time.
1.5 The incremental nature of Posttraumatic Growth

Tedeschi and Calhoun (1995) argue that PTG takes time to emerge following a traumatic experience and increases over time. This, they argue, is due to the fact that reported growth is an outcome of cognitive processing, adaptation and coping that occurs in the weeks and months following a traumatic experience.

McGrath and Linley (2006) found evidence of substantial positive psychological change in their small ($N = 10$ and $N = 11$ respectively) matched samples of early ($x = 7$ months since injury) and late ($x = 118$ months since injury) brain injured clients. Scores on the PTGI (Tedeschi & Calhoun, 1996) were significantly higher for the late sample than for the early sample lending support to the idea that PTG is incremental over time.

Powell et al., (2007) also compared small ($N = 23$ and $N = 25$ respectively) matched samples of early ($x = 1.7$ years since injury) and late ($x = 11.6$ years since injury) brain injured clients. Again, scores on the PTGI were significantly higher for the late sample than for the early sample, both for the total score and for each of the five dimension scores. The authors note that whilst the mean total PTGI score for their late sample ($x = 68.1$) was equivalent or higher that reported in previous studies with samples who had experienced a range of traumatic events, the mean total PTGI score for their early sample ($x = 36.5$) was much lower in comparison to these other populations. Powell et al. (2007) consider the possibility that, for individuals with brain injury, PTG increases over time in line with the process of gaining insight and awareness.

However, there has been some debate regarding whether measures of PTG administered soon after a traumatic experience and those administered in the longer-term are actually measuring the same phenomenon. Researchers such as McFarland and Alvaro (2000) suggest that measures of growth taken soon after a traumatic event may be detecting a cognitive strategy of positive self-attributions used to reduce distress, whereas measures of growth taken
some time after a traumatic event may be more likely to reflect actual growth or change.

1.6 PTG and Personality
Tedeschi and Calhoun note that there are two personality characteristics\(^9\) that appear to most significantly increase the likelihood of an individual experiencing PTG, those of extraversion and openness. Extraversion and openness were found to be modestly positively related to PTG in Tedeschi and Calhoun's (1996) original validation of the PTGI, whilst Neuroticism was not related and agreeableness and conscientiousness showed only very small, positive relationships to growth. Tedeschi and Calhoun (1996) hypothesise that extroverts may be better able to tolerate stimulation and make use of social support, whereas those who are open to experience may be accustomed to examining their experiences and viewing them as less threatening and potentially beneficial.

1.7 PTG and related concepts
Tedeschi and Calhoun (2004) note the importance of making a clear distinction between PTG and concepts such as resilience (Rutter, 1985), hardiness (Kobasa, 1979) and sense of coherence (Antonovsky, 1984). The latter terms, they argue, refer to personal characteristics that allow individuals to manage adversity well. PTG, however, refers to a change that goes beyond the ability to resist and not be damaged by highly stressful circumstances towards levels of functioning above those that existed prior to a traumatic experience. As such, Tedeschi and Calhoun (2004) argue, PTG has a unique transformative quality. The authors have suggested that individuals with high levels of resilience, hardiness and sense of coherence are unlikely to report high levels of PTG as their personal characteristics preclude the significant struggle with a traumatic experience from which PTG emerges.

\(^9\) In the development of the Posttraumatic Growth Inventory, Tedeschi and Calhoun (1996) subscribed to the Big Five theory of personality (Costa & McRae, 1992) and utilised the NEO Personality Inventory to investigate relationships between PTG and personality. The majority of empirical studies that have since examined relationships between PTG and personality (including the present study) have replicated the use of the NEO Personality Inventory. It is recognised that a vast literature exists regarding personality and that a number of standardised measures are available with which to assess personality. However, it is far beyond the scope of the present study to engage in a detailed consideration of personality research.
Levine et al. (2009) examined resilience and PTG in a sample of 588 Israeli citizens and military personnel who had been involved in the Lebanon War of 2006. Resilience (defined as absence of any symptoms of PTSD) was significantly associated with lower levels of PTG (assessed using the PTGI: Tedeschi & Calhoun, 1996). These findings are highly relevant for the present study. It could be hypothesised that serving military personnel, by virtue of their vocation, are individuals high in resilience and hardiness. Routinely exposed to experiences that a civilian may perceive as highly traumatic, it is possible that military personnel draw upon their extensive training to protect themselves from the type of struggle from which, as previously noted, PTG can emerge.

The present study addresses experiences of PTG in military personnel who have sustained suspected Mild Traumatic Brain Injury (mTBI).

1.8 Mild Traumatic Brain Injury

The World Health Organisation (WHO) Collaborating Centre for Neurotrauma Task Force on Mild Traumatic Brain Injury (mTBI) recommends the following operational definition of mTBI:

mTBI is an acute brain injury resulting from mechanical energy to the head from external physical forces. Operational criteria for clinical identification include:

(i) One or more of the following: confusion or disorientation, loss of consciousness for 30 minutes or less, post-traumatic amnesia for less than 24 hours, and/or other transient neurological abnormalities such as focal signs, seizure, and intracranial lesion not requiring surgery;

(ii) Glasgow Coma Scale score of 13–15 after 30 minutes post-injury or later upon presentation for health care.

These manifestations of mTBI must not be due to drugs, alcohol, medications, caused by other injuries or treatment for other injuries (e.g. systemic injuries, facial injuries or intubation), caused by other problems (e.g. psychological
trauma, language barrier or coexisting medical conditions) or caused by penetrating craniocerebral injury.

(Adapted from Holm et al., 2005)
Hoge et al. (2009) has criticised operational definitions of mTBI for failing to specify a symptom profile and a time-course, arguing that this often leads clinicians to subjectively attribute vague patterns of symptoms to mTBI. However, Brenner et al. (2009) explain that current symptomatology is not central to making an accurate clinical judgement as to whether TBI has occurred. TBI, they explain, is a historical injurious event, the occurrence of which cannot be determined by the presence of current symptoms. The WHO operational definition remains preferable to that adopted by the United States Department of Defence, which fails to exclude a number of alternative causes for alterations in consciousness in addition to mTBI (Hoge et al., 2009).

The symptoms resulting from mTBI are referred to as Post-Concussive Symptoms (PCS: Brenner et al., 2009) and tend to be wide-ranging, non-specific, and overlap with recognised psychological difficulties such as depression and PTSD (Alexander, 1995). Symptoms can be organised in to three main areas (DMSD, 2008):

i. Cognitive: short-term memory loss, decreased ability to process information, inability to multi-task, spatial disorientation, impaired judgement, difficulties in initiating, completing or concentrating on tasks

ii. Physiological: headache, dizziness, double or blurred vision, nausea and vomiting, aversion to bright light or loud noises, changes in ability to smell and hear.

iii. Emotional / behavioural: anxiety, depression, mood swings, impulsive behaviour, increased agitation, anger and irritability.

(adapted from DMSD, 2008, p. 60)

The majority of individuals who have suffered mTBI are symptom-free within three months (Holm et al., 2005) however, a small sub-group, often referred to as the ‘miserable minority’ (Ruff, 2005) report difficulties persisting far
beyond this point, causing significant functional impairment. The reported size of this minority is estimated from seven to eight per cent (Binder et al., 1997) to 10-20 per cent (Alexander, 1995). The widely accepted argument is that persistence of symptoms beyond the three-month period is primarily attributable to social factors (particularly involvement in compensation-seeking) and psychological factors rather than the mTBI itself (Holm et al., 2005).

There is some evidence that offers support to a psychological basis to long-term symptomatology following mTBI. Hoge et al. (2008) examined 2525 United States soldiers approximately three to four months after their return from Iraq and found that those who had experienced mTBI were significantly more likely to report poor general health, missed workdays, medical visits and a high number of post-concussive and somatic symptoms compared to soldiers with non-mTBI injuries. However, when diagnoses of PTSD and depression were adjusted for in the analysis, mTBI was no longer significantly associated with poorer physical health outcomes or symptoms. This may suggest a psychological explanation for long-term symptomatology following mTBI. However, Hoge et al. (2008) caution against a simplistic interpretation of this evidence; rather than infer that persistent symptomatology following mTBI is purely attributable to psychological factors, the authors explain that the relationship between mTBI and persistent post-concussive symptoms is poorly understood at present and complicated by the considerable overlap between post-concussive symptoms and presentations consistent with PTSD or depression.

The work of Vanderploeg et al. (2005, 2009) offers a perspective on the long-term sequelae of mTBI that benefits from a sample that had not been referred to healthcare services and were not involved in compensation claims. Thus, it could be argued that outcomes observed in this group were unlikely to be the result of some of the psychological and social factors argued to characterise groups reporting persistent symptoms. From a population of community dwelling Vietnam veterans, three groups were matched on premorbid ability; 1) those who had not been involved in an accident and had not sustained a head injury 2) those who had been involved in a road traffic accident but had
not sustained a head injury and 3) those who had sustained a head injury involving altered consciousness (mTBI).

All participants completed an extensive neuropsychological test battery; when long-term neuropsychological outcomes were examined in a traditional group-comparison manner, no significant differences in ability were found. However, when specific and sensitive measures of ability were utilised (for example, by measuring aspects of how tasks were approached rather than relying upon the ultimate result achieved) Vanderploeg et al. (2005) observed that mTBI could have a long-term neuropsychological impact on extremely subtle aspects of complex attention and working memory.

A continuing lack of understanding regarding whether impairments observed following mTBI are attributable to organic neurological insult, psychological distress, or an interaction of the two, has implications for the clinical management of individuals who have sustained mTBI (Bryant, 2008). Evidence-based interventions for the treatment of the consequences of mTBI are lacking, but a small body of empirical evidence suggests that psychoeducational interventions focused on normalisation of symptoms and raising expectations of rapid recovery appear to be most effective in reducing the likelihood of persistent symptoms and ongoing functional impairment (Barth et al., 1999; Mittenberg et al., 1993; Ponsford et al., 2002; Wade et al., 1998).

Hoge et al. (2009) have suggested that misguided 'diagnoses' of mTBI (rather than post-concussive symptoms as a result of mTBI) and specialist mTBI services are actually counter to the principles of normalisation and raising expectations of recovery, as the implication is one of 'damage' to the brain and a recovery dependent upon neurological factors that are beyond the control of the individual. The UK armed forces, however, are one organisation that has introduced specialist mTBI services in order to meet the needs of an increasing number of serving military personnel reporting this type of injury.

1.9 Mild Traumatic Brain Injury in military personnel
mTBI is now routinely referred to as the ‘signature injury’ of the Iraq and Afghanistan conflicts (Okie, 2005; Warden, 2006; Xydakis et al., 2005). The widespread use of Improvised Explosive Devices (IEDs) in these conflicts, alongside conventional mines and mortars, has lead to increasing numbers of head and neck injuries amongst serving members of the armed forces (Jones, 2008). Blast-related TBI can result in one of three ways; 1) Primary – through wave-induced changes in atmospheric pressure 2) Secondary – by objects put in motion by the explosion and 3) Tertiary – by people themselves being forcefully propelled.

Evidence from the United States indicates that around 59 per cent of serving military personnel returned from Iraq and Afghanistan with at least a mild traumatic brain injury (Warden et al., 2005). More recently, Hoge et al. (2008) and Tanielan and Jaycox (2008) have reported rates of approximately 15 per cent and 20 per cent respectively for American service personnel returning from Iraq reporting an injury that resulted in alteration or loss of consciousness.

Incidence of mTBI in the UK armed forces is unknown at present, however, referral rates appear to indicate a lower level of mTBI than that observed in the United States (DMSD, 2008). This may be due to patterns of underreporting; UK service personnel with probable mTBI often present for medical care many months after injury, usually as a result of a change in their working environment or personal circumstances (DMSD, 2008). Brenner et al. (2009, p. 240) refer to the ‘unique factors in the military that contribute to resistance to seeking help’, for example, underreporting health difficulties for fear of jeopardising future deployment, or failing to notice unusual symptoms during phases of readjustment following a return from deployment. These factors may be contributing to difficulty in establishing the true prevalence of mTBI in the UK armed forces.

Fear et al. (2009) emphasise that numerous additional complicating factors exist in establishing the true prevalence of mTBI in the UK armed forces and developing an accurate understanding of the causal relationship between mTBI and PCS in this population. In a cross-sectional analysis of data
pertaining to a randomly selected cohort of 5869 UK military personnel, Fear et al. (2009) found that the level and severity of PCS symptoms were associated with self-reported exposure to a blast whilst in a combat zone. However, the same symptoms were also associated with other operational exposures, such as aiding the wounded. There were strong correlations between the presence of PCS symptoms and 'caseness' on standardised measures of PTSD and general psychological well-being.

The findings of Fear et al. (2009) reflect patterns identified in civilian populations who have sustained mTBI, in that they indicate a lack of clarity regarding whether impairments observed following mTBI are attributable to organic neurological insult, psychological distress, or an interaction of the two. As for civilian populations, this has implications for the clinical management of these individuals and wider implications for the operational capacity of the UK armed forces.

However, the aforementioned approaches that have been identified as effective in reducing the likelihood of persistent PCS symptoms and associated functional impairment, such as normalisation and raising expectations of recovery (Barth et al., 1999; Mittenberg et al., 1993; Ponsford et al., 2002; Wade et al., 1998), seem to fit well with the philosophical underpinnings of PTG.

1.10 PTG and mTBI
Research exploring PTG in individuals who have suffered brain injury is scarce. An extensive literature search resulted in only three papers, two of which focus exclusively on moderate to severe TBI (Hawley & Joseph, 2008; McGrath & Linley, 2006; Powell et al., 2007).

McGrath and Linley (2006) note that the lack of research attention to PTG following brain injury may be a legacy of historical arguments regarding the incompatibility of brain injury with any form of posttraumatic reaction. These arguments have centred on the notion that the impaired consciousness component of mTBI precludes encoding of the traumatic experience into memory, central to re-experiencing symptoms involved in PTSD (Sbordone &
Liter, 1995). The converse argument is presented by Bryant (2008) who proposes the possibility that those who have sustained mTBI may not have the cognitive resources to engage in cognitive coping strategies following a traumatic experience, therefore, becoming more vulnerable to symptoms of PTSD.

Bryant (2001) argues that studies examining the presence of posttraumatic reactions in those who have experienced mTBI have failed to employ operational definitions or standardised measurements of either PTSD or mTBI. Using a more stringent methodology in a study of 97 consecutive hospital admissions following motor vehicle accidents involving mTBI, Bryant and Harvey (1998) found that 24 per cent met diagnostic criteria for PTSD six months post injury.

United States military personnel also show evidence of PTSD following mTBI. Hoge et al. (2008) found that around 44 per cent of service personnel returning from Iraq reporting an injury involving a loss of consciousness also met diagnostic criteria for PTSD. Hoge et al. (2008) note that a history of mTBI in the combat environment reflects exposure to a very intense traumatic event that threatens loss of life and significantly increases the risk of PTSD. Lew et al. (2008) concur and report that 42 per cent of veterans with a history of mTBI also meet criteria for PTSD.

Similarly to PTSD, some dimensions of a PTG reaction would appear to be incompatible with features of brain injury. For example, it could be argued that individuals who have experienced a brain injury have disruptions in their cognitive functioning that would prevent the schema-level developments hypothesised to be involved in the process of PTG (Tedeschi & Calhoun, 2004). However, PTG has been observed in this population (McGrath & Linley, 2006; Powell et al. 2007), albeit in small scale, exploratory studies.

Hawley and Joseph (2008) used a retrospective longitudinal design in an attempt to identify the extent to which injury characteristics and early outcome measures in TBI predict long-term psychological growth. The sample recruited had sustained either a mild, moderate or severe TBI between nine and 25 years prior to the study and had originally been reviewed six months
post-injury. Of this original cohort of 563, 165 patients were followed-up 10 years post injury. The majority of the follow-up group had sustained a severe injury (62 per cent) and 60 per cent had sustained other injuries at the time of TBI. The Positive Change scale of the Changes in Outlook Questionnaire (Joseph et al., 1993; as cited in Hawley & Joseph, 2008) was used to assess growth in this study.

The results support the earlier described findings of McGrath & Linley (2006) and Powell et al. (2007) with over half of the sample reporting positive psychological change following brain injury. The authors did not observe any significant differences between those who had sustained 'mild' injury and those who had sustained 'severe' injury. At ten year follow-up, psychological growth was related to lower levels of anxiety and depression and, overall, injury variables and outcomes at six months follow-up were poor predictors of positive changes in outlook at long-term follow-up.

However, some caution should be exercised in the interpretation of findings from the Hawley and Joseph (2008) study. The authors recognise that the study was somewhat opportunistic and that the original six month follow-up data was not collected with the degree of rigour that would have been expected for a prospective design. Less than half the original cohort were traced for long-term follow-up and the same standardised measurements were not used at six month and ten year follow-up. Anxiety and depression were assessed using the HADS at six month follow-up, but were replaced with a single question at 10 year follow-up which asked the respondent whether they had experienced symptoms of anxiety or depression.

1.11 Statement of the problem
It appears possible that the incidence of mTBI in UK armed forces will increase (DMSD, 2008) and based upon preliminary research with civilian populations, it seems possible that military personnel who suffer mTBI may also experience some degree of PTG. It must, however, be noted that the military population may be qualitatively different from a civilian population across a number of indices, particularly due to the unique context in which they live and perform their duties. Therefore, it seems reasonable not to
assume the generalisability of research conducted with civilians, and to investigate military personnel as a discrete group.

Civilian research has indicated that interventions for mTBI focused on normalisation of symptoms and raising expectations of rapid recovery appear to be most effective in reducing the likelihood of persistent symptoms and ongoing functional impairment (Barth et al., 1999; Mittenberg et al., 1993; Ponsford et al., 2002; Wade et al., 1998). These principles are in line with preliminary research with civilians who have experienced TBI which has highlighted the importance of emphasising potential for PTG and positive change in the recovery process.

The present study will look for evidence of post-traumatic growth in military personnel who have experienced mTBI and will consider ways in which this might shape and inform interventions targeted at reducing the likelihood of persistent symptomatology in this population through facilitating PTG. In summary, evidence of post-traumatic growth in a sample of military personnel who have suffered mTBI may indicate a resource within the injured person which, if recognised, could be accessed and developed therapeutically with the objective of promoting recovery and preventing persistent symptomatology.
2. Objectives and Hypotheses

2.1 Objectives
The overarching objective of the present study is to investigate whether serving military personnel who have sustained suspected mTBI experience posttraumatic growth. This overarching objective can be broken down as follows:

i. To examine the distribution of scores achieved by a sample of military personnel with suspected mTBI on a standardised measure of PTG and attempt to provide preliminary norms for use in further research with this population.

ii. To compare the distribution of scores achieved by a sample of military personnel with suspected mTBI on a standardised measure of PTG with the distribution of scores achieved by other traumatised populations on the same instrument, as indicated in the research literature.

iii. To make a preliminary attempt to identify whether factors observed to correlate with PTG in civilian populations are also applicable to a sample of military personnel who have suffered suspected mTBI.

iv. To establish baseline measures that may be of use in future work seeking to identify predictor variables for long-term sequelae following mTBI, thus contributing towards addressing a knowledge gap identified by DMSD (2008).

2.2 Hypotheses
Although relationships between PTG and certain other variables have been reported in the research literature, there is great variability in the populations used, the trauma experiences investigated, the operational definitions of PTG, and the instruments used to measure PTG. The present study examines a population and a trauma experience that has received little research attention; it is appropriate, therefore, to test the hypotheses conservatively. These hypotheses are as follows:
$H_1$ (one-tailed)
- Theoretical hypothesis: Military personnel who have experienced suspected mTBI will show evidence of PTG.
- Operational hypothesis: Scores on the PTGI from a sample of serving military personnel with a diagnosis of suspected mTBI will be distributed similarly to scores generated by populations identified in the previous research literature using the PTGI to measure PTG following a traumatic experience.

$H_2$ (two-tailed)
- Theoretical hypothesis: Where PTG is evident in a sample of serving military personnel with a diagnosis of suspected mTBI, it will be related to the personality traits of extraversion, openness to experience, agreeableness, conscientiousness and neuroticism.
- Operational hypothesis: there will be a statistically significant correlation between scores on the PTGI and scores on the Neuroticism, Extraversion, Openness to Experience, Agreeableness and Conscientiousness domains of the NEO-FFI.

$H_3$ (two-tailed)
- Theoretical hypothesis: Where PTG is evident in a sample of serving military personnel with a diagnosis of suspected mTBI, it will be related to symptoms of depression
- Operational hypothesis: There will be a statistically significant correlation between scores on the PTGI and scores on the Depression scale of the HADS.

$H_4$ (two-tailed)
- Theoretical hypothesis: Where PTG is evident in a sample of serving military personnel with a diagnosis of suspected mTBI, it will be related to symptoms of anxiety
- Operational hypothesis: There will be a statistically significant correlation between scores on the PTGI and scores on the Anxiety Scale of the HADS.
**H₅ (two-tailed)**

- Theoretical hypothesis: Where PTG is evident in a sample of serving military personnel with a diagnosis of suspected mTBI, it will be related to symptoms of post-traumatic stress
- Operational hypothesis: There will be a statistically significant correlation between scores on the PTGI and scores on the PCL-M.

**H₆ₐ (two-tailed)**

- Theoretical hypothesis: Where PTG is evident in a sample of serving military personnel with a diagnosis of suspected mTBI, it will be correlated with certain features of the mTBI, namely, length of time since injury and corresponding physical injury to other parts of the body.
- Operational hypothesis: There will be a statistically significant correlation between scores on the PTGI and self-reported length of time since injury, and corresponding injury to other parts of the body.

**H₆₏ (two-tailed):**

- Theoretical hypothesis: Where PTG is evident in a sample of serving military personnel with a diagnosis of suspected mTBI, the extent of growth will differ between patients currently undergoing treatment and patients who have completed their treatment.
- Operational hypothesis: There will be a statistically significant difference between scores on the PTGI generated by patients classified ‘Current’ by the mTBI team and patients classified ‘Treated’ by the mTBI team.

**H₇ₐ (two-tailed)**

- Theoretical hypothesis: Where PTG is evident in a sample of serving military personnel with a diagnosis of suspected mTBI, it will be correlated with certain features of military service, namely, length of time in service and rank.
- Operational hypothesis: There will be a statistically significant correlation between scores on the PTGI and certain features of military service, namely, length of time in service.
$H_{70}$ (two-tailed):

- Theoretical hypothesis: Where PTG is evident in a sample of serving military personnel with a diagnosis of suspected mTBI, the extent of growth will differ between military ranks.

- Operational hypothesis: There will be a statistically significant different between scores on the PTGI generated by participants holding different military ranks.
3. Method

The present study was a correlation design using cross-sectional survey methodology. The following section describes the participants involved, the measures used, procedure for data collection and the ethical issues considered.

3.1 Participants

3.1.1 Sample size

The process of performing *a-priori* power analyses to indicate sample size for the present study is complicated by the number of hypotheses to be tested, the varying availability of existing research literature on which to base estimates of effect size and, where research does exist, the confidence with which the reported effect sizes can be regarded.

Table 3.1 illustrates the effect sizes reported in the existing research literature pertaining to the relationship between PTG and a number of variables of interest for the present study. A number of the statistics are taken from an extensive meta-analytic review of 87 studies of growth conducted by Helgeson *et al.* (2006) and, therefore, are weighted and aggregated over these separate studies. The studies vary in the populations used, the trauma experiences investigated, the operational definitions of PTG, and the instruments used to measure PTG.

Where effect size statistics were not reported in individual studies (which occurred with relative frequency) the effect size was presumed to be $r = 0$, which reduces the aggregate effect sizes reported. Helgeson *et al.* (2006) reported statistically significant variability in the aggregate effect sizes, indicating that they are not based upon a single population. This variability was relatively unchanged when moderator variables were included in the analysis. Furthermore, the statistical power to detect effect size was limited by the number of studies available for inclusion in the meta-analysis.

In summary, the effect sizes reported in the research literature must be regarded with caution.
As previously mentioned, the present study examines a unique population and a trauma experience that has received little research attention. Therefore, the extent to which the effect sizes shown in Table 3.1 are meaningful for the present study is questionable. Additionally, for certain variables, the recommended sample sizes are currently unobtainable within the UK military population. Indeed, it is hoped that the numbers of serving military personnel who experience mTBI does not reach these levels. Failing to conduct research with this population based upon a-priori power analyses that indicate unobtainable sample sizes may lead to this important population being under-represented in the research literature.

A decision was made to attempt to optimise participation from the available sample in order to maximise power, whilst remaining aware that the present study is small-scale and preliminary.

Table 3.1
Effect sizes for relationship between PTG and variables of interest indicated in existing research literature

<table>
<thead>
<tr>
<th>Variable</th>
<th>Study</th>
<th>Effect size</th>
<th>Sample size specified by G*Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extraversion</td>
<td>Tedeschi &amp; Calhoun (1996)</td>
<td>$r = .54$</td>
<td>24</td>
</tr>
<tr>
<td>Openness to experience</td>
<td>Tedeschi &amp; Calhoun (1996)</td>
<td>$r = .46$</td>
<td>35</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>Tedeschi &amp; Calhoun (1996)</td>
<td>$r = .42$</td>
<td>41</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>Tedeschi &amp; Calhoun (1996)</td>
<td>$r = .40$</td>
<td>46</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>Helgeson et al., (2006)</td>
<td>$r = .05$</td>
<td>3137</td>
</tr>
<tr>
<td></td>
<td>7 studies</td>
<td>(95 per cent CI = .18 - .11)</td>
<td>(239 - 646)</td>
</tr>
<tr>
<td>Depression</td>
<td>Helgeson et al., (2006)</td>
<td>$r = .09$</td>
<td>966</td>
</tr>
<tr>
<td></td>
<td>17 studies</td>
<td>(95 per cent CI = .12 - .07)</td>
<td>(542 - 1599)</td>
</tr>
<tr>
<td>Anxiety</td>
<td>Helgeson et al., (2006)</td>
<td>$r = .02$</td>
<td>19620</td>
</tr>
<tr>
<td></td>
<td>9 studies</td>
<td>(95 per cent CI = .07 - .03)</td>
<td>(1599 - 8718)</td>
</tr>
<tr>
<td>Anxiety at 6 mths post TBI</td>
<td>McGrath &amp; Linley (2006)</td>
<td>$r = .53$</td>
<td>25</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-------------------------</td>
<td>---------</td>
<td>----</td>
</tr>
<tr>
<td>TBI severity</td>
<td>Hawley &amp; Joseph (2008)</td>
<td>0.17</td>
<td>204</td>
</tr>
<tr>
<td>Other injuries at time of TBI</td>
<td>Hawley &amp; Joseph (2008)</td>
<td>0.32</td>
<td>60</td>
</tr>
<tr>
<td>Time since TBI</td>
<td>Hawley &amp; Joseph (2008)</td>
<td>0.10</td>
<td>616</td>
</tr>
</tbody>
</table>

Note.
*Two-tailed, $\alpha$ err prob = 0.05, Power ($1 - \beta$ err prob) = 0.8, Correlation $p_{H_0} = 0$

3.1.2 Sampling technique
A non-probability, purposive sampling technique was employed to identify participants for the present study. This was considered appropriate as the hypotheses related to a specific population from which there was no requirement to generalise.

3.1.3 Inclusion criteria
The primary inclusion criterion for the present study specified that potential participants must have a diagnosis of 'Definite' or 'Possible' mTBI following assessment by the UK Defence mTBI Team\textsuperscript{10}. Whilst a diagnosis of mTBI often cannot be made with absolute confidence for patients referred to the team for assessment\textsuperscript{11}, a combination of the ‘gold-standard’ patient self-report guided by structured, in-depth clinical interview (Brenner et al., 2009), collateral information and an examination of the patient’s presentation, allows the team to classify patients as ‘No mTBI’, ‘Possible mTBI’ or ‘Definite mTBI’.

\textsuperscript{10} mTBI Team Working Practices can be found in Appendix A.

\textsuperscript{11} The mTBI Team adhere as far as possible to the WHO operational definition of mTBI based upon patient self-report and medical records. However, it is important to note that GCS scores are rarely recorded in medical notes. This is likely to be due to the ‘polytraumatic’ nature of injuries sustained in contemporary warfare; combinations of open wounds, traumatic brain injury, spinal injury, eye and ear injury, musculoskeletal injury, traumatic amputation and psychological trauma are characteristic of the operations in Iraq and Afghanistan (Brenner et al., 2009). Priorities are surgical stabilisation and evacuation from the front line, rather than observations of consciousness and recording of GCS scores. See Brenner et al. (2009) for a review of complicating factors in the assessment and diagnosis of mTBI in the military population.
In order to identify the sample for the present study, a search was performed on the mTBI Team patient database specifying criteria of a diagnosis of ‘Definite’ or ‘Possible’ mTBI following assessment by the mTBI Team. This search included patients who were currently receiving, or had previously received, intervention from the mTBI team. Both males and females between the ages of 18 and 65 were considered suitable to participate, as were individuals from a range of ethnic and cultural backgrounds. Patients with a clinical presentation that indicated moderate or severe mTBI were excluded from participation\(^1\) as were those who were actively abusing alcohol or non-prescription drugs\(^2\).

3.1.4 Sample description

The database search gave a total sample of N=138. Of this total, 33 were no longer contactable via the details given at assessment and five were deployed overseas. The transient nature of the serving military population creates significant difficulties in following up the progress of patients and the level of ethical approval given for the present study did not allow for the tracking of patients who had been posted elsewhere since their assessment. This left a sample of N=100, of which two remained unwell in hospital and three declined to participate. A total of 95 questionnaire packs were sent out and 41 were returned. The response rate for the present study was 43.1 per cent.

All participants were male, White British, with a mean age of \(x = 30.5, \text{SD} = 6.4\). Table 3.2 presents the military service and injury profile of the entire sample. The majority of the sample sustained their injury as the result of a blast and lost consciousness for less than three minutes. A large proportion of the sample sustained multiple, concurrent physical injuries at the time of their mTBI. The mean time since injury was 18.7 months and over half of the sample had been prescribed medication for pain relief, insomnia or low mood.

\(^1\) These patients are not treated by the mTBI team as their clinical presentation often requires more intensive input from the Neurological Rehabilitation team. As specified in the Application for Ethical Approval submitted to MoDREC, those who have sustained moderate or severe brain injury may not be considered to have capacity to consent to participation in research projects.

\(^2\) Active abuse of alcohol or non-prescription drugs can significantly complicate the clinical presentation of an individual who has sustained mTBI as many of the symptoms following mTBI overlap with those which result from substance misuse.
No participants reported using drugs that were not prescribed by a doctor. The mean amount of alcohol consumed per week was 9.3 units (SD = 8.7).

Table 3.2

**Military service and injury profile of the sample**

<table>
<thead>
<tr>
<th>Service</th>
<th>Army</th>
<th>Royal Air Force</th>
<th>Royal Navy</th>
<th>Royal Marines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status</td>
<td>30</td>
<td>3</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Regular</td>
<td>Territorial</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rank</td>
<td>12</td>
<td>10</td>
<td>13</td>
<td>0</td>
</tr>
<tr>
<td>Pte/AC/AB</td>
<td>JNCO</td>
<td>SNCO</td>
<td>WO</td>
<td>JCO</td>
</tr>
<tr>
<td>SNCO</td>
<td>0</td>
<td>5</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>WO</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JCO</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCO</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length of time in service</td>
<td>x = 121.1</td>
<td>SD = 80.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Months)</td>
<td>30</td>
<td>0</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Cause of injury</td>
<td>Blast</td>
<td>Gunshot</td>
<td>Fall</td>
<td>Assault</td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>3</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>0-3 mins</td>
<td>3-15 mins</td>
<td>15-30 mins</td>
<td>More than 30 mins</td>
</tr>
<tr>
<td>Length of consciousness loss</td>
<td>23</td>
<td>5</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>Concurrent physical injury</td>
<td>Yes</td>
<td>No</td>
<td>Types reported</td>
<td></td>
</tr>
<tr>
<td></td>
<td>37</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Types reported</td>
<td>Broken ribs</td>
<td>Punctured lungs</td>
<td>Spinal fractures</td>
<td>Leg fractures</td>
</tr>
<tr>
<td>Time since injury</td>
<td>x = 18.7 months</td>
<td>SD = 13.2 months</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prescription medication</td>
<td>Yes</td>
<td>No</td>
<td>Reasons reported</td>
<td></td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reasons reported</td>
<td>Pain relief</td>
<td>Insomnia</td>
<td>Low mood</td>
<td></td>
</tr>
</tbody>
</table>

Note.

Pte / AC / AB: Private / Aircraftsman / Able Seaman; JNCO: Junior Non-Commissioned Officer; SNCO: Senior Non-Commissioned Officer; WO: Warrant Officer; JCO: Junior Commissioned Officer; SCO: Senior Commissioned Officer
3.2 Measures

3.2.1 Demographic Questionnaire

The Demographic Questionnaire was designed specifically for the present study in order to gather the information displayed in Table 3.1. The questionnaire was designed to correspond with the Working Practices of the mTBI Team.

3.2.2 Hospital Anxiety and Depression Scale (HADS: Zigmond & Snaith, 1983)

The HADS is a widely used, 14-item self-report screening measure for anxiety and depression, and was the chosen measure for all existing studies investigating PTG in TBI (Hawley & Joseph, 2008; McGrath & Linley, 2006; Powell et al., 2007).

Each item is rated on a four-point scale, for which the accompanying qualitative descriptions vary according to the item. Respondents are asked to rate each item based upon how they have felt in the past week. The scale comprises a seven-item Anxiety (A) scale and a seven-item Depression (D) scale, which are scored separately by summing the score on the scale-specific items. Zigmond and Snaith (1983) recommend four scoring bands to guide the interpretation of the A- and D-scales ('Normal', 'Mild', 'Moderate' and 'Severe').

Internal consistencies for the A- and D-scales are reported at $\alpha = .93$ and $\alpha = .90$ respectively, and test-retest reliability at $\alpha = .89$ and $\alpha = .92$ (Moorey et al., 1991). The construct validity of the HADS was established in a factor analysis conducted by Moorey et al. (1991).

For the sample used in the present study, an internal consistencies of $\alpha = .87$ and $\alpha = .83$ were observed for the A- and D-scales respectively.

14 The Demographic Questionnaire can be found in Appendix B.3
15 The HADS (Zigmond & Snaith, 1983) is protected by copyright and was purchased from the licensed publisher for use in the present study
3.2.3 Post Traumatic Growth Inventory (PTGI: Tedeschi & Calhoun, 1996)\textsuperscript{16}

The PTGI is an instrument designed to assess positive outcomes self-reported by persons who have experienced traumatic events. The PTGI includes 21 items, each of which is rated on a five-point scale from 0 ('Did not experience') to 5 ('Experienced to a very great degree'), such as, 'I changed my priorities about what is important in life' and 'I have a greater sense of closeness with others'. There is no time scale specified within which to consider these experiences (for example, 'In the past month'); respondents are asked to reflect on their experiences since their traumatic experience. Scores on each item are then summed to yield a total score. Scores for the five factors of PTG (New Possibilities, Relating to Others, Personal Strength, Spiritual Change and Appreciation of Life) are generated by summing the factor-specific items contained within the scale.

Cut-off scores are not available for the PTGI; Tedeschi and Calhoun (1996) do not conceptualise PTG within a diagnostic framework and do not offer the PTGI as a tool with which to label persons as 'experiencing growth' vs. 'not experiencing growth'. Rather, PTG is a phenomenon on a continuum that can be observed in some persons following a traumatic experience and the PTGI is offered as a tool with which to investigate '... the personalities, coping styles and other processes related to a tendency to respond to difficult life experiences in a positive fashion' (Tedeschi & Calhoun, 1996, p. 469).

Tedeschi and Calhoun (1996) report internal consistency of $\alpha = .90$ for the whole scale. The five factors of PTG are also shown to have substantial internal consistencies; New Possibilities ($\alpha = .84$), Relating to Others ($\alpha = .85$), Personal Strength ($\alpha = .72$), Spiritual Change ($\alpha = .85$) and Appreciation of Life ($\alpha = .67$). Test-retest reliability for the PTGI is acceptable at $r = .71$.

For the sample used in the present study, an internal consistency of $\alpha = .89$ was observed for the whole scale. The five factors of PTG were internally consistent at; New Possibilities $\alpha = .78$, Relating to Others $\alpha = .82$, Personal Strength $\alpha = .67$, Spiritual Change $\alpha = .67$ and Appreciation of Life $\alpha = .71$.

\textsuperscript{16} The PTGI (Tedeschi & Calhoun, 1996) is not protected by copyright and can be found in Appendix B.4
Lee et al. (2010) conducted a confirmatory factor analysis of the PTGI with a large sample of serving military personnel returning from the Iraq and Afghanistan conflicts. As with the present study, Lee et al. modified the wording of the scale instructions to guide respondents towards considering a specific incident. The results of the confirmatory factor analysis provided support for use of the PTGI to measure PTG as both a uni-dimensional construct and a five factor multidimensional construct, with a serving military population.

In order to examine the construct validity of the PTGI, Tedeschi & Calhoun (1996) compared a sample of persons who had experienced severely traumatic events with those who had experienced relatively ordinary life events and observed that the PTGI does appear to measure benefits that are unique to traumatic experiences. The authors also noted that the PTGI was not related to social desirability as measured by the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960; as cited in Tedeschi & Calhoun, 1996).

It is noted that the PTGI has received criticism for containing exclusively positively-worded items, both from academic commentators (Aldwin & Levenson, 2004) and from respondents completing the measure (McGrath & Linley, 2006). As such, some have argued that the scale creates a positive response bias (Park & Lechner, 2006; Tomich & Helgeson, 2004). Baker et al. (2008) have recently developed a corresponding measure to assess 'Depreciation' in the same domains as the PTGI assesses growth. In their study, 286 undergraduate students reflected upon highly stressful life events and reported depreciation and growth in the same domains. Depreciation and growth were not correlated suggesting the independence of the two types of response. Thus, by employing the PTGI for the present study, the benefits of established validity and reliability are balanced by the lack of opportunity to contrast positive outcomes with negative outcomes.

3.2.4 Post Traumatic Stress Disorder Checklist – Military Version (PCL-M: Weathers et al., 1993)\(^{17}\)

\(^{17}\) The PCL-M (Weathers et al., 1993) is not protected by copyright and can be found in Appendix B.5
The PCL-M is a 17-item self-report measure of the DSM-IV symptoms of PTSD. Respondents rate how much they were 'Bothered by that problem in the past month' on a five-point scale from 1 ('Not at all') to 5 ('Extremely'). A total score for the scale is yielded by summing the individual item scores. A cut-off score of 50 has been recommended for military samples (Weathers et al., 1993). Although Weathers et al. (1993) originally suggested that a PTSD diagnosis could be derived by considering a score of three or higher as reflecting the presence of a particular symptom and by following the DSM-IV diagnostic roles to determine the appropriate number and pattern of symptoms, Blanchard et al. (1996) caution against this approach.

Blanchard et al. (1996) report internal consistency of $\alpha = .94$ for the PCL-M and test-retest reliability is reported at $r = .96$ (Weathers et al., 1993). Good construct validity for the PCL-M is indicated by substantial correlation with the 'gold standard' Clinician Administered PTSD Scale (CAPS: Blake et al., 1990) reported at $r = .93$.

For the sample used in the present study, an internal consistency of $\alpha = .90$ was observed for the PCL-M.

### 3.2.5 NEO Five-Factor Inventory (NEO-FFI: Costa & McCrae, 1992)

The NEO-FFI is a 60-item version of its parent measure, the 240-item NEO PI-R. The NEO-FFI benefits from the extensive development and validation work conducted with the NEO PI-R, and is recommended for situations whereby time is limited and global information on personality is considered sufficient (Costa & McCrae, 1992). It provides a brief, comprehensive measure of five domains of personality (Neuroticism, Extraversion, Openness to Experience, Agreeableness and Conscientiousness).

Five 12-item scales were extracted from the NEO PI-R to measure each of the five domains. Respondents rate their level of agreement with each item on a five-point scale ranging from 'Strongly Disagree' to 'Strongly Agree'. A raw score for each domain is yielded by summing the individual item scores. Raw

---

18 The NEO-FFI (Costa & McCrae, 1992) is protected by copyright and was purchased from the licensed publisher for the present study
scores are then converted to t-scores using the normative data provided in the instrument manual and can be classified as ‘Very Low’, ‘Low’, ‘Average’, ‘High’ or ‘Very High’ in comparison to the normative sample (Costa & McCrae, 1992).

Internal consistencies are reported as $\alpha = .86$ for Neuroticism, $\alpha = .77$ for Extraversion, $\alpha = .73$ for Openness to Experience, $\alpha = .68$ for Agreeableness and $\alpha = .81$ for Conscientiousness (Costa & McCrae, 1992). For the sample used in the present study, internal consistencies of $\alpha = .90$ for Neuroticism, $\alpha = .82$ for Extraversion, $\alpha = .62$ for Openness to Experience, $\alpha = .76$ for Agreeableness and $\alpha = .82$ for Conscientiousness were observed.

3.3 Procedure
The sample for the present study was identified as described above. Mangione’s (1998) multistep method was used to optimise response rate in the present study, as follows:

i. Step one: potential participants were contacted by telephone for an informal conversation during which the nature and purpose of the research was briefly explained and confidentiality of participant information was assured. An additional function of an initial telephone call was to gain the individual’s most up-to-date postal address, which had often changed since their involvement with the mTBI team.

ii. Step two: if potential participants had agreed to receive a questionnaire pack through the post, this was mailed to their postal address. The pack contained a detailed Participant Information Sheet (see Appendix B.1), a Consent Form to be signed and returned (see Appendix B.2), and the five questionnaires described in the Measures section. A checklist of items to be returned and a Stamped Address Envelope were also enclosed.

iii. Step three: Approximately one week after the questionnaire pack had been mailed, participants received a telephone call to ensure that they had received their measures.

iv. Step four: Approximately two weeks after the questionnaire pack had been mailed, participants received one further telephone call to
enquire as to whether any difficulties had been encountered in the
completion of the measures and to encourage participants to return
their packs.

A contact telephone number and dedicated email address were made
available to participants and advice was given to contact the lead investigator
at any time to address any difficulties that might be encountered in completing
the questionnaires.

Additionally, all patients referred to the mTBI team throughout the data
collection phase, providing they met the criteria of a 'Definite' or 'Possible'
diagnosis of mTBI, were offered the chance to participate in the research.

3.4 Ethics
The process of gaining ethical approval for the present study was lengthy and
considerably delayed the commencement of data collection. The initial
application for approval was made to the Ministry of Defence Ethics
Committee (MoDREC). The panel gave preliminary approval (see Appendix
C.1) conditional upon a number of minor amendments being made, including
consultation with the Head of Statistics at the Institute for Naval Medicine
regarding experimental design (see Appendix C.2). Following the completion
of agreed actions, the application was approved by MoDREC (see Appendix
C.3). An application was then made to the University of Surrey Faculty of Arts
and Human Sciences Ethics Committee (FAHS EC) whereby approval was
granted (see Appendix C.4). On commencement of data collection, it became
apparent that ethical approval may also be required from the Research Ethics
Committee responsible for a University Hospitals NHS Trust as all patients
referred to the UK Defence mTBI Team are initially processed through one of
two hospitals managed by an NHS Trust. The NHS REC also granted
approval for the present study.
4. Analysis and Results

Analysis and results are divided into three sections; 4.1) Descriptive data analysis, 4.2) Exploratory data analysis, 4.3) Inferential statistical analysis organised by hypotheses. All figures throughout the results section are to one decimal place. However, as exact probabilities are reported, p-values are to three decimal places. \( \alpha = 0.05 \) was adopted for all statistical tests. This was considered an adequate control for Type I error. Data was analysed using SPSS v. 15.0 for Windows.

4.1 Descriptive data analysis

Table 4.1 presents the mean scores, standard deviations and ranges for the entire sample on all of the standardised measurements used.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Min-Max Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HADS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Anxiety Score</td>
<td>7.9</td>
<td>4.5</td>
<td>1-20</td>
</tr>
<tr>
<td>(‘Normal’ range)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Depression Score</td>
<td>6.7</td>
<td>4.5</td>
<td>0-19</td>
</tr>
<tr>
<td>(‘Normal’ range)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PTGI</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Score</td>
<td>39.9</td>
<td>18.8</td>
<td>4-72</td>
</tr>
<tr>
<td>Relating to others</td>
<td>12.3</td>
<td>7.6</td>
<td>0-29</td>
</tr>
<tr>
<td>New possibilities</td>
<td>9.4</td>
<td>6.4</td>
<td>0-23</td>
</tr>
<tr>
<td>Personal strength</td>
<td>8.6</td>
<td>4.4</td>
<td>0-20</td>
</tr>
<tr>
<td>Spiritual change</td>
<td>1.3</td>
<td>2.0</td>
<td>0-7</td>
</tr>
<tr>
<td>Appreciation of life</td>
<td>8.2</td>
<td>3.6</td>
<td>0-15</td>
</tr>
<tr>
<td><strong>PCL-M</strong></td>
<td>40.5</td>
<td>13.7</td>
<td>19-75</td>
</tr>
<tr>
<td><strong>NEO-FFI</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neuroticism</td>
<td>55.9</td>
<td>12.3</td>
<td>29-75</td>
</tr>
<tr>
<td>(‘Average’ range)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extraversion</td>
<td>50.3</td>
<td>12.6</td>
<td>25-75</td>
</tr>
<tr>
<td>(‘Average’ range)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.2 **Exploratory data analysis**

Exploratory data analyses were performed on all continuous variables to be included in inferential statistical analysis, as follows:

- HADS A Scale
- HADS D Scale
- PTGI Total Score
- PTGI Relating to Others Factor Score
- PTGI New Possibilities Factor Score
- PTGI Personal Strength Factor Score
- PTGI Spiritual Change Factor Score
- PTGI Appreciation of Life Factor Score
- PCL-M Total Score
- NEO-FFI Neuroticism t-Score
- NEO-FFI Extraversion t-Score
- NEO-FFI Openness t-Score
- NEO-FFI Agreeableness t-Score
- NEO-FFI Conscientiousness t-Score
- Age
- Length of service
- Time since injury

4.2.1 **Missing data**

There were no values missing from the data set.

4.2.2 **Extreme values and outliers**

Boxplots were plotted for all score distributions on standardised measures (see Appendix D.1). Some extreme values were evident but no scores were classified as outliers. In order to confirm the visual indications of the boxplots,
Field (2009) recommends the conversion of values in a distribution to z-scores. By standardising values in this way, he explains, it is possible to identify univariate outliers which may impact upon the normality of the overall distribution. In a normal distribution, approximately 5 per cent of scores can be expected to have absolute z-scores greater than 1.96, approximately 1 per cent greater than 2.58, and none greater than 3.29. All scores in the data set for the present study were converted to z-scores and none were found to exceed 3.29 (see Appendix D.2). Therefore, no scores were considered to be outliers and it was not necessary to remove any values from the dataset.

Boxplots were also plotted for the variables of age, length of service and time since injury (see Appendix D.1). Some extreme values were identified for time since injury, and one value was classified as an outlier. It was not considered appropriate to remove these values from the data set as they represented the demographic, service and injury profile of the sample. Implications for analyses involving these variables were noted.

4.2.3 Normality of distributions

Frequency distributions for scores on standardised measures were plotted (see Appendix D.3) and checked visually for normality, skewness and kurtosis before being statistically confirmed.

Skewness and kurtosis scores were divided by their standard errors to generate z-scores (see Appendix D.4). With the exception of the z-scores for skewness on the PTGI Spiritual Change Factor \(z = 4.07\) and the NEO-FFI Agreeableness Domain \(z = 2.27\), z-scores for all distributions fell within the conventionally accepted value of 1.96 (for small sample sizes), indicating that these distributions were unlikely to deviate significantly from normal (Field, 2009).

Normality of distribution was further assessed with the widely used Kolmogorov-Smirnoff test and the more stringent Shapiro-Wilk test (see Appendix D.5). A total of four score distributions were found to be significantly non-normal: HADS Total Depression Score, \(D(41) = .139, p = 0.05\) and \(W(41) = .942, p = 0.04\); PTGI Spiritual Change Factor, \(D(41) = .330, p = 0.00\)
and \( W(41) = .709, p = 0.00; \) NEO-FFI Openness, \( D(41) = .154, p = 0.02; \) NEO-FFI Agreeableness, \( W(41) = .931, p = 0.02. \)

It is important to note that both the Kolmogorov-Smirnov test and the Shapiro-Wilk test are relatively conservative procedures, likely to detect even small deviations in normality in small samples (Field, 2009). Whilst the distributions above were found to be significantly non-normal, it was possible that they would have limited, if any, impact upon the statistical analysis. However, performing transformational procedures in an attempt to achieve normality was considered as an option (see Transformations below).

Frequency distributions were also plotted for the variables of age, length of service and time since injury (see Appendix D.3). These distributions were checked visually for normality, skewness and kurtosis before being statistically confirmed.

Distributions for length of service and time since injury were positively skewed and exceeded the conventionally accepted value of 1.96 (for small sample sizes), indicating that these distributions were likely to deviate significantly from normal (Field, 2009). Normality of distribution was further assessed with the widely used Kolmogorov-Smirnov test and the more stringent Shapiro-Wilk test (see Appendix D.5) which confirmed that distributions for age, length of service and time since injury were all significantly non-normal. It was considered inappropriate to attempt to perform transformations on these distributions in an attempt to achieve normality as they represented the demographic, service and injury profile of the sample. Again, implications for analyses involving these variables were noted.

4.2.4 Transformations
Score distributions found to be significantly non-normal underwent log transformations and square root transformations before Kolmogorov-Smirnov and Shapiro-Wilk tests were repeated (see Appendix D.5).

Neither log10 nor square root transformations were successful for the PTGI Spiritual Change score distribution. The PTGI Spiritual Change factor is
comprised of only two questionnaire items and is vulnerable to polarised responses according to the respondent's faith beliefs. Therefore, it is somewhat unsurprising that this distribution of scores was significantly skewed, non-normal and could not be successfully transformed. Additionally, neither log nor square root transformations were successful for the HADS Depression Total score distribution. Log10 and square root transformations were successful for the NEO-FFI Openness distribution and NEO-FFI Agreeableness distribution.

Despite the fact that transformations were successful for two out of four significantly non-normal distributions, these distributions were in the minority relative to the entire data set. However, in order to maintain the true relationships that exist between variables, transformations must be applied to all of the data in a data set (Field, 2009). For the present study, the majority of data would have been transformed unnecessarily. This unnecessary transformation is not without empirical implications.

Grayson (2004) notes that the empirical implications of applying transformations to a data set may outweigh statistical gains and describes the way in which statistical transformations change the empirical construct that is being measured; in clinical contexts particularly, Grayson notes that distributions on symptom-reporting scales are often positively skewed and that "in transforming, we may well be moving from the desired construct of, say, 'depression' to one of 'euphoria-sadness' in which we are simply not empirically interested" (p. 112). Grayson, therefore, advises against data transformations purely for statistical purposes.

Ultimately, and as Field (2009) notes, when deciding whether to perform transformations on non-normal data, the key issue is whether the statistical models that are applied perform better on transformed data than they do when applied to data that violates the assumption that the transformation corrects. This, Field explains, is directly related to the 'robustness' of the statistical test.
Tabachnik and Fidell (2007) define 'robustness' as "the researcher is led to correctly reject the null hypothesis at a given alpha level the right number of times even if the distributions do not meet the assumptions of analysis" (p. 78). The authors go on to note the ongoing debate regarding whether the majority of parametric procedures are robust to violations of the assumptions underlying them.

Taking in to account the issues described above, it was considered appropriate not to transform non-normal distributions in the present study. Parametric tests were used and checked against non-parametric equivalents when non-normal distributions were involved in analyses.

4.3 Inferential statistical analysis by hypotheses

4.3.1 Posttraumatic Growth in serving military personnel with suspected mTBI

- $H_1$ (one-tailed): Scores on the PTGI from a sample of serving military personnel with a diagnosis of suspected mTBI will be distributed similarly to scores generated by populations identified in the previous research literature using the PTGI to measure PTG following a traumatic experience.

Table 4.2 presents PTGI scores generated by populations identified in previous research literature, and by the sample for the present study.
Table 4.2
PTGI Total scores generated by populations identified in previous research literature, and by the sample for the present study

<table>
<thead>
<tr>
<th>Study</th>
<th>Population</th>
<th>Trauma event</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Median</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tedeschi &amp; Calhoun (1996)</td>
<td>College students</td>
<td>Various (experienced trauma of great severity in the past year)</td>
<td>604</td>
<td>73.61</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>McGrath &amp; Linley (2006)</td>
<td>NHS patients</td>
<td>Moderate to severe TBI ( \chi = 118 ) months ago</td>
<td>11</td>
<td>-</td>
<td>-</td>
<td>80</td>
<td>22-101</td>
</tr>
<tr>
<td>McGrath &amp; Linley (2006)</td>
<td>NHS patients</td>
<td>Moderate to severe TBI ( \chi = 7 ) months ago</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>51</td>
<td>32-91</td>
</tr>
<tr>
<td>Powell et al. (2007)</td>
<td>NHS patients</td>
<td>Moderate to severe TBI ( \chi = 19 ) months ago</td>
<td>23</td>
<td>36.5</td>
<td>18.7</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Powell et al. (2007)</td>
<td>NHS patients</td>
<td>Moderate to severe TBI ( \chi = 138 ) months ago</td>
<td>25</td>
<td>68.1</td>
<td>16.6</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Lee et al. (2010)</td>
<td>Serving military personnel</td>
<td>Deployment to Iraq or Afghanistan conflict</td>
<td>3537</td>
<td>52.04</td>
<td>22.98</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Present study</td>
<td>Serving military personnel</td>
<td>Mild TBI ( \chi = 18 ) months ago</td>
<td>41</td>
<td>39.8</td>
<td>18.8</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

The mean PTGI total score for the present study was lower than that reported by serving military personnel following deployment to Iraq or Afghanistan (Lee et al., 2010) but was comparable to that reported by NHS patients who had experienced moderate to severe TBI approximately 19 months previously (Powell et al., 2007). A one sample T-test confirmed that there was no
statistically significant difference between the mean PTGI Total score reported by Powell et al. (2007) and the mean PTGI Total score generated by the sample for the present study; \( t(40) = 1.14, p = 0.26 \).

Figure 4.1 presents a comparison between the mean PTGI factor scores generated by the Powell et al. (2007) sample and the sample for the present study. Differences between the scores generated by each sample were marginal and not statistically significant.

\( H_1 \) is retained in the knowledge that this is a preliminary indication of PTG in this specific population. This is considered further in Section 5, Discussion.

![Graph of PTGI Total score and PTGI factor scores generated by the Powell et al. (2007) sample and the sample for the present study](image)

**Figure 4.1:** PTGI Total score and PTGI factor scores generated by the Powell et al. (2007) sample and the sample for the present study

### 4.3.2 Posttraumatic Growth and personality

- \( H_2 \) (two-tailed): There will be a statistically significant correlation between scores on the PTGI and scores on the Neuroticism, Extraversion, Openness to Experience, Agreeableness and Conscientiousness domains of the NEO-FFI.
Pearson's $r$ correlations were calculated for the PTGI Total Score and five PTG factors, and the five personality domains of the NEO-FFI\(^{19}\). Table 4.3 presents the correlation matrix.

\(^{19}\) Composite scales of the PTGI and NEO-FFI do not share any individual scale items, therefore, correlations are not at risk of inflation (Tabachnik & Fidell, 2007).
<table>
<thead>
<tr>
<th>Life</th>
<th>PTLQ Appreciation of Change</th>
<th>Strength</th>
<th>PTLQ Personal Possibilities</th>
<th>PTLQ New Clients</th>
<th>PTLQ Relating to Others</th>
<th>PTLQ Total Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.78</td>
<td>1.69</td>
<td>0.08</td>
<td>0.94</td>
<td>0.40</td>
<td>0.11</td>
<td>0.04</td>
</tr>
<tr>
<td>0.83</td>
<td>0.50</td>
<td>0.14</td>
<td>0.82</td>
<td>0.04</td>
<td>0.04</td>
<td>0.26</td>
</tr>
<tr>
<td>0.94</td>
<td>0.39</td>
<td>0.69</td>
<td>0.95</td>
<td>0.03</td>
<td>0.85</td>
<td>0.24</td>
</tr>
<tr>
<td>0.98</td>
<td>0.39</td>
<td>0.69</td>
<td>0.95</td>
<td>0.03</td>
<td>0.85</td>
<td>0.24</td>
</tr>
<tr>
<td>0.99</td>
<td>0.39</td>
<td>0.69</td>
<td>0.95</td>
<td>0.03</td>
<td>0.85</td>
<td>0.24</td>
</tr>
<tr>
<td>1.11</td>
<td>0.72</td>
<td>0.49</td>
<td>0.88</td>
<td>0.14</td>
<td>0.24</td>
<td>0.48</td>
</tr>
</tbody>
</table>

Note: Significant at p < 0.05

Table A.4.3

Research Dossier: Major Research Project
Portfolio: Volume One
There was a significant positive correlation between the PTGI Relating to Others factor and NEO-FFI Openness \((r = .391, p = 0.01)\). Openness shared 15.3 per cent of the variability with Relating to Others \((R^2 = .153)\) and the effect size \((r)\) was classified as 'Large'. There was also a significant positive correlation between the PTGI Spiritual Change factor and NEO-FFI Openness \((r = .382, p = 0.01)\). Openness shared 14.6 per cent of the variability with Spiritual Change \((R^2 = .146)\) and the effect size \((r)\) was classified as 'Large'.

There was a significant negative correlation between the PTGI New Possibilities factor and NEO-FFI Agreeableness \((r = -.318, p = 0.04)\). Agreeableness shared 10.1 per cent of the variability with New Possibilities \((R^2 = .101)\) and the effect size \((r)\) was classified as 'Medium'. There was also a significant negative correlation between the PTGI Total Score and NEO-FFI Conscientiousness \((r = -.311, p = 0.05)\). Conscientiousness shared 9.7 per cent of the variability with the PTGI Total score \((R^2 = .097)\) and the effect size \((r)\) was classified as 'Medium'.

As a number of the distributions included in these correlations were found to be significantly non-normal, the non-parametric equivalent Spearman's Rho was also carried out. The Spearman's Rho analysis confirmed the significant Pearson's \(r\) correlations, and revealed one further; there was a significant negative correlation between the PTGI New Possibilities factor and NEO-FFI Conscientiousness \((r_s = -.324, p = 0.04)\), Conscientiousness sharing 10.5 per cent of the variability with New Possibilities \((R^2 = .105)\).

Correlations between NEO-FFI Neuroticism and the PTGI Total score and five factor scores were consistently positive with small effect sizes \((r)\), and none reached significance. Correlations between NEO-FFI Extraversion and the PTGI Total score and five factor scores were negative with the exception of that with Personal Strength, all with small effect sizes \((r)\). Again, none reached significance.

---

20 Pearson's \(r\) effect size conventions are: small, \(r = 0.1 - 0.23\); medium, \(r = 0.24 - 0.36\); large, \(r = 0.37\) or larger (Cohen, 1988).
$H_2$ is retained in part as some factors of the PTGI were observed to be significantly correlated with domains of the NEO-FFI. Where $H_0$ is accepted, it is done so cautiously in the knowledge that the design may have been under-powered, thus increasing the risk of Type II error.

### 4.3.3 Posttraumatic Growth and psychological well-being

Pearson's $r$ correlations were calculated for the PTGI Total Score and five factors, and the Anxiety scale of the HADS, the Depression scale of the HADS and the PCL-M Total score. Table 4.4 presents the correlation matrix.

**Table 4.4**

*Correlation coefficients between Posttraumatic Growth, Anxiety, Depression and Posttraumatic Stress*

<table>
<thead>
<tr>
<th></th>
<th>HADS Anxiety</th>
<th>HADS Depression</th>
<th>PCL-M</th>
</tr>
</thead>
<tbody>
<tr>
<td>$r$</td>
<td>Sig.</td>
<td>$r$</td>
<td>Sig.</td>
</tr>
<tr>
<td>PTGI Total Score</td>
<td>.093</td>
<td>.562</td>
<td>-.182</td>
</tr>
<tr>
<td>PTGI Relating to Others</td>
<td>.045</td>
<td>.781</td>
<td>-.087</td>
</tr>
<tr>
<td>PTGI New Possibilities</td>
<td>.152</td>
<td>.341</td>
<td>-.085</td>
</tr>
<tr>
<td>PTGI Personal Strength</td>
<td>.044</td>
<td>.784</td>
<td>-.351</td>
</tr>
<tr>
<td>PTGI Spiritual Change</td>
<td>.031</td>
<td>.846</td>
<td>-.096</td>
</tr>
<tr>
<td>PTGI Appreciation of Life</td>
<td>.053</td>
<td>.743</td>
<td>-.131</td>
</tr>
</tbody>
</table>

*Note.*

* Significant at $p \leq 0.05$

- $H_2$ (two-tailed): There will be a statistically significant correlation between scores on the PTGI and scores on the Depression scale of the HADS.

There was one statistically significant correlation found, which was the negative correlation between the PTGI Personal Strength factor and the
Depression scale of the HADS ($r = -0.351$, $p = 0.02$). Depression shared 12.3 per cent of the variability with Personal Strength ($R^2 = .123$) and the effect size was classified as ‘Medium’. Correlations between Depression, the PTGI Total Score and the remaining four factors were consistently negative in direction.

As the distribution of scores on the HADS Depression was found to be significantly non-normal, the non-parametric equivalent Spearman’s Rho was also carried out. The Spearman’s Rho analysis confirmed the significant negative correlation between Personal Strength and Depression, ($r_s = -0.344$, $p = 0.03$), Depression sharing 11.8 per cent of the variability with New Possibilities ($R^2 = .118$).

$H_3$ is retained in part as HADS Depression was found to be significantly correlated with the Personal Strength Factor of the PTGI. Where $H_0$ is accepted for the PTGI Total and remaining four factors, it is done so cautiously in the knowledge that the design may have been under-powered, thus increasing the risk of Type II error.

- **$H_4$** (two-tailed): There will be a statistically significant correlation between scores on the PTGI and scores on the Anxiety Scale of the HADS.

There were no statistically significant correlations found. Correlations between Anxiety and the PTGI Total Score and five factors were consistently positive in direction with small effect sizes ($r$). $H_0$ is accepted cautiously in the knowledge that the design may have been under-powered, thus increasing the risk of Type II error.

- **$H_5$** (two-tailed): There will be a statistically significant correlation between scores on the PTGI and scores on the PCL-M.

There were no statistically significant correlations found. Correlations between the PCL-M and the PTGI Total Score and factors were consistently positive in direction with small effect sizes ($r$). $H_0$ is accepted cautiously in the knowledge
that the design may have been under-powered, thus increasing the risk of Type II error.

4.3.4 Posttraumatic growth and features of mTBI

- $H_{6a}$ (two-tailed): There will be a statistically significant correlation between scores on the PTGI and self-reported length of time since injury, and corresponding injury to other parts of the body.

Spearman's Rho correlations were calculated for the PTGI Total Score and five PTG factors, and self-reported time since injury. The use of a non-parametric test for this hypothesis was informed by the fact that the variable of time since injury contained extreme values and one outlying value (minimum time since injury, four months; maximum time since injury, 60 months) and the distribution was positively skewed and significantly non-normal. No attempt had been made to transform the values in this distribution. Table 4.5 presents the correlation matrix.

<table>
<thead>
<tr>
<th>Table 4.5</th>
<th>Correlation coefficients between Posttraumatic Growth and time since injury</th>
</tr>
</thead>
<tbody>
<tr>
<td>N = 41</td>
<td>Time since injury</td>
</tr>
<tr>
<td>rs</td>
<td>Sig.</td>
</tr>
<tr>
<td>PTGI Total Score</td>
<td>0.064</td>
</tr>
<tr>
<td>PTGI Relating to Others</td>
<td>-0.099</td>
</tr>
<tr>
<td>PTGI New Possibilities</td>
<td>0.163</td>
</tr>
<tr>
<td>PTGI Personal Strength</td>
<td>0.223</td>
</tr>
<tr>
<td>PTGI Spiritual Change</td>
<td>-0.108</td>
</tr>
<tr>
<td>PTGI Appreciation of Life</td>
<td>-0.024</td>
</tr>
</tbody>
</table>

There were no statistically significant correlations found. The factors of Relating to Others, Spiritual Change and Appreciation of Life were negatively
correlated with time since injury, whereas the PTGI Total score, New Possibilities and Personal Strength were positively correlated with time since injury. $H_0$ is accepted cautiously in the knowledge that the design may have been under-powered, thus increasing the risk of Type II error.

Planned analysis of the relationship between PTG and other concurrent physical injury at the time of sustaining mTBI was not carried out. As 90.2 per cent of the sample for the present study indicated that they had sustained other concurrent physical injuries, this variable was too unevenly split to perform meaningful comparisons between groups.

- $H_6$ (two-tailed): There will be a statistically significant difference between scores on the PTGI generated by patients currently undergoing treatment with the mTBI team and patients who have completed their treatment.

An independent samples t-test was performed to investigate differences in PTGI Total and factor scores between patients classified by the mTBI Team as ‘Current’ and those classified as ‘Treated’. Table 4.6 presents the mean and standard deviation values by group, and the results of the t-test.

Mean scores, with the exception of the Appreciation of Life factor, were consistently higher for those in the ‘Treated’ group, as were the extents of variation around the mean scores. There were no statistically significant differences in score on the PTGI between ‘Current’ and ‘Treated’ patients. Therefore, $H_0$ is retained cautiously in the knowledge that the design may have been under-powered, thus increasing the risk of Type II error.

Table 4.6

21 It is important to note that ‘Current’ and ‘Treated’ status are not necessarily related to time since injury. There are a number of factors which impact upon the time that elapses between injury and presenting for treatment. For example, a number of service personnel will go on to complete a period of deployment following suspected mTBI and will not report to health professionals until their return. Injured personnel who return from deployment may have a number of additional serious physical injuries for which treatment is prioritised over mTBI. In the present study, the mean time since injury was 17.0 months for ‘Current’ patients and 21.6 months for ‘Treated’ patients.
### Independent samples t-test for PTGI scores between 'Current' and 'Treated' patients

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTGI Total Score</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current</td>
<td>26</td>
<td>39.1</td>
<td>16.0</td>
<td>.311</td>
<td>.759</td>
</tr>
<tr>
<td>Treated</td>
<td>15</td>
<td>41.2</td>
<td>23.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTGI Relating to Others</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current</td>
<td>26</td>
<td>12.7</td>
<td>7.4</td>
<td>.386</td>
<td>.701</td>
</tr>
<tr>
<td>Treated</td>
<td>15</td>
<td>11.7</td>
<td>8.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTGI New Possibilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current</td>
<td>26</td>
<td>9.0</td>
<td>5.9</td>
<td>.462</td>
<td>.647</td>
</tr>
<tr>
<td>Treated</td>
<td>15</td>
<td>10.0</td>
<td>7.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTGI Personal Strength</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current</td>
<td>26</td>
<td>7.7</td>
<td>3.6</td>
<td>1.71</td>
<td>.094</td>
</tr>
<tr>
<td>Treated</td>
<td>15</td>
<td>10.1</td>
<td>5.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTGI Spiritual Change</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current</td>
<td>26</td>
<td>1.2</td>
<td>1.9</td>
<td>.262</td>
<td>.794</td>
</tr>
<tr>
<td>Treated</td>
<td>15</td>
<td>1.4</td>
<td>2.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTGI Appreciation of Life</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current</td>
<td>26</td>
<td>8.4</td>
<td>3.5</td>
<td>.378</td>
<td>.708</td>
</tr>
<tr>
<td>Treated</td>
<td>15</td>
<td>7.9</td>
<td>4.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note.**

Levene’s test for equality of variances was significant. Values of t and Sig. are reported as equal variances not assumed.

4.3.5 Posttraumatic growth and features of military service

- $H_{7b}$ (two-tailed): There will be a statistically significant correlation between scores on the PTGI and certain features of military service and demographic factors, namely, length of time in service and age.
Spearman's Rho correlations were calculated for the PTGI Total Score and five PTG factors, length of time in service and age. The use of a non-parametric test for this hypothesis was informed by the fact that the variables of length of time in service and age were positively skewed and significantly non-normal in distribution. No attempt had been made to transform the values in these distributions. Table 4.6 presents the correlation matrix.

<table>
<thead>
<tr>
<th>Table 4.6</th>
<th>Correlation coefficients between Posttraumatic Growth, length of time in service and age</th>
</tr>
</thead>
<tbody>
<tr>
<td>N = 41</td>
<td>Length of Service</td>
</tr>
<tr>
<td></td>
<td>rs</td>
</tr>
<tr>
<td>PTGI Total Score</td>
<td>-.107</td>
</tr>
<tr>
<td>PTGI Relating to Others</td>
<td>-.077</td>
</tr>
<tr>
<td>PTGI New Possibilities</td>
<td>-.228</td>
</tr>
<tr>
<td>PTGI Personal Strength</td>
<td>-.175</td>
</tr>
<tr>
<td>PTGI Spiritual Change</td>
<td>-.114</td>
</tr>
<tr>
<td>PTGI Appreciation of Life</td>
<td>.058</td>
</tr>
</tbody>
</table>

* Significant at p ≤ 0.05
** Significant at p ≤ 0.01

There were no statistically significant correlations found between length of time in service and PTG. With the exception of the correlation between the Appreciation of Life factor and length of service, the PTGI Total score and all factor scores were positively correlated with length of service.

There was a statistically significant negative correlation between age and the Personal Strength factor of the PTGI (rs = -.373, p = 0.02). As length of time in service was highly correlated with age (r = .780, p = 0.00), it was
considered appropriate to conduct a partial correlation between the PTGI Total Score and five PTG factors and age, controlling for length of time in service. The partial correlation confirmed the significance of the negative correlation between age and the Personal Strength factor of the PTGI when length of time in service was controlled for \( r = -.456, p = 0.00 \).

- \( H_{7b} \) (two-tailed): There will be a statistically significant difference between scores on the PTGI generated by participants holding different military ranks

Figure 4.2 presents the mean PTGI Total and factor scores by military rank. Planned analysis of differences between PTG amongst military ranks was not carried out as adequate cases did not exist within any one rank to allow meaningful comparisons between groups. By combining groups, it was possible to create larger groups for comparison, resulting in Private / Aircraftsman / Able Seaman, Non-commissioned Officers and Commissioned Officers (relating to junior, intermediate and senior ranks respectively). However, the extent to which these divisions were empirically meaningful could be questioned\(^{22}\).

The correlations previously performed between PTG, length of time in service and age were considered to be more meaningful.

\(^{22}\) Based upon extent and quality of training, those holding higher ranks could be argued to be a qualitatively different group to those holding lower ranks. However, this distinction is complicated by a number of factors. For example, rank does not necessarily reflect length of service or age; a junior officer in his mid-thirties with 20 years of service who has been commissioned from the ranks may hold the same rank as an 18 year old junior officer who has recently completed officer training and has no experience in the armed forces. This possibility arises from the differing ways in which it is possible to attain certain ranks in the armed forces, for example, through working one's way through the ranks, or, by entering the armed forces with a university degree. In the present study, for example, the mean age of JCOs was 28.8 years, younger than the mean age of 37.3 years for SNCOs, the rank below. Similarly, mean length of service for JCOs was 73 months, compared to 190 months for SNCOs, the rank below. In accordance with the highly variable career paths in the armed forces, there was large variation around the mean for length of time in service across all ranks.
Figure 4.2: Mean PTGI Total and factor scores by military rank

Note.  
Pte / AC / AB: Private / Aircraftsman / Able Seaman; JNCO: Junior Non-Commissioned Officer; SNCO: Senior Non-Commissioned Officer; WO: Warrant Officer; JCO: Junior Commissioned Officer; SCO: Senior Commissioned Officer
5. Discussion

5.1 Main findings

5.1.1 Posttraumatic Growth in serving military personnel with suspected mTBI
The findings from the present study indicate that serving military personnel who have sustained mTBI do experience PTG, at a lower level than that reported by serving military personnel following deployment to Iraq or Afghanistan (Lee et al., 2010), but at a level comparable to a civilian population who had sustained moderate to severe TBI with approximately the same amount of time elapsed since injury (Powell et al., 2007).

In comparison to the college student sample used in Tedeschi and Calhoun’s (1996) original work attempting to quantify PTG, the sample in the present study could be argued to have scored much lower. There are a number of possible explanations for this. Firstly, the Tedeschi and Calhoun (1996) sample was predominantly female, and it was observed that females reported much higher levels of growth than males. The participants in the present study were all male, therefore, we might expect to see a lower level of growth reported.

Secondly, the majority of the Tedeschi and Calhoun sample reported a time interval of two to four years since trauma. Whilst the findings of the present study did not indicate a significant correlation between PTG and time since injury, an incremental tendency of PTG over time has been found elsewhere (McGrath & Linley, 2006; Powell et al., 2008). The present study sample reported trauma approximately 18 months prior to participation, therefore, if PTG is incremental, the Tedeschi and Calhoun sample had a larger number of respondents who might have reflected this tendency and reported higher levels of growth.

Due to the varying lengths of follow-up intervals used in research examining the hypothesis of incremental growth over time, it is difficult to establish whether the sample in the present study would be considered to be early in their journey of recovery, or further advanced. The mean length of time since
injury (18 months) is comparable to Powell et al. (2007) 'early' brain-injured group but longer than the 'early' brain-injured group sampled by McGrath and Linley (2006). If the sample for the present study is to be considered early in their journey of recovery, their reported levels of growth may reflect inadequate time for cognitive processing (Tedeschi & Calhoun, 1995).

Additionally, there may be some factors unique to brain injury that moderate the pace and extent of posttraumatic growth, leading to a more gradual emergence and lower reported levels early after trauma. McGrath and Linley (2006) point out that there is a well-documented gradual increase in understanding of the long-term consequences of brain injury following discharge from treatment and rehabilitation services, and that levels of insight in the early stages of recovery from brain injury are notoriously low. Powell et al. (2007) consider the possibility that, for individuals with brain injury, PTG increases over time in line with the process of gaining insight and awareness.

Finally, as previously discussed, Tedeschi and Calhoun (2004) suggest that individuals with high levels of resilience, hardiness and coping are unlikely to report high levels of PTG as their personal characteristics preclude the significant struggle with a traumatic experience from which PTG emerges. It is possible that the sample for the present study, routinely exposed to experiences that a civilian may perceive as highly traumatic, are able to draw upon aspects of resilience and hardiness gained through their extensive training to protect themselves from the type of struggle from which PTG can emerge.

5.1.2 Posttraumatic Growth and Personality
Based upon indications from the research literature, it was considered appropriate to consider the personality as a variable when examining PTG following mTBI. However, the results of the present study as regards the relationship between growth and personality are inconsistent and concur with the original findings of Tedeschi and Calhoun (1996) only in that Neuroticism did not appear to be meaningfully related to growth in military personnel with suspected mTBI.
However, the personality domain of Conscientiousness was found to be moderately, negatively associated with PTG in the present study, meaning that those who were high in Conscientiousness tended to report lower levels of growth. This is clearly at odds with Tedeschi and Calhoun's finding of a small, positive relationship between Conscientiousness and growth, which the authors suggested was reflective of the fact that those who are disciplined and orderly draw upon these qualities following a traumatic experience. For the military sample, this does not appear to be the case.

Whilst the present study benefits from the comparability with previous research that results from utilising the same standardised measures, the primary complicating factor in drawing these comparisons is that of comparing civilian samples with military samples. Whilst a review of personality research literature was far beyond the scope of the present study, it is possible that civilian and military samples would differ in terms of their personality profile. It may be that certain aspects of personality draw an individual towards a career in the military, or, that military training impacts upon aspects of an individual's existing personality. However, compared to a 'Normal' male population, the sample in the present study scored within 'Average' range for Conscientiousness, which appears to indicate that the present sample was not defined by extreme ranges of any personality domains.

If it is assumed that the military sample in the present study does not differ from the normative civilian population used to standardise the personality measure employed (i.e. there is not a quantitative difference in the levels of conscientiousness between the civilian and military population), it may be that conscientiousness holds a different qualitative meaning for military populations and, therefore, has different implications for growth.

Costa and McCrae (1992, p.28) define conscientiousness as "This individual is rational, prudent, practical, resourceful, and well-prepared. He is very neat, punctual and well organised and highly conscientious, adhering strictly to his ethical principles. He has a high aspiration level and strives for excellence in whatever he does. He is determined, persistent, and able to force himself to
do what is necessary. He is cautious and deliberate and thinks carefully before acting”.

Applied to the military context, there may be an explanation as to why this definition of conscientiousness might be negatively related to PTG. Using the typical participant from the present study as an example, a young, white British male who is a conscientious, lower ranking member of the Army is likely to rigidly follow the orders of his seniors, uphold the ethical principles and values of the British Armed Forces and cooperate with the career path deemed suitable for him, accepting postings and deployments that may not necessarily have been his preference. This could be argued to be somewhat at odds with certain factors of PTG, such as New Possibilities (beginning to make choices in a more conscious manner according to a life plan) and Appreciation of life (rethinking values and priorities about what is important in life, acting differently in accordance with changed values and priorities). The possibility that conscientiousness, typically seen as a desirable quality, might be psychologically restrictive in this context is an interesting point for reflection.

5.1.3 Posttraumatic growth and psychological well-being

The results of the present study pertaining to the relationship between PTG and psychological well-being are mixed, with no significant relationships identified between growth, anxiety and posttraumatic stress symptoms, but a significant relationship identified between one facet of growth and depression. This mixed picture is somewhat unsurprising based upon indications from previous literature examining PTG in brain injured patients, which documented positive, negative and null relationships between the concepts (Hawley & Joseph, 2008; McGrath & Linley, 2006; Powell et al., 2007).

The relationship between PTG and anxiety in the present study was positive, but small and not significant. This may be due to the relatively early stage post-brain injury at which anxiety was assessed. McGrath and Linley (2006) noted that levels of anxiety in their ‘Late’ sample were higher than that in their ‘Early’ sample, and suggested that this was reflective of a gradual increase in understanding of the longer-term consequences of brain injury after discharge.
from rehabilitation. Whilst the present study focussed on those with a milder form of injury, all were still actively involved with rehabilitation services and the level of support they were in receipt of may have been protective against developing symptoms of anxiety.

The relationship between PTG and symptoms of posttraumatic stress in the present study was, again, positive but small and not significant. The positive nature of the relationship is consistent with previous literature (Helgeson et al., 2006) and may be reflective of the levels of growth reported by those with 'subsyndromal' levels of PTSD symptomatology (Butler et al., 2005) as the average symptom levels reported by the present sample did not reach the level recommended as indicating 'caseness' on the particular instrument used (Weathers et al., 1993).

One aspect of PTG, that of Personal Strength, was moderately and significantly related to Depression; those who reported lower levels of Depression reported higher levels of growth in the area of Personal Strength (expressing greater self-reliance and feeling more able to accept how things turn out. Recognition of personal vulnerability, but development of personal strength that may help in hardships to be encountered in the future). Due to the correlational design of the present study, a causal element to this relationship cannot be established, but speculatively, it may be that those who experienced growth in the area of Personal Strength were protected against developing symptoms of Depression.

The findings from the present study fit with previous research that found a relationship between psychological growth and low levels of Depression (Helgeson et al., 2006), including research with the brain-injury population (Hawley & Joseph, 2008). However, caution should be exercised in drawing comparisons between the present study and the work of Hawley and Joseph (2008) due to the methodological issues described in section one.

5.1.4 Posttraumatic Growth and features of mTBI

The findings from the present study do not indicate a significant relationship between PTG and time since injury. This does not concur with previous
studies that have found higher levels of PTG in brain injured clients with greater lengths of time elapsed since injury, compared to those who have sustained an injury relatively recently (McGrath & Linley, 2006; Powell et al., 2008). The most likely explanation for the differing findings of the present study is the relative homogeneity of time since injury across the sample \((x = 18.7 \text{ months}, \text{SD} = 13.2 \text{ months})\). Compared to previous samples that have shown incremental growth (118 months post injury: McGrath & Linley, 2006; 11.6 years post injury: Powell et al. 2007) the sample for the present study were at a relatively early stage in their recovery, particularly if the process of growth is more gradual in those who have sustained brain injury in line with gaining insight and awareness (Powell et al., 2007).

The homogeneity of time since injury in the present sample may also have contributed to the lack of difference between those patients classified as 'Current' and 'Treated'. As noted in section four, there are a number of factors which impact upon the time that elapses between injury and presenting for treatment in a military population which results in 'Current' and 'Treated' status being relatively unrelated to time since injury. Whilst the present study did not indicate a significant correlation between PTG and time since injury, it is important to note that an incremental tendency of PTG over time has been found elsewhere (McGrath & Linley, 2006; Powell et al., 2007).

5.1.5 Posttraumatic Growth and features of military service

The results of the present study indicated that one aspect of PTG, that of Personal Strength, was strongly and significantly related to Age; those who were younger in age reported higher levels of psychological growth in the area of personal strength even when length of time in service was controlled for. This is of particular interest with regards to military personnel who report mTBI, as they tend to be significantly younger and more junior in rank than personnel with other injuries (Hoge, 2008). Speculatively, it may be that younger individuals are more able to be accepting of their experiences and transform recognition of their personal vulnerability into personal strength in anticipation of further hardships in the future. This may be a function of an earlier life stage, which might be associated with less tangible career,
financial and personal commitments, hence, increased flexibility allowing acceptance of changed circumstances following injury.

5.1.6 Summary of main findings
To summarise, the findings of the present study suggest that serving military personnel with suspected mTBI do experience PTG at a comparable level to civilians who have sustained mild to severe TBI. Those who were highly conscientious reported lower levels of growth. Growth did not appear to be related to symptoms of anxiety or posttraumatic stress, but aspects of growth were related to symptoms of depression, in that, those who reported greater growth in the area of personal strength reported fewer symptoms of depression. Growth did not appear to be related to time since injury in the present study, but aspects of growth were related to the age of the respondent, in that, those who reported greater growth in the area of personal strength were younger in age.

5.2 Limitations
The findings from the present study must be interpreted in the light of the methodological limitations of the research.

Firstly, all data was self-reported. The potential biases involved in self-report data is a common difficulty in applied research, but is particularly pertinent in research examining experiences of psychological growth. A number of researchers have called in to question the validity of self-reported growth, arguing that it is representative of defensive functioning or positive self-attribution (Cohen et al. 1998; Frazier et al., 2009; McFarland & Alvaro, 2000).

Secondly, the cross-sectional, survey design limits the conclusions that can be drawn as does the correlational analysis which does not allow inference of causality in the relationships between variables that are identified. Even if causality could be inferred, the complex nature of the traumatic events experienced by military personnel make attributions of causality extremely complicated. It has been demonstrated that deployment to an operational theatre of war, without the occurrence of injury or a specific index trauma event, can result in posttraumatic growth (Lee et al., 2010). Whilst the sample
in the present study were instructed to reflect specifically on their mTBI when completing the assessment of growth, it seems reasonable to hypothesise that a retrospective process of attributing certain changes in oneself to mTBI in isolation from the entire deployment experience would prove a very difficult task for a respondent.

Furthermore, in line with the polytraumatic profile of injuries sustained in modern warfare (Brenner et al., 2009), over 90 per cent of the sample for the present study had sustained concurrent physical injuries at the time of mTBI. Whilst they were engaged with an mTBI intervention at the time of participation and, it could be argued, focused on the symptoms and consequences of mTBI, it is likely that any psychological growth reported could be equally attributed to other physical injuries that they had sustained concurrently. The fact that mTBI rarely occurs in isolation for serving military personnel has implications for isolating the impact of this injury in applied research.

Thirdly, as explained in section three, the present study adhered to the Defence mTBI Team's criteria of 'Definite' or 'Possible' mTBI in order to identify potential participants. The difficulties involved in rigid adherence to the WHO criteria have been described earlier and will not be covered again here, however, it must be noted that clinical judgements regarding whether an mTBI has been sustained can rarely be made with absolute certainty in the military context and it is possible that some participants in the sample for the present study may not have met the WHO criteria for mTBI.

Fourthly, the sample size for the present study is relatively small. As noted in the earlier discussion of desirable sample size, it is hoped that the numbers of serving military personnel who experience mTBI does not reach high levels, but failing to conduct research with this population based upon a-priori power analyses that indicate unobtainable sample sizes may lead to this important population being under-represented in the research literature. However, the implications for the statistical power of the present study design cannot be overlooked and it is likely that some relationships may have been missed as a result of an under powered design.
A related issue is that of response bias. It is possible that those who responded had positive perceptions of the service that they had received from the Defence mTBI Team and felt compelled to contribute to the research as a result. Additionally, those who responded may have been defined by lower levels of symptomatology and higher levels of psychological well-being, which may have made participation seem a more manageable task. Furthermore, applied research with the military population is complicated by the extent to which they are a transient group, both geographically and between the various trade arms of the forces. Serving military personnel move between locations and vocations frequently and it is likely that many potential respondents simply did not receive notification of the research.

5.3 Implications for further research

It could be argued that only longitudinal, randomised, experimental designs, manipulating independent variables and controlling for extraneous ones can be properly explicative of phenomena such as PTG. Due to the various complicating factors (discussed throughout this report) involved in real world research with the military population, such ideals of research design are difficult to achieve. However, there are a number of ways in which future research examining PTG in serving military personnel with mTBI could build and improve upon the present study.

Future research would ideally be prospective in design. This would allow an investigation of potential predictors for a growth response to mTBI. As identified by DMSD (2008) there is currently a knowledge gap regarding the long-term predictors for ongoing symptomatology following mTBI. Using the results from the present study as baseline, it may be possible examine whether higher levels of growth reported in the 18 months following mTBI predict levels of persistent symptomatology in the future. It would also be useful to compare a sample of serving military personnel who have sustained mTBI with a group of serving military personnel from the same deployment who sustained an injury not involving mTBI, and a control group who sustained no physical injury at all on that deployment. Additionally, a more varied sample in terms of gender, rank, length of service and age would be desirable.
Further research would also need to take in to consideration the possibility that military personnel develop certain qualities through their training that might limit the extent of PTG that they are able to experience (Levine et al., 2009; Tedeschi & Calhoun, 2004). Therefore, standardised measures of resilience and hardiness would need to be included. Similarly, there may be some factors unique to brain injury that moderate the pace and extent of PTG, including the process of gaining insight and awareness following injury (Powell et al., 2007) and length of involvement with rehabilitative services (McGrath & Linley, 2006). The present study would have been improved with an assessment of insight, but this is notoriously difficult to measure (Powell et al., 2008). For future research in this population, it may be useful to take these factors in to consideration.

5.4 Implications for the clinical care of military personnel with suspected mTBI
As Park (2004) notes, in the absence of any improvement in feeling, functioning or behaviour for those who report psychological growth, the concept of PTG is of little import.

Calhoun and Tedeschi (1998) refer to the various stages of therapeutic work with individuals who have experienced a traumatic event, beginning with psychological stabilisation and creating safety within the therapeutic relationship. The authors argue that the implications of posttraumatic growth for psychological intervention become most relevant in the latter stages whereby meaningful connections to the individual's support system are re-established or renewed, and the assumptive world is rebuilt and restructured.

Calhoun and Tedeschi (2006) suggest that clinicians can be expert companions on the journey towards adjustment for their clients. By being attentive to the discovery of aspects of PTG, labelling and reinforcing it, the authors suggest that clinicians can begin to facilitate it. There have been some attempts to formalise models of intervention based upon the principles of PTG, such as the OTHER(S) models developed by Fazio (2009) which comprises eight resources promoting growth following loss or adversity and involves the clinician as 'Growth Consultant'. There are, as yet, no controlled
evaluations of the clinical efficacy of such approaches. However, a number of studies focusing on the experiences of individuals with traumatic injuries suggest that the facilitation of posttraumatic growth may be a promising approach.

For example, Turner and Cox (2004) explored the recovery experiences of 13 people who had been cared for in a rehabilitation unit following traumatic physical injuries using semi-structured interviews. The authors identified two core themes from their analysis, which they reported as indicative of PTG, those being, 'The Strength of Willpower' and 'Altered Perspectives'. In particular, Turner and Cox (2004) noted the desire of their participants not only to return to previous levels of functioning, but to reach new levels of achievement in their future, reflecting the transformative quality of PTG (Tedeschi & Calhoun, 2004). Turner and Cox (2004) conclude by outlining a number of strategies for those clinicians working with survivors of traumatic injuries which might facilitate posttraumatic growth which, they argue, is essential to recovery.

In a study examining PTG in a sample of individuals with moderate to severe brain injury, McGrath & Linley (p. 772) conclude 'If the key predictors and temporal course of post-traumatic growth following brain injury can be delineated, psychotherapeutic approaches to this group that are focused on hope and the potential for positive change, despite the negative consequences of brain injury, will be significantly advanced'. Powell et al. (2007; p. 37) lend their support to these conclusions and state that "Head injury specialists of all disciplines should be aware of the concept of posttraumatic growth so that they can use it in their management of brain injury survivors".

6. Conclusion
As is clear from section one, a lack of consensus remains regarding what reports of PTG actually reflect, whether that might be actual changes in an individual's life, coping strategies employed by the individual, or cognitive manipulations directed by self-enhancement biases meant to alleviate distress. Similarly, considerable debate remains regarding whether
impairments observed following mTBI are attributable to organic neurological insult, psychological distress, or an interaction of the two. This is further complicated in the serving military population by the intense and threatening context in which serving members of the armed forces live, perform their duties and, sometimes, are injured.

However, the present study suggests that, regardless of unresolved issues at a theoretical level, there are a group of individuals serving in the UK armed forces who report experiencing mTBI, consequent PCS, and PTG. Whilst it is clearly essential for health professionals and researchers to direct efforts towards clarifying unresolved issues in the PTG and mTBI research literatures, a clinical need remains in the interim. In the context of a distinct lack of evidence-based interventions for PCS following mTBI, preliminary indications point towards the efficacy of psychoeducational interventions focused on normalisation of symptoms and raising expectations of rapid recovery in reducing the likelihood of persistent symptoms and ongoing functional impairment. Therefore, it seems that approaches involving the recognition, reinforcement and facilitation of PTG may represent a solid foundation upon which to build effective interventions for this group.
References


Moorey, S., Greer, S., Watson, M., Gorman, C., Rowden, L., Tunmore, L. *et al*. (1991). The factor structure and factor stability of the Hospital Anxiety and


Appendix A

UK Defence mTBI Team Working Practices
Referral Process

1. There are 6 methods of referral to the mTBI team:
   - From the Complex Trauma team at [redacted]
   - From other groups at [redacted]
   - From [redacted]
   - From the mTBI website
   - From the Defence Patients Tracking Cell (DPTC)
   - From MIAC clinics

1.1 From the Complex Trauma Team at [redacted]:

1.1.1 Any member of staff in the Complex Trauma team can refer patients directly to the mTBI team.

1.1.2 All patients who have been involved in a blast injury, road traffic accident, assault, fall or gunshot wound, should be referred.

1.1.3 Relevant patient information is e-mailed through or details provided via telephone, to the mTBI team.

1.2 From other groups at [redacted]:

1.2.1 Referrals should be made via the relevant group Consultant to the mTBI Consultant using the Referral Questionnaire.

1.2.2 The mTBI Consultant forwards the information to the mTBI team.

1.3 From [redacted]

1.3.1 The Rehabilitation Coordination Officer at [redacted] can refer patients directly to the mTBI team.

1.3.2 All military personnel who have been involved in a blast injury, RTA, assault, fall or GSW, PLUS an alteration in consciousness directly related to the injury should be referred OR symptoms related to the injury.

1.3.3 Relevant patient information is e-mailed or faxed through to the mTBI team.

1.4 From the mTBI website

1.4.1 Referrals received from the mTBI website are discussed with the mTBI Consultant within 24 hours to make a decision on what action will be taken.

1.5 From the Defence Patients Tracking Cell (DPTC)
1.5.1 Any patients identified via the DPTC are discussed with the mTBI Consultant within 5 days to make a decision on what action will be taken.

1.6 From MIAC clinics

1.6.1 The mTBI Consultant and Registered Mental Health Nurse (RMN) conduct monthly MIAC clinics.

1.6.2 The Consultant will contact the mTBI team following an assessment, if the patient requires an mTBI screen.

**Assessment process**

1. All patients referred from within [redacted], are reviewed within 5 working days of receiving the referral. If this is not possible, the reason will be documented in the mTBI programme notes.

2. All out-patient referrals are reviewed within 20 days of receiving the referral. If this is not possible, the reason will be documented in the mTBI programme notes.

3. The mTBI therapist arranges an appointment to conduct the initial assessment.

4. The initial assessment is a face-to-face meeting with the patient, whenever possible.

5. When conducting the initial assessment, the therapist completes the referral information sheet and conducts a semi-structured interview to complete the full symptom checklist.

6. The therapist provides verbal feedback to the patient immediately after completion of the semi-structured interview, however, a definite written recommendation is only provided when this has been agreed with the mTBI Consultant.

7. The therapist compiles the mTBI Assessment report within 24 hours of the assessment.

8. The therapist arranges a meeting with the mTBI Consultant to take place within 5 working days following assessment completion.

**Report process**

1. On completion of the initial assessment, the therapist compiles a report using the information obtained during the semi-structured interview.

2. The report is completed within 48 hours of conducting the initial assessment.
3. The report consists of the following information:
   - Patient details
   - Referrer details
   - Details of injury
   - Current medication
   - Pre-injury medical history
   - Information from the structured interview (full symptom checklist)
   - Conclusion
   - Recommendations (Enter into Phase 2; Enter into Phase 3; Not appropriate for mTBI programme; Referral to other agencies).

4. The therapist arranges a meeting with the Consultant, within 5 days of completing the assessment report.

5. During the meeting with the Consultant, amendments can be made to the report, with consent from both the Consultant and the therapist.

6. Following the meeting with the Consultant, the therapist will amend the report accordingly within 24 hours.

7. On completion of the report, the Consultant and the therapist will both sign the report.

8. The report is distributed as follows:
   - The medical notes
   - The mTBI notes
   - The referring Consultant
   - The referring staff member (so long as no significant mental health problems have been identified on screening)
   - The Unit Medical Officer
   - Patients are not given a copy but are instructed to request a copy from their Consultant at their next clinic

9. Upon completion of this process the therapist actions the recommendation.

2. Treatment process

2.1 Phase 2

1. The Phase 2 intervention consists of telephone support and web-based support. This is a 12-week intervention programme.

2. Once the therapist and Consultant agree on the appropriate recommendation and the patient has entered Phase 2 of the programme, the patient will attend a further assessment and initial treatment session with the therapist:
3. During this session the patient will complete the following assessments:

3.1 Online Full Symptom Checklist
3.2 Multidimensional Health Locus of Control – Form C (MHLC – Form C)
3.3 Satisfaction With Life Scale (SWLS)
3.4 Short Form Health Survey (SF-36)

4. The patient will be given the following documents:

4.1 mTBI programme overview sheet #1
4.2 Relatives Education sheet #1
4.3 Action sheet #1b and 3b Part 1 and 2
4.4 Relevant Tip cards according to symptoms reported
4.5 Contact details of mTBI therapist (telephone number, e-mail address and postal address)

5. Whenever possible this initial treatment session will be conducted as a face to face appointment with the patient. This is to promote rapport with the patient. Patients who have not attended a face to face feedback session and have begun treatment by telephone support have been found to be harder to contact by telephone and less likely to engage with treatment.

6. However, in some cases an initial face to face meeting may not be possible (e.g. where this would involve the patient travelling a long distance to attend an outpatient appointment). In these circumstances this session may be conducted by telephone and by sending the tipcards by mail, conducting the assessments online.

7. The therapist will set up a schedule of phone contacts to be made at 1-2 week intervals.

8. The therapist will annotate in the mTBI notes when contact is made.

9. The aim of the telephone support is:

9.1 To provide support
9.2 To provide the patient with reassurance that improvements are expected
9.3 To encourage the patient to actively complete task given
9.4 To track and document patient progress
9.5 To detect and report any red flags at an early stage
9.6 To review and redo the Full Symptom Checklist every 1-2 weeks to highlight improvements. This can be done via the website or during phone call

10. The therapist should aim for a 30 minute conversation.

11. The therapist will review progress on the goals and treatment sheets with the patient.
12. The therapist will problem solve any issues arising from the treatment sheets and explore problem areas in more detail.

13. The therapist will set new goals with the patient to complete, every 2 weeks.

14. The therapist will note down any relevant issues and actions arising from the phone call and action them as appropriate. This will be annotated on the schedule.

15. On completion of the 12-week programme (or at any point during the programme if symptoms resolve), a MIAC will be scheduled with the Neuro Rehab Consultant to review the patient and recommend either discharge from the mTBI programme or ongoing treatment within Phase 3 or other relevant agencies.

Treatment process

3 Phase 3

1. Phase 3 intervention consists of a 2 week face-to-face group programme.

2. Treatment within the group programme includes an admission and discharge clinic, group presentations and one-to-one sessions with a designated therapist.

3. The 5 areas covered within the Phase 3 programme include the following:
   - Education
   - Pacing
   - Relaxation training
   - Adjustment
   - Resilience

(Refer to Phase 3 folders for the full treatment programme)

Discharge process

Phase 2:

1. When patients have completed the 12-week intervention programme they will be invited to attend a review appointment with their mTBI therapist.

2. Whenever possible this review session will be conducted as a face to face appointment with the patient. This is to ensure that a full review of
progress can take place within the required timescale and any
arrangements for follow up can be confirmed.

3. However, if a face to face review meeting is not possible this session
may be conducted by telephone.

4. At the review the patient will complete the following assessments:

4.1 Online Full Symptom Checklist
4.2 Multidimensional Health Locus of Control – Form C (MHLC – Form C)
4.3 Satisfaction With Life Scale (SWLS)
4.4 Short Form Health Survey (SF-36)

5. At the review the therapist and patient will discuss improvements
made during the Phase 3 programme and remaining difficulties if any.

6. The patient will be asked to report their current vocational status and
any issues currently impacting them at work. Prior to the review
meeting the patient's line manager will be sent a vocational
assessment form to be completed in order to identify any issues not
reported by the patient.

7. A recommended outcome will be agreed with the patient. The
outcome may be:

7.1 Discharge from Phase 2 for one of the following reasons:

7.2 Extension of Phase 2 programme for a specified length of time, after
which the review process will be applied again.

8. If the patient is discharged from the Phase 2 Programme a discharge
report is completed by the therapist stating reason for discharge which
may be one of the following:

a. Symptoms resolved during Phase 2 treatment
b. Remaining symptoms effectively managed and not interfering with
functioning
c. Non-engagement in programme – patient not contactable or not
applying strategies despite active intervention attempts
d. Patient discharged from active service
e. Patient referred to other services – (specify)

9. If a patient reports that symptoms have resolved prior to the 12 week
review then the patient may be discharged early by applying the above
working practice.

10. If at the 12 week review stage a patient is not contactable and does
not attend for a review appointment they may be discharged in
absentia. A letter will be sent to the patient explaining that attempts
have been made to contact them and that due to lack of contact they
will be discharged. The patient will be advised to contact the mTBI
team if symptoms are persisting.
11. Following discharge the therapist will compile a discharge summary report. A copy of the discharge summary report will be filed in the medical notes and the mTBI notes.

Phase 3:

1. The Consultant and therapist conduct a discharge clinic on the last day of the 2-week group programme. During this clinic, the therapist and Consultant discuss progress and recommendations.

2. Once discharged from the Phase 3 group programme, the therapist will provide the patient with ongoing telephone support, for a period of 12 weeks (Phase 4).

3. The patient will be reviewed after 12 weeks with a view to discharge as in discharge process for Phase 2 (see above).

4. Following discharge therapist will compile a discharge summary report.

5. The therapist will place a copy of the discharge report in the medical notes and the mTBI notes.

Follow-up process

1. All patients will receive follow-up from the therapist at the following intervals after discharge:
   - 3 months
   - 6 months
   - 1 year

2. If practicable the patient will attend an appointment with their mTBI therapist to review their progress at 3, 6 and 1 year. This is to ensure that a full review of progress can take place within the required timescale and any concerns can be identified. However, if a face to face review meeting is not possible this session may be conducted by telephone.

3. At 3, 6 and 1 year follow up the patient will complete the following assessments:
   3.1 Online Full Symptom Checklist
   3.2 Multidimensional Health Locus of Control – Form C (MHLC – Form C)
   3.3 Satisfaction With Life Scale (SWLS)
   3.4 Short Form Health Survey (SF-36)

4. At follow up the therapist and patient will discuss any changes since discharge from programme and any issues.
5. The patient will be asked to report their current vocational status. This may be confirmed with their line manager.

6. Following this review an outcome will be agreed with the patient. This may be one of the following:

7.1 No further action required
7.2 Re-entry onto mTBI Programme
7.3 Referral to other services

7. The therapist will document information obtained in the mTBI notes.

8. If the patient is non-contactable at any of the follow-up times (4 attempted contacts in 4 weeks), their case will be closed permanently.

9. Once a case is closed, this will be noted on file and database.
Appendix B
Questionnaire Pack Materials
Appendix B.1

Participant Information Sheet

We would like to invite you to participate in this research project being undertaken by Dr Jamie Hacker Hughes (Defence Medical Services), Dr Sue Thorpe (University of Surrey) and Laura France (University of Surrey).

You should only participate if you want to; choosing not to take part will not disadvantage you in any way. Before you decide whether you want to take part, it is important for you to understand why the research is being done and what your participation will involve. Ask us if there is anything that is not clear or if you would like more information.

What is this research project about?
Mild Traumatic Brain Injury (mTBI) is usually the result of a blow to the head. It is becoming more common amongst military personnel. mTBI can result in symptoms which can be difficult to live with. It is important that we provide the best treatment. To do this, we need to know more about the experiences of people following mTBI. This study will focus on something called ‘Post Traumatic Growth’ which means the positive changes that can result from traumatic experiences. We are interested in finding out whether some military personnel experience positive changes after mTBI so that we can begin to think about new and better ways to help them to recover.

What will you have to do?
If you agree to take part in this study, you will be asked to fill in a form telling me (Laura France) a little bit about yourself. I will then ask you to complete four questionnaires. I will be available to explain any parts of the questionnaire that are not clear. After you have completed these questionnaires, I will not need you to do anything else.

You should be aware that some of the questionnaires might ask you to think about difficult experiences and this might be upsetting for you. If you become uncomfortable at any point during or after taking part, you should seek advice from the Independent Medical Officer. His role is to act independently of the study team to ensure your safety and well-being. He may terminate your participation in the study on medical grounds at any time, and you may consult with him at any time.

You may at any time withdraw from the study without giving a reason. If you ever require any further explanation, please do not hesitate to ask. Participation in this research will not involve any financial cost to you.

What will we do with the information you provide?
Any information obtained during this trial will remain confidential. Your identity will not be revealed.
You should be aware that, if you should reveal any information during participation in this research which:
• raises concerns about your safety

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• raises concerns about somebody else's safety
• suggests that you have been involved in committing a crime

the researchers will be obliged to share this with the Independent Medical Officer, who may advise that further action is taken.

In the event of such concerns being raised, the researchers will be obliged to share this with the Independent Medical Officer, who may advise that further action is taken.

Investigator:
Name:
Laura France, BSc., MSc.
Address
Department of Psychology
Faculty of Arts and Human Sciences
University of Surrey
Guildford
Surrey
GU2 7XH
Telephone:
E-mail:
mtbi.project@surrey.ac.uk
Appendix B.2

Consent Form for Participants in Research Projects

- The nature, aims and risks of the research have been explained to me. I have read and understood the Participant Information Sheet and understand what is expected of me. All my questions have been answered fully to my satisfaction.

- I understand that if I decide at any time during the research that I no longer wish to participate in this project, I can notify the researchers involved and be withdrawn from it immediately without having to give a reason. I also understand that I may be withdrawn from it at any time, and that in neither case will this be held against me in subsequent dealings with the Ministry of Defence.

- I consent to the processing of my personal information for the purposes of this research study. I understand that such information will be treated as strictly confidential and handled in accordance with the provisions of the Data Protection Act 1998.

- I agree to volunteer as a participant for the study described in the information sheet and give full consent.

- This consent is specific to the particular study described in the Participant Information Sheet attached and shall not be taken to imply my consent to participate in any subsequent study or deviation from that detailed here.

Participant's Statement:

I ________________________________________________________

agree that the research project named above has been explained to me to my satisfaction and I agree to take part in the study. I have read both the notes written above and the Participant Information Sheet about the project, and understand what the research study involves.

Signed Date

Investigator's Statement:

I ________________________________________________________

confirm that I have carefully explained the nature, demands and any foreseeable risks (where applicable) of the proposed research to the Participant. I clearly understand my obligations and the rights of research participants, particularly concerning recruitment of participants and obtaining valid consent. The information supplied above is to the best of my knowledge and belief accurate.
### Appendix B.3

**Demographic Questionnaire**

**About you**

1. Gender (please tick)  
   - □ Male  
   - □ Female

2. Please state your age  
   - ........ years

3. Ethnic group (please tick)  
   - □ White  
   - □ Asian or Asian British  
   - □ Mixed  
   - □ Black or Black British  
   - □ Other ethnic group (please state)

4. Service (please tick)  
   - □ Army  
   - □ Royal Air Force  
   - □ Royal Navy  
   - □ Royal Marines

5. Regular or territorial (please tick)  
   - □ Regular  
   - □ Territorial

6. Rank (please tick)  
   - □ Private / Aircraftsman / Able Seaman  
   - □ Junior Non-commissioned Officer  
   - □ Senior Non-commissioned Officer  
   - □ Warrant Officer  
   - □ Junior Commissioned Officer  
   - □ Senior Commissioned Officer

7. Please state your length of time in service  
   - ........ months  
   - OR  
   - ........ years

**About your head injury / mTBI**

1. Have you had an injury that involved a knock to the head / force to the head? (please tick)  
   - □ Yes  
   - □ No

2. Cause of injury (please tick)  
   - □ Blast injury  
   - □ Gun shot wound (neck or above)  
   - □ Fall  
   - □ Assault  
   - □ Road traffic accident  
   - □ Other
3. If you have ticked 'Other' for Question 2 (above), please tell us how your injury happened

4. Did you lose consciousness when you were injured? (please tick)
   - Yes
   - No

5. If you have ticked 'Yes' for Question 4 (above), how long were you unconscious for?
   - 0 – 3 minutes
   - 3 – 15 minutes
   - 15 – 30 minutes
   - More than 30 minutes

6. Did you suffer any other injury APART FROM your head injury? (please tick)
   - Yes
   - No

7. If you have ticked 'Yes' to Question 6 above, please tell us what OTHER part of your body was injured

Please turn over

We just need a few more details

Please remember that this information is confidential

1. Do you take any medication that is prescribed to you by a doctor? (please tick)
   - Yes
   - No

2. If you have ticked 'Yes' for question 1 above, what is the name of this medicine and what is it for?

<table>
<thead>
<tr>
<th>Name of medicine</th>
<th>What this medicine is for</th>
</tr>
</thead>
</table>

3. Do you use any drugs that are NOT prescribed by a doctor? (please tick)
   - Yes
   - No

4. If you have ticked 'Yes' for Question 2 above, about how often do you use these drugs?

5. Do you drink alcohol? (please tick)
   - Yes
   - No

6. If you have ticked 'Yes' for Question 5 above, about how much alcohol per week do you drink?

   ......... units

1 Unit =
½ pint of beer OR
small glass of wine OR
single measure of spirit

Thank you

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Appendix B.4

The Posttraumatic Growth Inventory (PTGI)

**Instructions:** Below is a list of changes that some people experience after a stressful experience. Please read each one carefully. Put a tick in the box that best matches how much you experience what is described. The stressful experience that we would like you to think about is your recent injury.

<table>
<thead>
<tr>
<th></th>
<th>Did not experience</th>
<th>Experienced to a very small degree</th>
<th>Experienced to a small degree</th>
<th>Experienced to a moderate degree</th>
<th>Experienced to a great degree</th>
<th>Experienced to a very great degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I changed my priorities about what is important in life</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I have a greater appreciation for the value of my own life</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>I developed new interests</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>I have a greater feeling of self-reliance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>I have a better understanding of spiritual matters</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>I more clearly see that I can count on people in times of trouble</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>I established a new path for my life</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>I have a greater sense of closeness with others</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>I am more willing to express my emotions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>I know better that I can handle difficulties</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>I am able to do better things with my life</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>I am better able to accept the way things work out</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>I can better</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
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<td>---</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>New opportunities are available which wouldn't have been otherwise</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>I have more compassion for others</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>I put more effort into my relationships</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>I am more likely to try to change things which need changing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>I have a stronger religious faith</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>I discovered that I'm stronger than I thought I was</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>I learned a great deal about how wonderful people are</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>I better accept needing others</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PTSD Checklist – Military Version (PCL-M)

**Instructions:** Below is a list of difficulties that military personnel sometimes have in response to a stressful military experience. Please read each one carefully. Put a tick in the box that best matches how much you experience what is described.

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>A little bit</th>
<th>Moderately</th>
<th>Quite a bit</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Repeated, disturbing memories, thoughts, or images of a stressful military experience?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Repeated, disturbing dreams of a stressful military experience?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Suddenly acting or feeling as if a stressful military experience were happening again (as if you were reliving it)?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Feeling very upset when something reminded you of a stressful military experience?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Having physical reactions (e.g. heart pounding, trouble breathing, or sweating) when something reminded you of a stressful military experience?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Avoid thinking about or talking about a stressful military experience or avoid having feelings related to it?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Avoid activities or talking about a stressful military experience or avoid having feelings related to it?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Trouble remembering important parts of a stressful military experience?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Loss of interest in things that you used to enjoy?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Feeling distant or cut off from other people?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Feeling emotionally numb or being unable to have loving feelings for those close to you?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Feeling as if your future will somehow be cut short?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Trouble falling or staying asleep?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Feeling irritable or having angry outbursts?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Having difficulty concentrating?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Being “super alert” or watchful on guard?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Feeling jumpy or easily startled?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix C
Ethics
Appendix C.1

MoD Research Ethics Committee (General)
MINISTRY OF DEFENCE
Level 1, Zone K, Main Building,
Whitehall
London SW1A 2HB

Miss Laura Hart, Ref: 080 /Gen/09
Department of Psychology
Faculty of Arts and Human Sciences
University of Surrey
Guildford
Surrey
GU2 7XH

Dear Miss Hart,

Re: Post-Traumatic Growth in Military Personnel with Mild Traumatic Brain Injury (080 /Gen/09)

Thank you for coming to the MoDREC meeting yesterday to present this protocol. The Committee agreed to approve this research subject to a few points being addressed:

1. Please mention the interval between the injury and assessment, explaining why this is not crucial.

2. Add a sentence explaining how demonstration of post-traumatic growth in this group may lead to better support being provided for these patients.

3. Please name the IMO.

4. Participant Information – please do not inform their consultant that they are taking part, for the reasons given at the meeting.

5. Participant Information – 6th paragraph – say that they should seek advice from the Independent Medical Officer; give his name and contact details at the end of this Information.
5. Participant Information – under ‘What will you have to do?’ – please say ‘study’ in place of ‘trial’.

6. Information for Participants – give more explanation about why the study is being done.

7. Consent form – delete mention of No-Fault Compensation (it does not apply as they are patients).

8. Please seek statistical advice from [Name]

9. Participant Information Sheet – please say how quickly the IMO can be contacted.

10. Add the words ‘in complete confidence’ to the poster.

11. Deal with the point made at the meeting about criminal activity, altering the Participant Information Sheet accordingly.

12. Please make sure that the reference list is complete.

Please would you also thank Dr Thorpe for attending.

Yours sincerely,

[Name]
Chairman MoD Research Ethics Committee (General)
Dear Laura,

PROTOCOL: POST-TRAUMATIC GROWTH IN MILITARY PERSONNEL WITH MILD TRAUMATIC BRAIN INJURY V2 # ARMY-SAC

Reference:
A. MoDREC protocol and application to RN-SAC dated 12/2009. V2
B. Autumn term MoDREC meeting discussion
C. Meeting with SGK at INM

Thank you for making the simple changes in your protocol which is much improved. Our recommendation to MoDREC is that works are of good scientific standard and should proceed subject to the final authoritative satisfaction of MoDREC. If you require and help with your project please do not hesitate to contact me.

Yours aye,

Chairman RN-SAC.

cc Chair MoDREC
Dear Miss Hart,


Thank you for submitting this interesting protocol for ethical review and for making minor revisions.

I am happy to give ethical approval for this research and should be grateful if you would send me a copy of your final report on completion of the study. Please would you also send me a brief interim report in one year’s time if the study is still ongoing.

This approval is conditional upon adherence to the protocol – please let me know if any amendment becomes necessary.

Yours sincerely,

Chairman MoD Research Ethics Committee (General)
Appendix C.4

Chair: Faculty of Arts and Human Sciences Ethics Committee
University of Surrey

Laura Hart
PsychD Clinical Trainee
Department of Psychology
University of Surrey

29th January 2010

Dear Laura

Reference: 412-PSY-10 (MoD REC Approved)
Title of Project: Post Traumatic Growth in Military Personnel with Mild Traumatic Brain Injury

Thank you for your submission of the above proposal.

The Faculty of Arts and Human Sciences Ethics Committee has given favourable ethical opinion.

If there are any significant changes to this proposal you may need to consider requesting scrutiny by the Faculty Ethics Committee.

Yours sincerely
Appendix D

Data Analyses
Appendix D.1

HADS Anxiety Total Score Boxplot

HADS Depression Total Score Boxplot
PTGI New Possibilities Factor Score Boxplot

PTGI Personal Strength Factor Score Boxplot
NEO-FFI Extraversion t-Score Boxplot

NEO-FFI Openness t-Score Boxplot
NEO-FFI Agreeableness t-Score
Boxplot

Agreeableness t-Score

NEO-FFI Conscientiousness t-Score
Boxplot

Conscientiousness t-Score
Time Since Injury Boxplot

- Lower quartile (Q1): 5.00
- Median: 8.00
- Upper quartile (Q3): 30.00
- Minimum: 5.00
- Maximum: 86.00
Appendix D.2

Table D.2.1

Percentage of z-scores in distributions of scores equal to or greater than expected values

<table>
<thead>
<tr>
<th></th>
<th>per cent ≥ 1.96</th>
<th>per cent ≥ 2.58</th>
<th>per cent ≥ 3.29</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HADS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Anxiety Score</td>
<td>2.44</td>
<td>2.44</td>
<td>0</td>
</tr>
<tr>
<td>Total Depression</td>
<td>2.44</td>
<td>2.44</td>
<td>0</td>
</tr>
</tbody>
</table>

| **PTGI**             |                 |                 |                 |
| Total               | 0               | 0               | 0               |
| Relating to Others  | 2.44            | 0               | 0               |
| New Possibilities   | 2.44            | 0               | 0               |
| Personal Strength   | 4.88            | 0               | 0               |
| Spiritual Change    | 4.88            | 2.44            | 0               |
| Appreciation of Life| 2.44            | 0               | 0               |

| **PCL-M**            |                 |                 |                 |
| Total Anxiety Score  | 2.44            | 0               | 0               |

| **NEO-FFI**          |                 |                 |                 |
| Neuroticism          | 4.88            | 0               | 0               |
| Extraversion         | 7.32            | 0               | 0               |
| Openness             | 4.88            | 0               | 0               |
| Agreeableness        | 2.44            | 2.44            | 0               |
| Conscientiousness    | 12.20           | 0               | 0               |
Appendix D.3

Distribution of HADS Anxiety Total Scores

![Distribution of HADS Anxiety Total Scores](image)

Distribution of HADS Depression Total Scores

![Distribution of HADS Depression Total Scores](image)

- **Distribution of HADS Anxiety Total Scores**
  - Mean: 7.90
  - Std. Dev.: 4.527
  - N: 41

- **Distribution of HADS Depression Total Scores**
  - Mean: 6.66
  - Std. Dev.: 4.498
  - N: 41
Distribution of PTGI Total Scores

Mean = 39.85
Std. Dev. = 18.836
N = 41

Distribution of PTGI Relating to Others Factor Scores

Mean = 12.34
Std. Dev. = 7.575
N = 41
Distribution of PTGI New Possibilities Factor Scores

- Mean = 9.39
- Std. Dev. = 6.36
- N = 41

Distribution of PTGI Personal Strength Factor Scores

- Mean = 8.61
- Std. Dev. = 4.427
- N = 41
Distribution of PTGI Spiritual Change Factor Scores

- Mean = 1.29
- Std. Dev. = 1.965
- N = 41

Distribution of PTGI Appreciation of Life Factor Scores

- Mean = 8.22
- Std. Dev. = 3.644
- N = 41
Distribution of scores on PCL-M

Distribution of NEO-FFI Neuroticism t-Scores
Distribution of NEO-FFI Extraversion t-Scores

![Distribution of Extraversion t-Scores]

- Mean = 50
- Std. Dev. = 12.564
- N = 41

Distribution of NEO-FFI Openness t-Scores

![Distribution of Openness t-Scores]

- Mean = 44
- Std. Dev. = 9.711
- N = 41
Distribution of NEO-FFI Agreeableness t-Scores

- Mean = 40.66
- Std. Dev. = 10.532
- N = 41

Distribution of NEO-FFI Conscientiousness t-Scores

- Mean = 48.66
- Std. Dev. = 10.532
- N = 41
Distribution of Age in Sample

Mean = 30.51
Std. Dev. = 6.454
N = 41

Distribution of Length of Time in Service

Mean = 121.12
Std. Dev. = 80.846
N = 41
Distribution of Time Since Injury

Mean = 18.71
Std. Dev. = 13.159
N = 41
### Table D.4.1

**Skewness and kurtosis for scores on HADS A Scale**

<table>
<thead>
<tr>
<th></th>
<th>z-score</th>
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<tbody>
<tr>
<td>Skewness</td>
<td>.563</td>
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<tr>
<td>Std. Error of Skewness</td>
<td>.369</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>.115</td>
</tr>
<tr>
<td>Std. Error of Kurtosis</td>
<td>.724</td>
</tr>
</tbody>
</table>

*Note.*

\[ Z_{skewness} = \frac{Skewness}{SE_{skewness}} \]

\[ Z_{kurtosis} = \frac{Kurtosis}{SE_{kurtosis}} \]

### Table D.4.2

**Skewness and kurtosis for scores on HADS D Scale**

<table>
<thead>
<tr>
<th></th>
<th>z-score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skewness</td>
<td>.655</td>
</tr>
<tr>
<td>Std. Error of Skewness</td>
<td>.369</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>.635</td>
</tr>
<tr>
<td>Std. Error of Kurtosis</td>
<td>.724</td>
</tr>
</tbody>
</table>

*Note.*

\[ Z_{skewness} = \frac{Skewness}{SE_{skewness}} \]

\[ Z_{kurtosis} = \frac{Kurtosis}{SE_{kurtosis}} \]

### Table D.4.3

**Skewness and kurtosis for scores on PTGI Total**

<table>
<thead>
<tr>
<th></th>
<th>z-score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skewness</td>
<td>-.096</td>
</tr>
<tr>
<td>Std. Error of Skewness</td>
<td>.369</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>-.889</td>
</tr>
<tr>
<td>Std. Error of Kurtosis</td>
<td>.724</td>
</tr>
</tbody>
</table>

*Note.*

\[ Z_{skewness} = \frac{Skewness}{SE_{skewness}} \]

\[ Z_{kurtosis} = \frac{Kurtosis}{SE_{kurtosis}} \]

### Table D.4.4

**Skewness and kurtosis for scores on PTGI Relating to Others Factor**

<table>
<thead>
<tr>
<th></th>
<th>z-score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skewness</td>
<td>-.024</td>
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<tr>
<td>Std. Error of Skewness</td>
<td>.369</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>-.861</td>
</tr>
<tr>
<td>Std. Error of Kurtosis</td>
<td>.724</td>
</tr>
</tbody>
</table>

*Note.*

\[ Z_{skewness} = \frac{Skewness}{SE_{skewness}} \]

\[ Z_{kurtosis} = \frac{Kurtosis}{SE_{kurtosis}} \]
Table D.4.5

<table>
<thead>
<tr>
<th>Skewness and kurtosis for scores on PTGI New Possibilities Factor</th>
<th>z-score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skewness</td>
<td>.342</td>
</tr>
<tr>
<td>Std. Error of Skewness</td>
<td>.369</td>
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<tr>
<td>Kurtosis</td>
<td>-.740</td>
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<tr>
<td>Std. Error of Kurtosis</td>
<td>.724</td>
</tr>
</tbody>
</table>

Note.

$z_{\text{skewness}} = \frac{\text{Skewness}}{SE_{\text{skewness}}}$

$z_{\text{kurtosis}} = \frac{\text{Kurtosis}}{SE_{\text{kurtosis}}}$

Table D.4.6

<table>
<thead>
<tr>
<th>Skewness and kurtosis for scores on PTGI Personal Strength Factor</th>
<th>z-score</th>
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</thead>
<tbody>
<tr>
<td>Skewness</td>
<td>.219</td>
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<tr>
<td>Std. Error of Skewness</td>
<td>.369</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>.324</td>
</tr>
<tr>
<td>Std. Error of Kurtosis</td>
<td>.724</td>
</tr>
</tbody>
</table>

Note.

$z_{\text{skewness}} = \frac{\text{Skewness}}{SE_{\text{skewness}}}$

$z_{\text{kurtosis}} = \frac{\text{Kurtosis}}{SE_{\text{kurtosis}}}$

Table D.4.7

<table>
<thead>
<tr>
<th>Skewness and kurtosis for scores on PTGI Spiritual Change Factor</th>
<th>z-score</th>
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<tbody>
<tr>
<td>Skewness</td>
<td>1.500</td>
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<tr>
<td>Std. Error of Skewness</td>
<td>.369</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>1.324</td>
</tr>
<tr>
<td>Std. Error of Kurtosis</td>
<td>.724</td>
</tr>
</tbody>
</table>

Note.

$z_{\text{skewness}} = \frac{\text{Skewness}}{SE_{\text{skewness}}}$

$z_{\text{kurtosis}} = \frac{\text{Kurtosis}}{SE_{\text{kurtosis}}}$

Table D.4.8

<table>
<thead>
<tr>
<th>Skewness and kurtosis for scores on PTGI Appreciation of Life Factor</th>
<th>z-score</th>
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<tbody>
<tr>
<td>Skewness</td>
<td>-.185</td>
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</tbody>
</table>

Note.

$z_{\text{skewness}} = \frac{\text{Skewness}}{SE_{\text{skewness}}}$

$z_{\text{kurtosis}} = \frac{\text{Kurtosis}}{SE_{\text{kurtosis}}}$

277
<table>
<thead>
<tr>
<th>Std. Error of Skewness</th>
<th>.369</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kurtosis</td>
<td>-0.95b</td>
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<tr>
<td>Std. Error of Kurtosis</td>
<td>.724</td>
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</tbody>
</table>

*Note.*

\[ Z_{\text{skewness}} = \text{Skewness} / SE_{\text{skewness}} \]

\[ Z_{\text{kurtosis}} = \text{Kurtosis} / SE_{\text{kurtosis}} \]

**Table D.4.9**

<table>
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<th>Skewness</th>
<th>0.69a</th>
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<td>Std. Error of Skewness</td>
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<tr>
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<td>-0.39b</td>
</tr>
<tr>
<td>Std. Error of Kurtosis</td>
<td>.724</td>
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</tbody>
</table>

*Note.*

\[ Z_{\text{skewness}} = \text{Skewness} / SE_{\text{skewness}} \]

\[ Z_{\text{kurtosis}} = \text{Kurtosis} / SE_{\text{kurtosis}} \]

**Table D.4.10**

<table>
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<tr>
<th>Skewness</th>
<th>-0.60a</th>
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<td>Std. Error of Skewness</td>
<td>.369</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>-0.48b</td>
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<tr>
<td>Std. Error of Kurtosis</td>
<td>.724</td>
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</tbody>
</table>

*Note.*

\[ Z_{\text{skewness}} = \text{Skewness} / SE_{\text{skewness}} \]

\[ Z_{\text{kurtosis}} = \text{Kurtosis} / SE_{\text{kurtosis}} \]

**Table D.4.11**

<table>
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<td>.369</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>-0.55b</td>
</tr>
<tr>
<td>Std. Error of Kurtosis</td>
<td>.724</td>
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</tbody>
</table>

*Note.*

\[ Z_{\text{skewness}} = \text{Skewness} / SE_{\text{skewness}} \]

\[ Z_{\text{kurtosis}} = \text{Kurtosis} / SE_{\text{kurtosis}} \]
### Skewness and kurtosis for scores on NEO-FFI Openness

<table>
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<tr>
<th></th>
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<tbody>
<tr>
<td>Skewness</td>
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<td>.369</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>-.025</td>
</tr>
<tr>
<td>Std. Error of Kurtosis</td>
<td>.724</td>
</tr>
</tbody>
</table>

**Note.**
- $z_{\text{skewness}} = \text{Skewness} / \text{SE}_{\text{skewness}}$
- $z_{\text{kurtosis}} = \text{Kurtosis} / \text{SE}_{\text{kurtosis}}$

Table D.4.13

### Skewness and kurtosis for scores on NEO-FFI Agreeableness

<table>
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<tr>
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<tbody>
<tr>
<td>Skewness</td>
<td>.836</td>
</tr>
<tr>
<td>Std. Error of Skewness</td>
<td>.369</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>.667</td>
</tr>
<tr>
<td>Std. Error of Kurtosis</td>
<td>.724</td>
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</tbody>
</table>

**Note.**
- $z_{\text{skewness}} = \text{Skewness} / \text{SE}_{\text{skewness}}$
- $z_{\text{kurtosis}} = \text{Kurtosis} / \text{SE}_{\text{kurtosis}}$

Table D.4.14

### Skewness and kurtosis for scores on NEO-FFI Conscientiousness

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Skewness</td>
<td>.171</td>
</tr>
<tr>
<td>Std. Error of Skewness</td>
<td>.369</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>.606</td>
</tr>
<tr>
<td>Std. Error of Kurtosis</td>
<td>.724</td>
</tr>
</tbody>
</table>

**Note.**
- $z_{\text{skewness}} = \text{Skewness} / \text{SE}_{\text{skewness}}$
- $z_{\text{kurtosis}} = \text{Kurtosis} / \text{SE}_{\text{kurtosis}}$

Table D.4.15

### Skewness and kurtosis for age

<table>
<thead>
<tr>
<th></th>
<th>z-score</th>
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<tbody>
<tr>
<td>Skewness</td>
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<td>.369</td>
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<tr>
<td>Kurtosis</td>
<td>-.743</td>
</tr>
<tr>
<td>Std. Error of Kurtosis</td>
<td>.724</td>
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</table>

**Note.**
- $z_{\text{skewness}} = \text{Skewness} / \text{SE}_{\text{skewness}}$

279
<table>
<thead>
<tr>
<th>Table D.4.16</th>
<th>Skewness and kurtosis for length of service</th>
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</thead>
<tbody>
<tr>
<td><strong>z-score</strong></td>
<td><strong>Skewness</strong></td>
</tr>
<tr>
<td>z-score</td>
<td>.806</td>
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</tbody>
</table>

**Note.**

* $z_{skewness} = \frac{\text{Skewness}}{\text{SE}_{skewness}}$

* $z_{kurtosis} = \frac{\text{Kurtosis}}{\text{SE}_{kurtosis}}$

<table>
<thead>
<tr>
<th>Table D.4.17</th>
<th>Skewness and kurtosis for time since injury</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>z-score</strong></td>
<td><strong>Skewness</strong></td>
</tr>
<tr>
<td>z-score</td>
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</table>

**Note.**

* $z_{skewness} = \frac{\text{Skewness}}{\text{SE}_{skewness}}$

* $z_{kurtosis} = \frac{\text{Kurtosis}}{\text{SE}_{kurtosis}}$
Appendix D.5

Table D.5.1

*Normality statistics for score distributions on all standardised measures*

<table>
<thead>
<tr>
<th></th>
<th>Kolmogorov-Smirnov</th>
<th>Shapiro-Wilk</th>
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<tr>
<td></td>
<td>Statistic</td>
<td>df</td>
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<td>HADS Anxiety Total Score</td>
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<tr>
<td>HADS Depression Total</td>
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<td>41</td>
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<tr>
<td>Score</td>
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<td></td>
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Table D.5.2

*Normality statistics for transformed score distributions*

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### Research Log Checklist

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<td>1</td>
<td>Formulating and testing hypotheses and research questions</td>
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<tr>
<td>2</td>
<td>Carrying out a structured literature search using information technology and literature search tools</td>
</tr>
<tr>
<td>3</td>
<td>Critically reviewing relevant literature and evaluating research methods</td>
</tr>
<tr>
<td>4</td>
<td>Formulating specific research questions</td>
</tr>
<tr>
<td>5</td>
<td>Writing brief research proposals</td>
</tr>
<tr>
<td>6</td>
<td>Writing detailed research proposals/protocols</td>
</tr>
<tr>
<td>7</td>
<td>Considering issues related to ethical practice in research, including issues of diversity, and structuring plans accordingly</td>
</tr>
<tr>
<td>8</td>
<td>Obtaining approval from a research ethics committee</td>
</tr>
<tr>
<td>9</td>
<td>Obtaining appropriate supervision for research</td>
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<tr>
<td>10</td>
<td>Obtaining appropriate collaboration for research</td>
</tr>
<tr>
<td>11</td>
<td>Collecting data from research participants</td>
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<td>Choosing appropriate design for research questions</td>
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<td>13</td>
<td>Writing patient information and consent forms</td>
</tr>
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<td>Devising and administering questionnaires</td>
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<td>15</td>
<td>Negotiating access to study participants in applied NHS settings</td>
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<tr>
<td>16</td>
<td>Setting up a data file</td>
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<tr>
<td>17</td>
<td>Conducting statistical data analysis using SPSS</td>
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<tr>
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<td>Choosing appropriate statistical analyses</td>
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<td>Preparing quantitative data for analysis</td>
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<tr>
<td>21</td>
<td>Summarising results in figures and tables</td>
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<tr>
<td>22</td>
<td>Conducting semi-structured interviews</td>
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<td>23</td>
<td>Transcribing and analysing interview data using qualitative methods</td>
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<td>Choosing appropriate qualitative analyses</td>
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<td>Interpreting results from quantitative and qualitative data analysis</td>
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<tr>
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<td>Presenting research findings in a variety of contexts</td>
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<tr>
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<td>Producing a written report on a research project</td>
</tr>
<tr>
<td>28</td>
<td>Defending own research decisions and analyses</td>
</tr>
<tr>
<td>29</td>
<td>Submitting research reports for publication in peer-reviewed journals or edited book</td>
</tr>
<tr>
<td>30</td>
<td>Applying research findings to clinical practice</td>
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</tbody>
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* See Appendix A to Portfolio Volume One
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